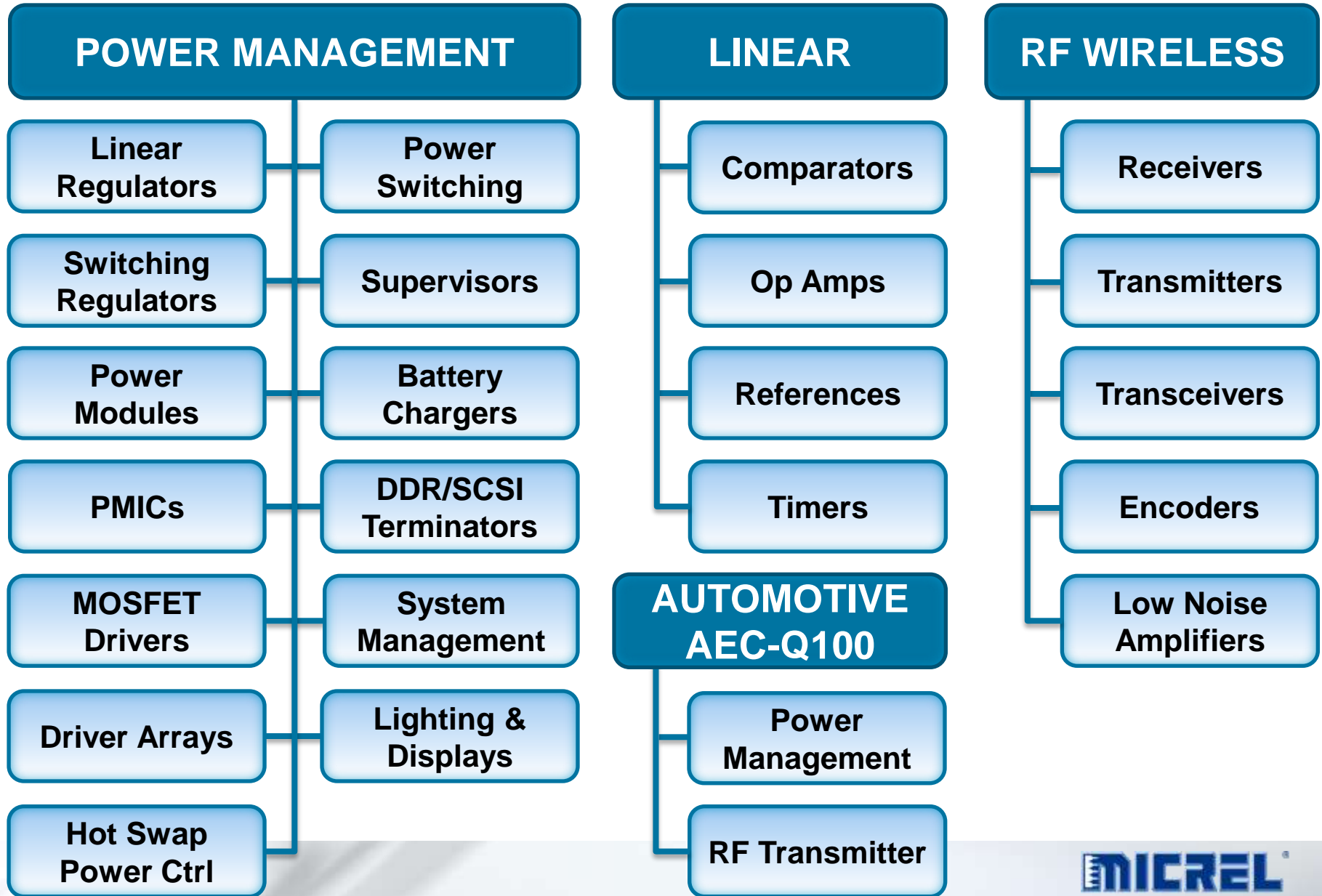


Linear and Power Interactive Product Selector





Switching Regulators

Step-Down (Buck)

Internal SW

V_{IN} Max
5.5V to 6V

V_{IN} Max
16V to 75V

External SW

Multi-Output

Multi-Phase

Step-Up (Boost)

Internal SW

External SW

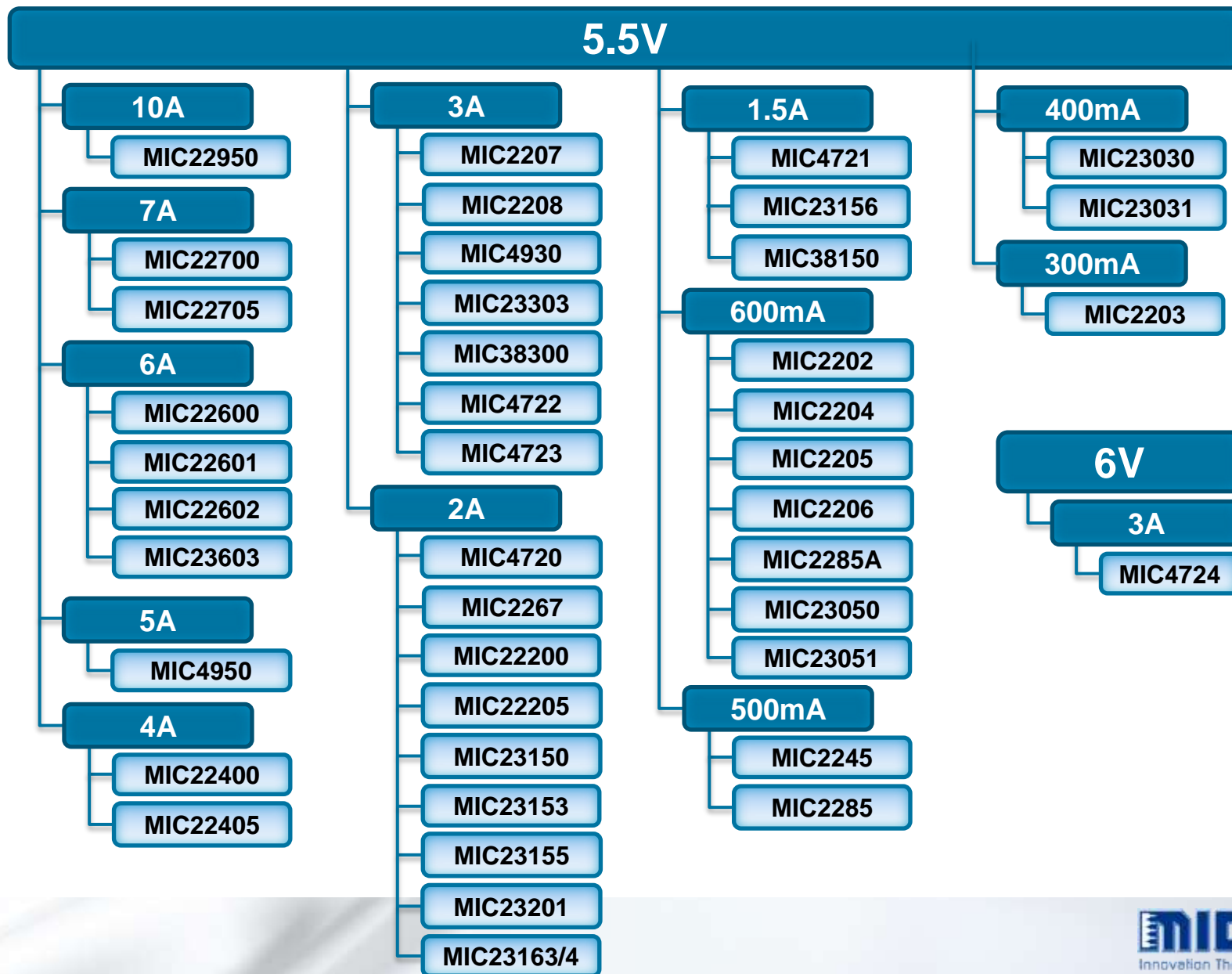
Flyback/Fwd/Push-Pull

Digital Controllers



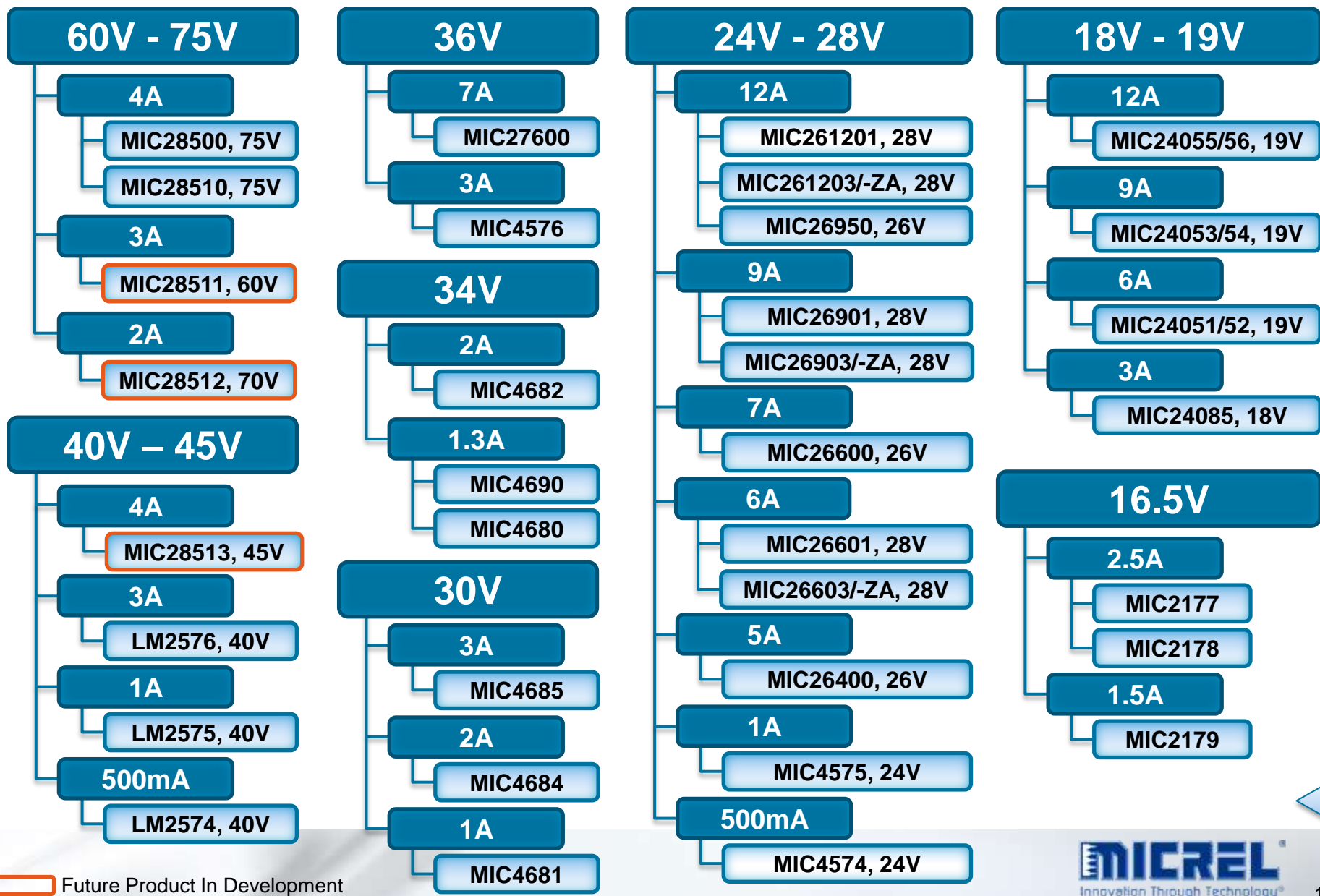


Step Down (Buck) Internal SW





Step Down (Buck) Internal SW



Low Dropout Regulators



Single LDOs

V_{IN} Max
-16V to 5.5V

V_{IN} Max
6V to 16V

V_{IN} Max
24V to 120V

Dual LDOs

$I_{OUT1} = I_{OUT2}$

$I_{OUT1} \neq I_{OUT2}$

Multi Channel LDOs

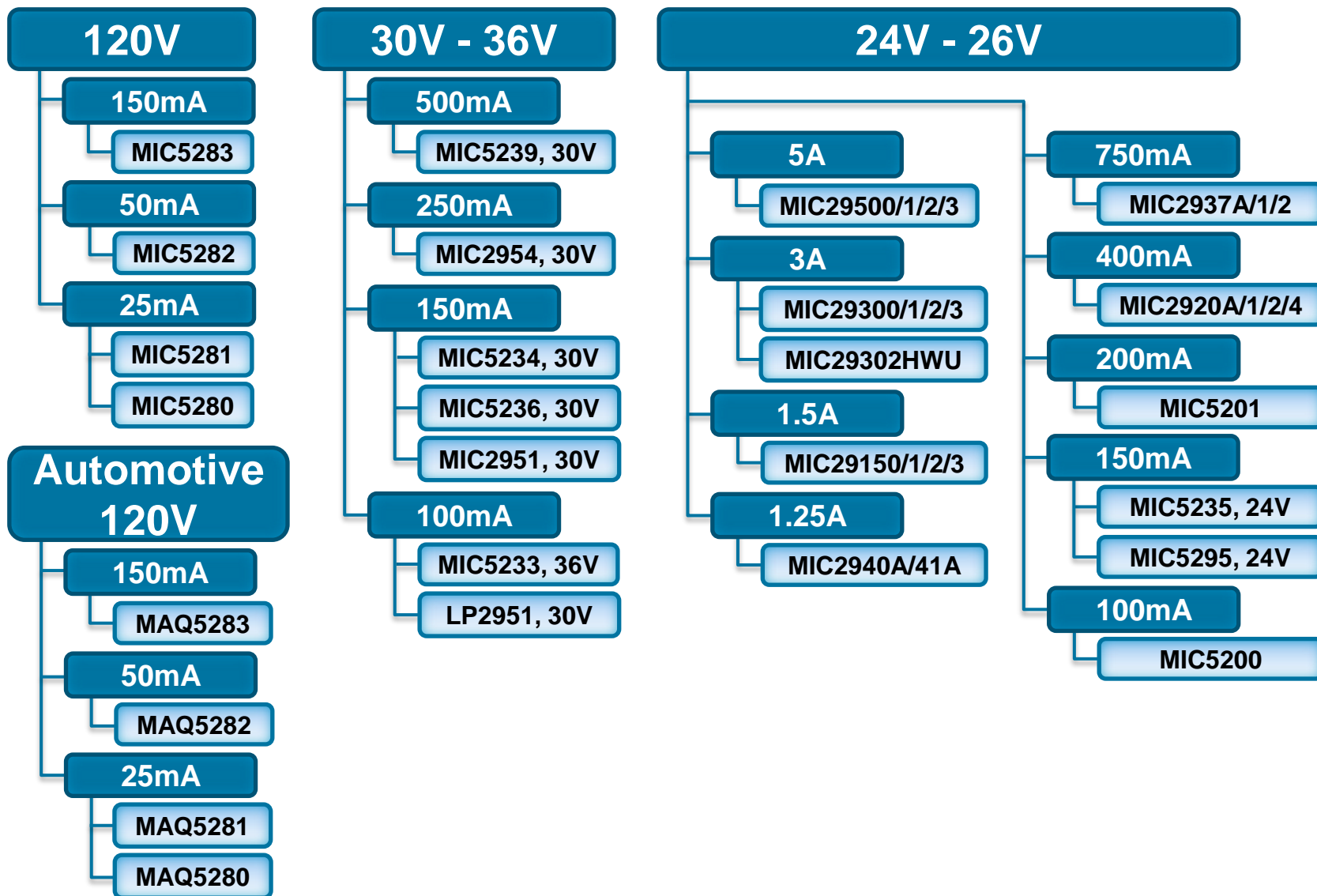
LDO Controllers

**Linear Power Filter
Ripple Blocker™**





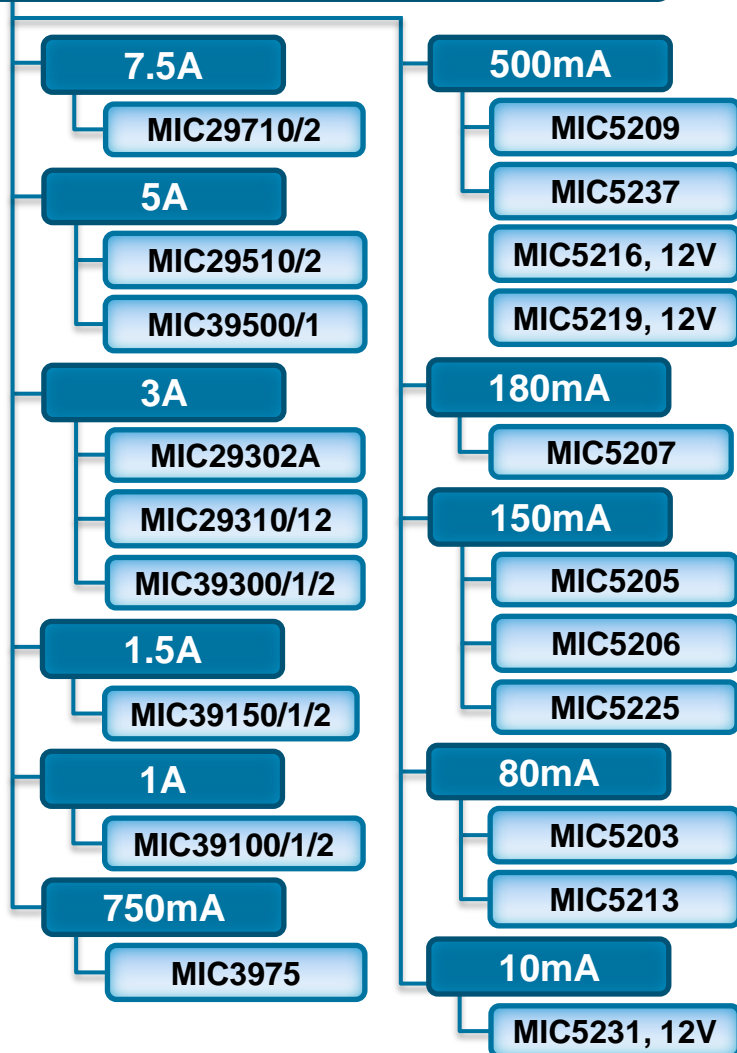
Low Dropout Regulators



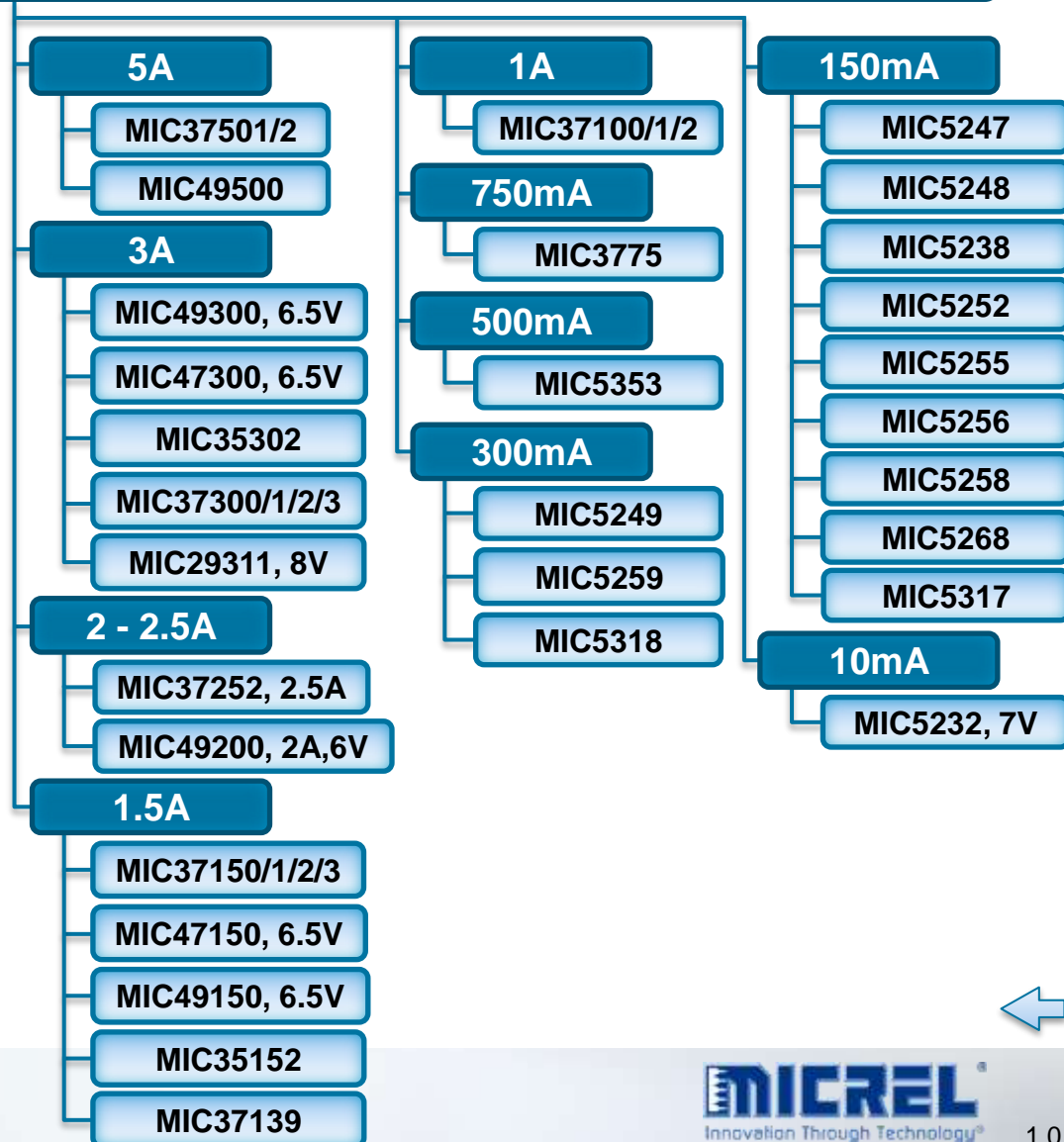
Low Dropout Regulators



12V - 16V

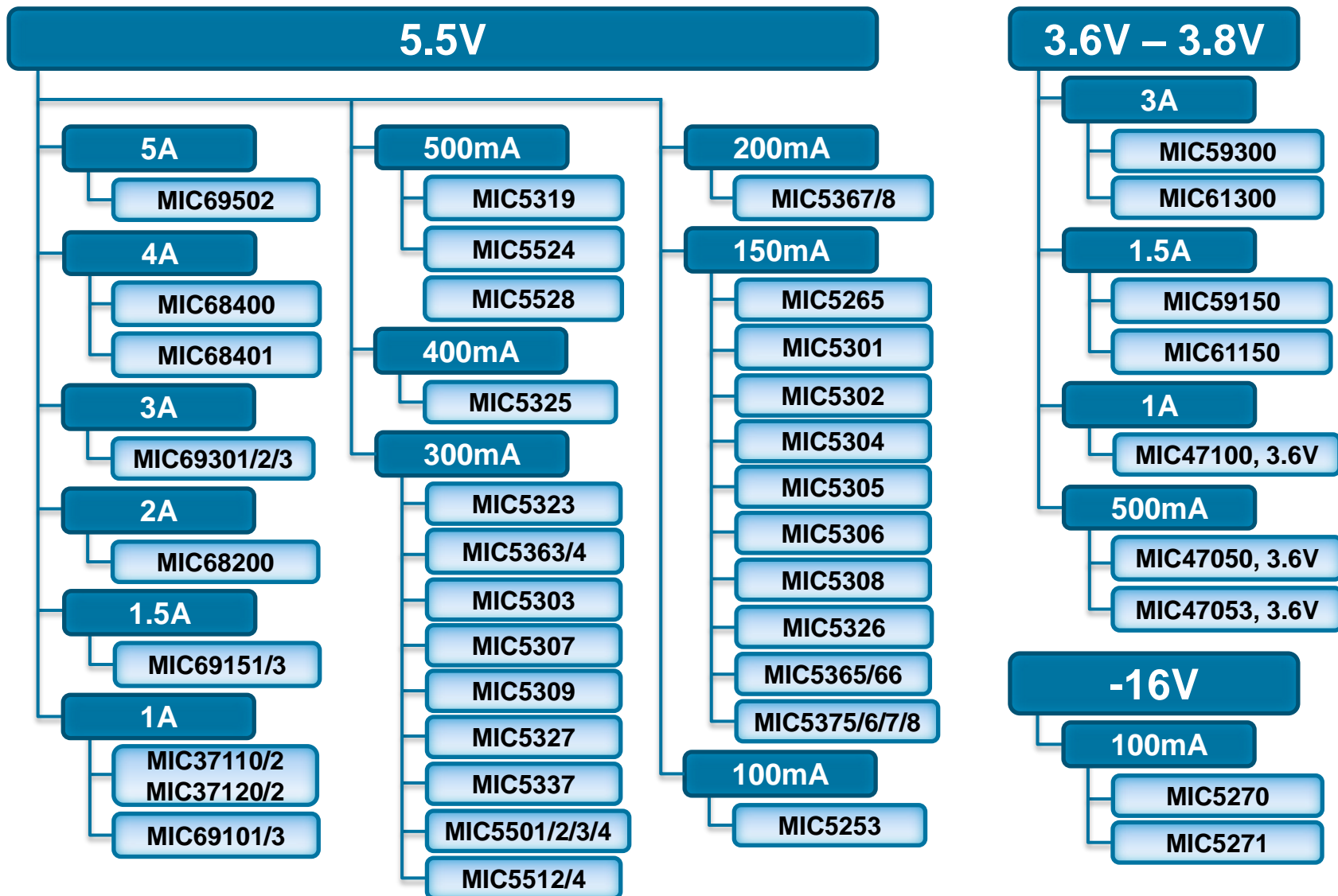


6V - 8V



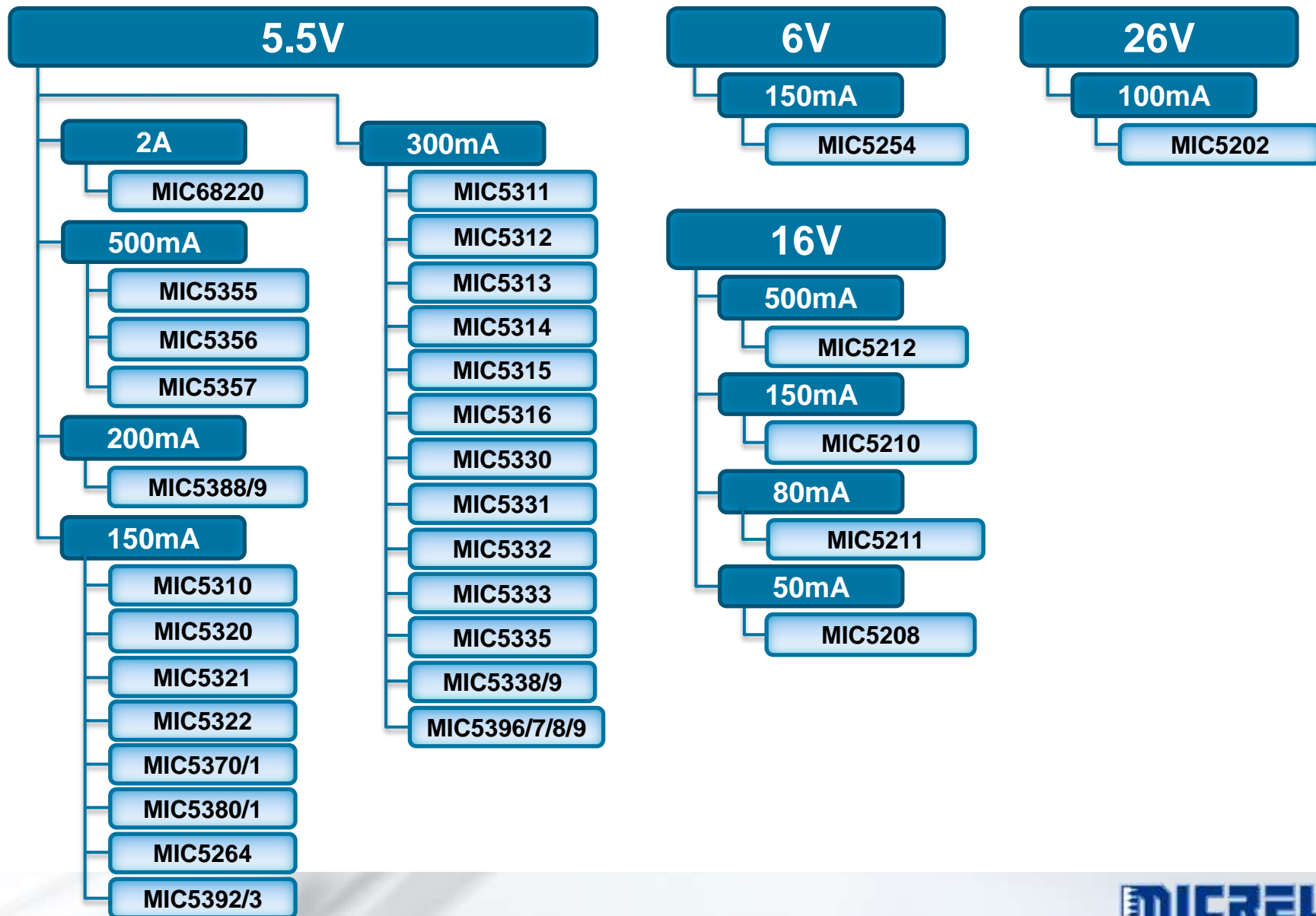


Low Dropout Regulators

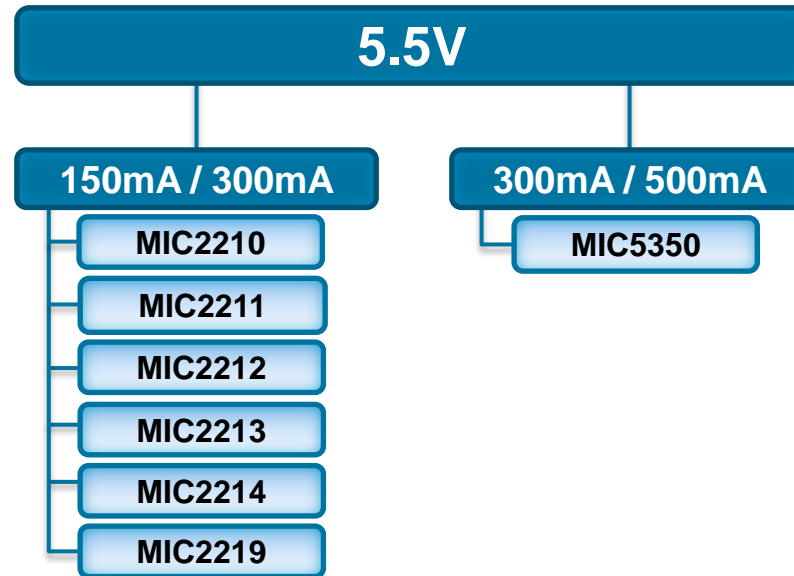




Dual LDOs $I_{OUT1} = I_{OUT2}$

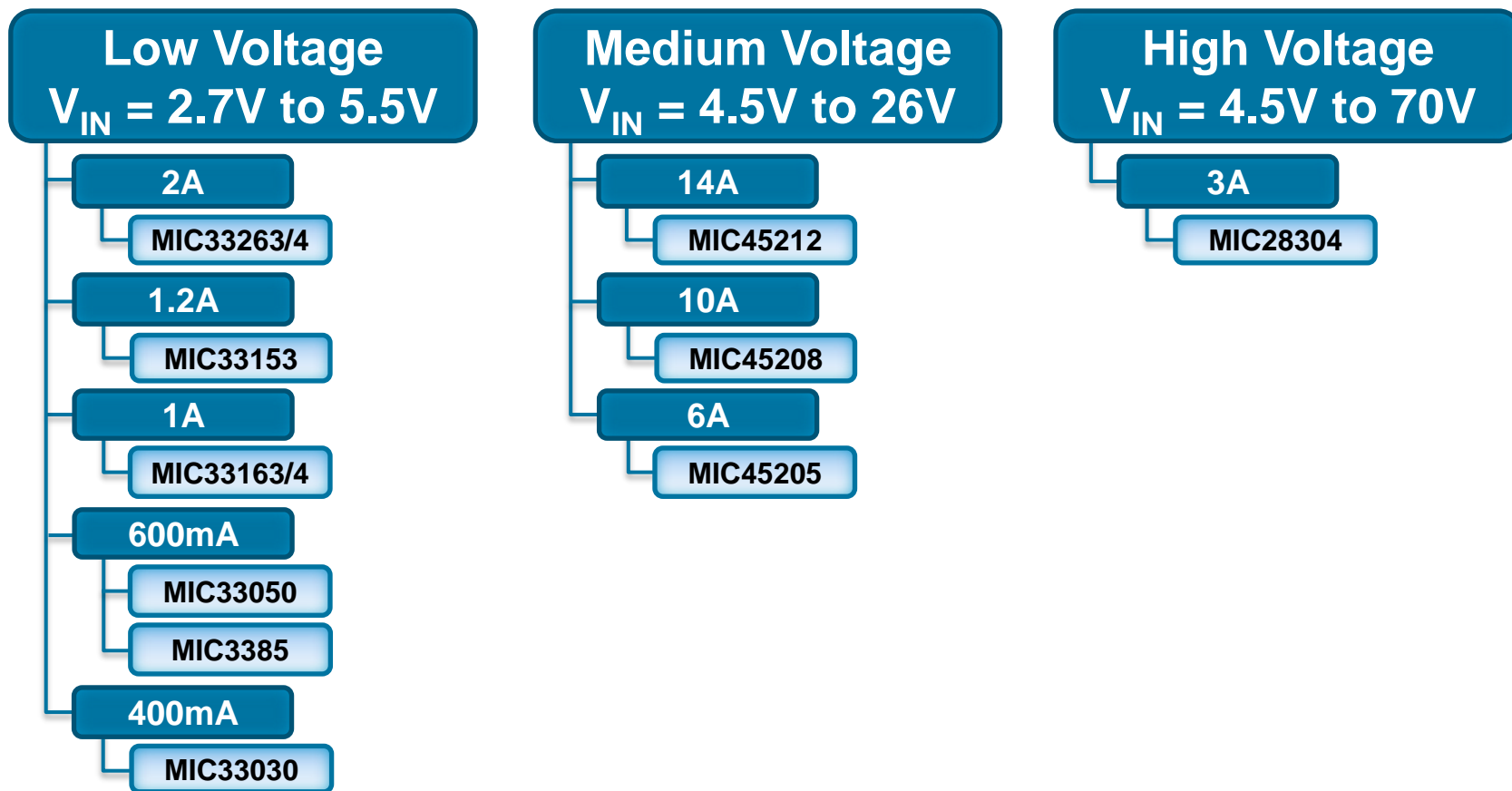


Dual LDOs $I_{OUT1} \neq I_{OUT2}$





Power Modules





Step Down (Buck) External SW

75V

MIC2103/4

MIC2176-1/2/3

40V

MIC2130/1

MIC2174/C

38V

MIC2101/2

32V

MIC2182

MIC2198

MIC2199

28V

MIC2164/-2/-3/C

MIC2165

MIC2166

18V

MIC2124

15V

MIC2159

MIC2168/A

MIC2169/A/B

14V

MIC2183

MIC2184

MIC2193

MIC2194

6V

MIC2111



Step Down (Buck) Multi-Output



15V

2.5A / 2.5A

MIC24420/1

13.2V

2A / 2A

MIC25400

6V

2A / 2A

MIC4782

5.5V

2A / 2A / 2A

MIC23450

MIC23451

2A / 2A

MIC23158/9

MIC4744

MIC4742

800mA/800mA

MIC2238

MIC2230

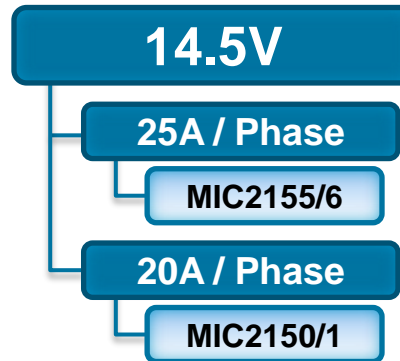
400mA/400mA

MIC23254

MIC23250



Step Down (Buck) Multi-Phase



Step Up (Boost) Internal SW



40V

MIC2171, 2.5A

MIC2172, 1.25A

MIC3172, 1.25A

20V

MIC2601/2, 1.2A

MIC2605/6, 0.5A

16V

MIC2145, 0.9A

MIC2142, 0.1A

15V

MIC2570, 1A

MIC2571, 1A

14V

MIC2141, 0.01A

10V

MIC2253, 3.5A

MIC2288, 1.2A

MIC2290, 0.75A

MIC2295, 1.2A

MIC2296, 1.2A

6.5V

MIC2619, 0.35A

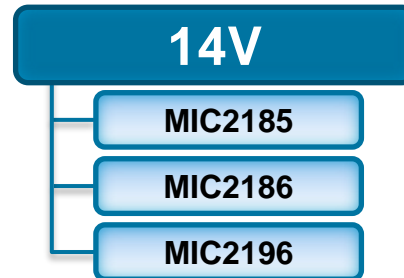
5.5V

MIC2250, 2A

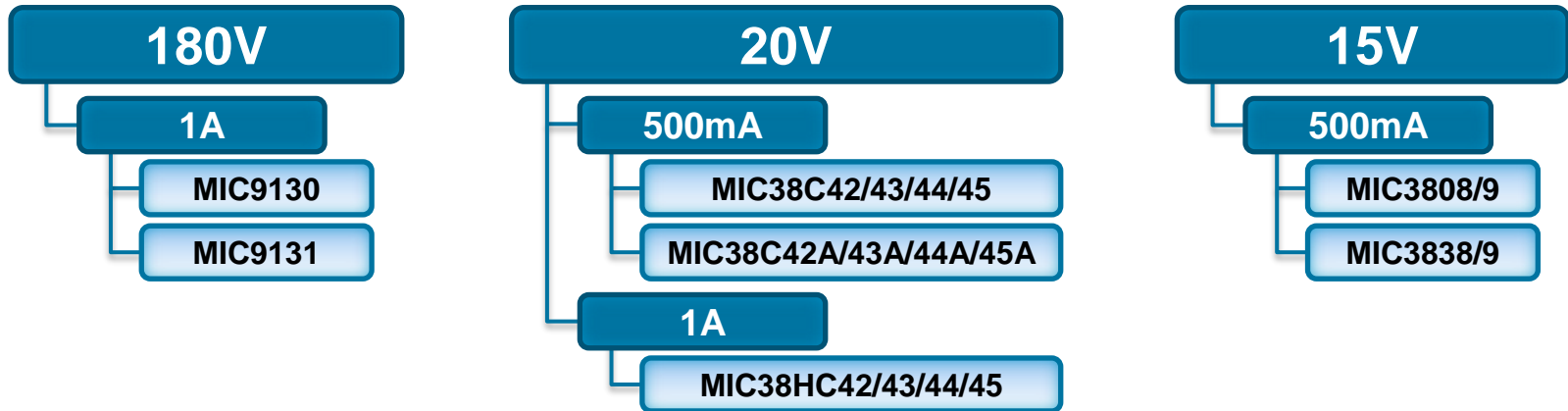
MIC2251, 2A



Step Up (Boost) External SW



Flyback / Fwd / Push-Pull



Digital Controllers



MIC21000



PMICs



5.5V

MIC7400	PMIC featuring five 4MHz buck regulators, one 2MHz boost regulator, I ² C
MIC2225	Digital PMIC, 2MHz DC/DC converter w/LDO and independent enable
MIC23060	4MHz 600mA DC/DC Regulator w/300mA LDO. Sequencing feature.
MIC2800	Digital PMIC, 2MHz DC/DC converter w/2 LDOs.
MIC2807	RF PMIC, 600mA DC/DC w/DAC output to PA. 200mA RF LDO, 30mA PA LDO
MIC2808	RF PMIC, 600mA DC/DC w/DAC output to PA.
MIC2810	Digital PMIC, 2MHz with 2 LDOs. LDO1 has a separate VIN pin
MIC2811	Digital PMIC, 2MHz DC/DC with 3 LDOs
MIC2821	Digital PMIC, 2MHz DC/DC with 3 LDOs
MIC2826	4MHz DC/DC HyperLight Load [®] with 1.8V to DVIN Adj. via I ² C & DVS, 3 LDOs
MIC2827	4MHz DC/DC HyperLight Load [®] with Dynamic Voltage Scaling and 2 LDOs.
MIC2829	PMIC for 3G/4G wireless data and portable applications

1.6V

MIC23099	Single AA/AAA Cell Step-Up/Step-Down Regulators with Battery Monitoring
----------	---



MOSFET Drivers



**Full-Bridge, Half-Bridge,
and Three-Phase**

High or Low-Side

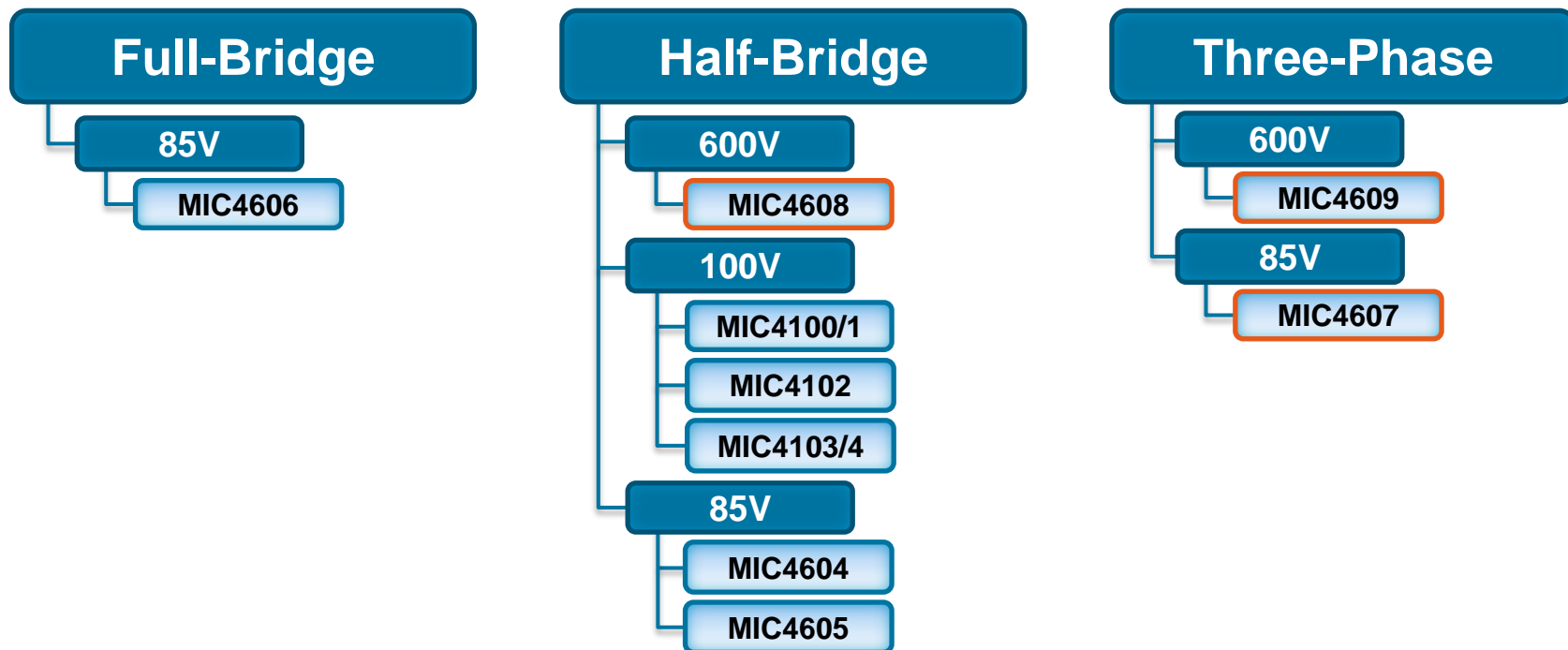
Low-Side





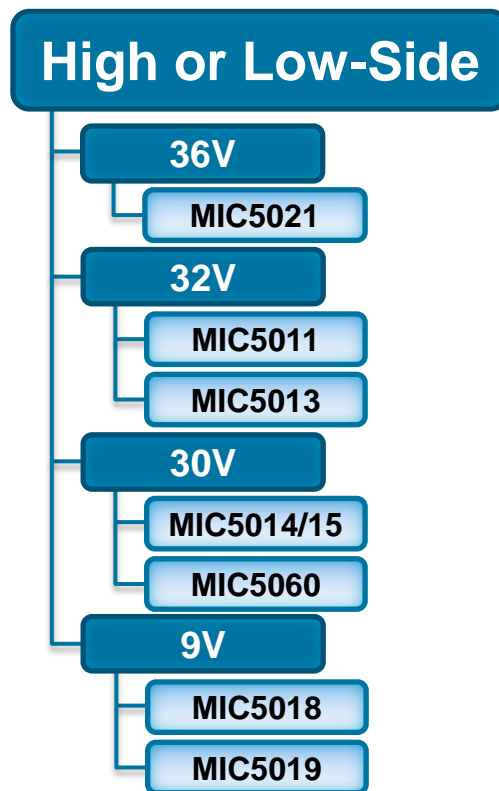
MOSFET Drivers

Full-Bridge, Half-Bridge, Three-Phase



MOSFET Drivers

High or Low Side



MOSFET Drivers

Low-Side



Single Output

50V

MIC5020

20V

6A

MIC4120/9

13V

6A

MIC44F18/19/20

18V

12A

MIC4451/2

9A

MIC4421/2

MIC4421A/2A

6A

MIC4420/9

1.5A

MIC4414/5

1.2A

MIC4416/7

Dual Output

20V

3A

MIC4123/4/5

MAQ4123/4/5

1.5A

MIC4126/7/8

18V

4A

MIC4223/4/5

3A

MIC4423/4/5

1.5A

MIC4426/7/8

Quad Output

18V

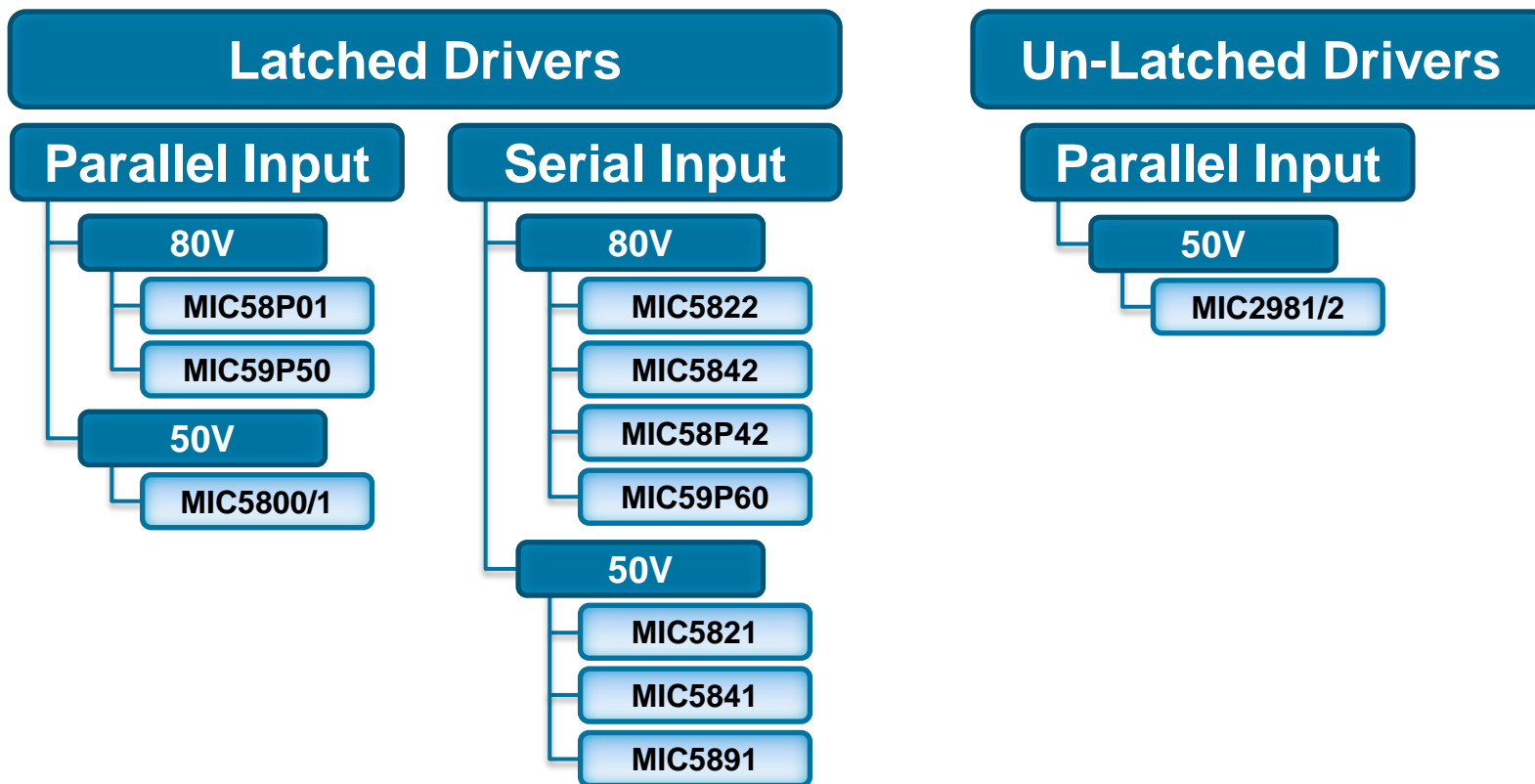
1.2A

MIC4467/8/9





Driver Arrays



Power Switching



**Single & Dual High-Side
Power Switches**

USB Power Switches

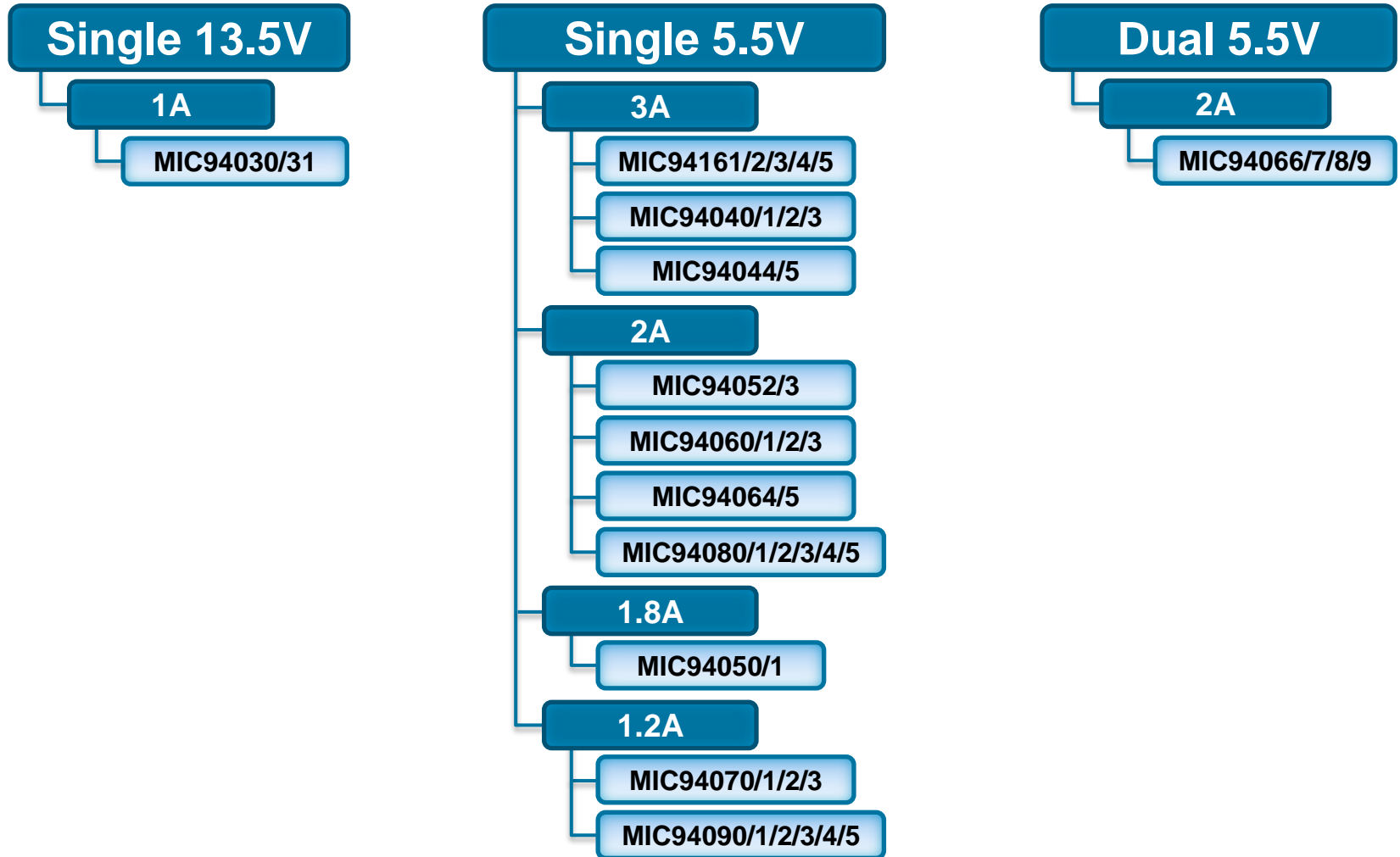
**USB Power Switches
w/ACPI**

USB Transceivers

PCMCIA / CableCARD



Single & Dual High-Side Power Switches





USB Power Switches

Single 5.5V

Adj. to 6A

MIC2044/45

Adj. to 3A

MIC2545A/49A

MIC2042/43

Adj. to 2.5A

MIC2039

Adj. to 2A

MIC2007/17
MIC2008/18
MIC2009/19

Adj. to 1.5A

MIC2544/48

MIC2544A/48A

MIC2040/41

Adj. to 0.9A

MIC2009A

0.5A, 0.8A, 1A, 1.2A

MIC2033

0.5A, 0.8A, 1.2A

MIC2003/13
MIC2004/14
MIC2005/15
MIC2006/16

0.5A, 0.9A, Adj. to 1.1A

MIC2095/7/8/9

500mA

MIC2025/75

100mA

MIC2091

50mA

MIC2090

Single 13.5V

400mA

MIC2514

Single 7.5V

2A

MIC2505/-1/-2

Quad 5.5V

500mA

MIC2027/77

100mA

MIC2537

Dual 7.5V

1A

MIC2506

Dual 5.5V

Adj. to 1.5A

MIC2546/47

500mA

MIC2026/76

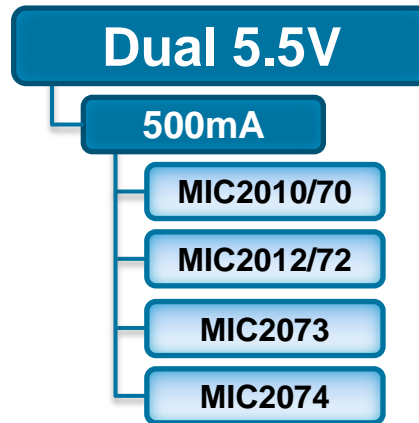
MIC2026A/76A

100mA

MIC2536



USB Power Switches w/ACPI



USB Transceivers



USB Transceivers

MIC2550

MIC2550A

MIC2551

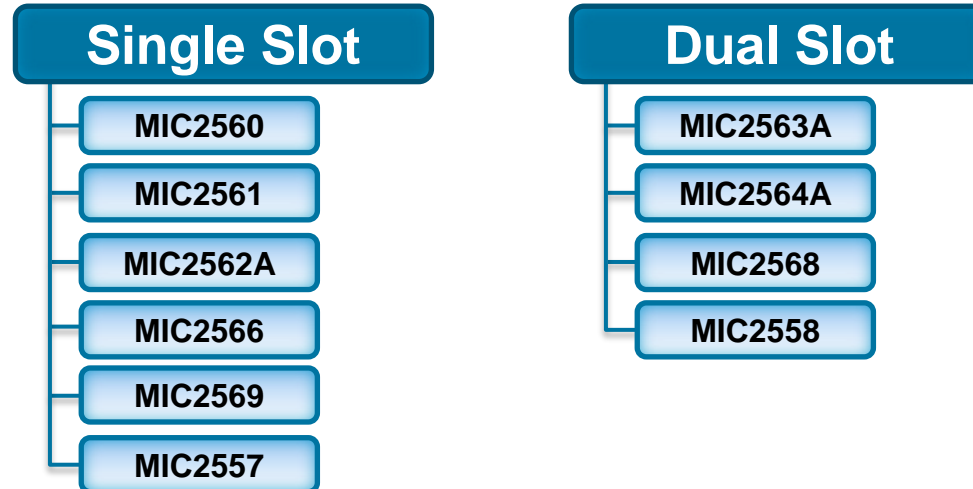
MIC2551A

MIC2551A-2.5

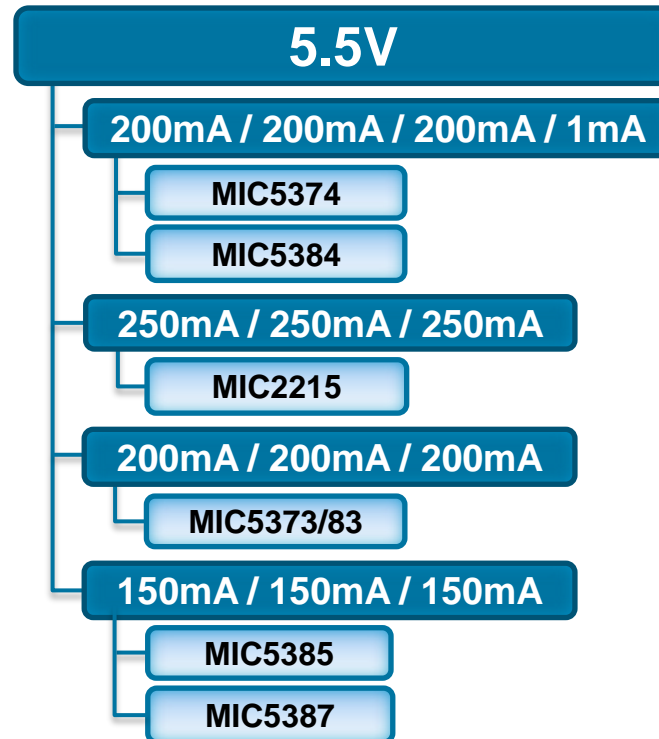
MIC2555



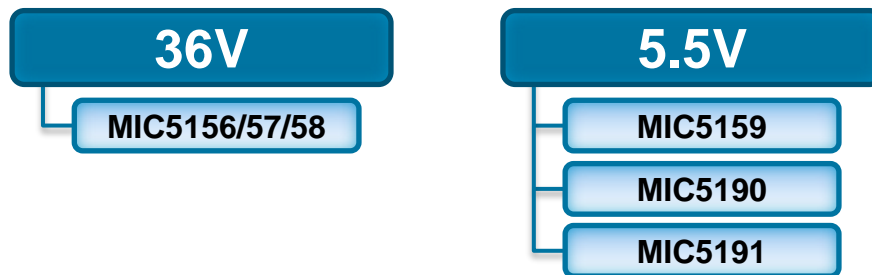
PCMCIA / CableCARD



Multi-Output LDOs

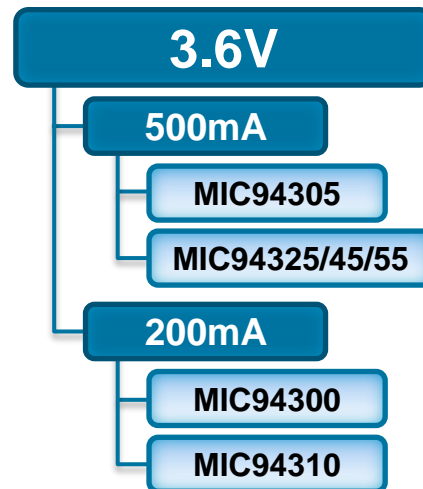


LDO Controllers



Linear Power Filters

Ripple Blocker™



Voltage Supervisors



**Single & Dual Voltage
Supervisors**

Push Button Reset ICs





Voltage Supervisors

Single and Dual Voltage

Single Voltage

Active Low Push-Pull

MIC705/6
MIC809
MIC809-5
MIC811
MIC1810
MIC1815
MIC2776L
MIC2779L
MIC2785
MIC8114
MIC8115
MAX823

Active High Push-Pull

MIC810
MIC812
MIC2776H
MIC2779H

Active High/Low Push-Pull

MIC707/8
MIC1232
MIC1832
MIC2775
MIC826
MAX824
MAX825

Active Low Open-Drain & Active High Push-Pull

MIC2786
MIC2787

Active Low Open-Drain

MIC803
MIC2755
MIC2776N
MIC2778
MIC6315

Dual Voltage

Active Low Push-Pull

MIC2774L

Active High Push-Pull

MIC2774H

Active High/Low Push-Pull

MIC2777

Active Low Open-Drain

MIC2772
MIC2774N



Voltage Supervisors

Push Button Reset ICs



**Active Low
Open-Drain**

MIC2782

**Active Low Open-Drain
& Active High Push-Pull**

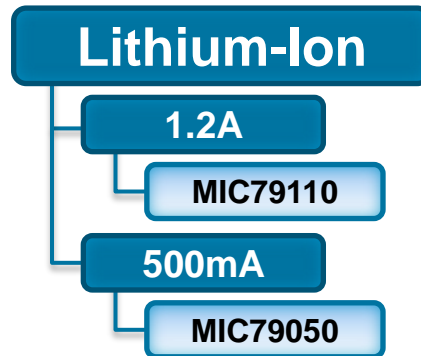
MIC2786/7

MIC2788/9

MIC2790/1/3

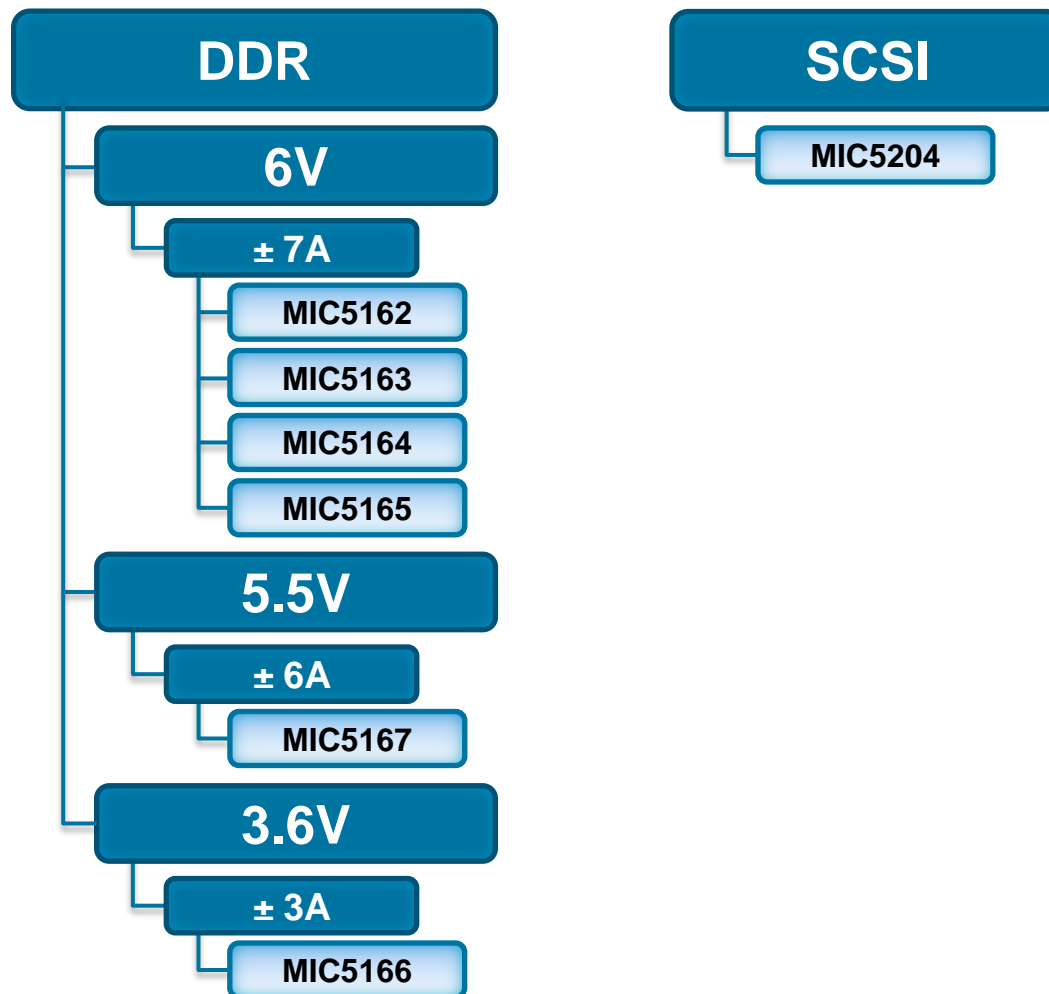


Battery Chargers

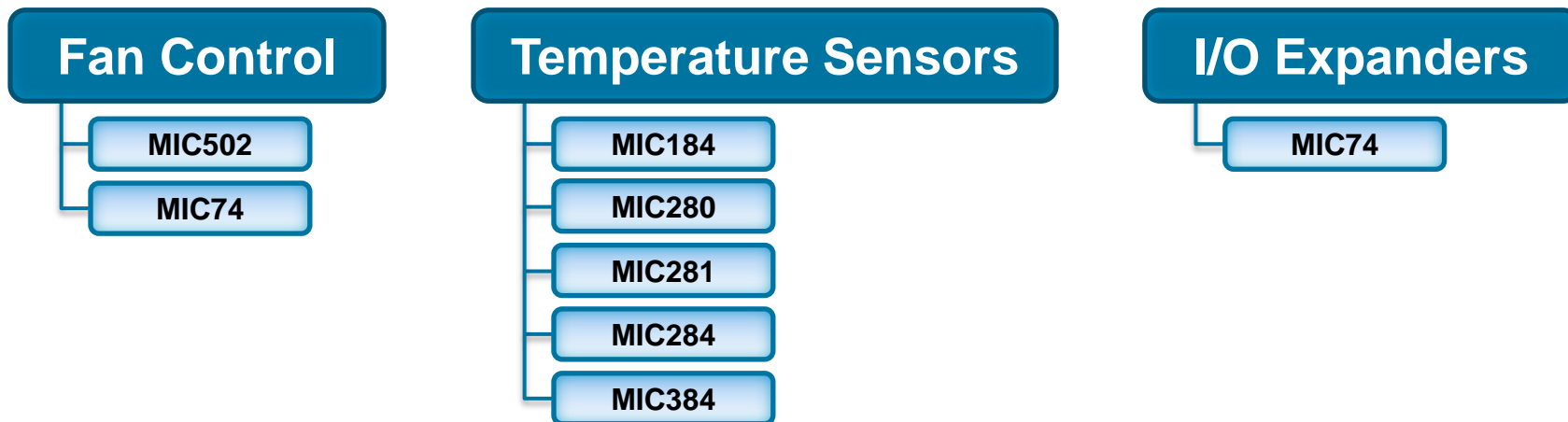




DDR / SCSI Terminators



System Management



Comparators



General Purpose

36V

MIC6270

10V

MIC7211/21

w/Internal Reference

5.5V

MIC833

MIC834

MIC841/2

MIC845





Op Amps

Single

32V

MIC6211, 2.5MHz

18V

MIC910, 135MHz

MIC911, 105MHz

MIC912, 200MHz

MIC913, 350MHz

MIC914, 160MHz

MIC918, 51MHz

MIC919, 27MHz

MIC920, 80MHz

MIC921, 45MHz

MIC922, 230MHz

MIC923, 410MHz

12V

LMC7101, 500kHz

11V

MIC7111, 25kHz

10V

MIC7300, 500kHz

MIC7201, 400kHz

5.25V

MIC860, 4MHz

MIC861, 400kHz

Dual

18V

MIC915, 135MHz

15V

MIC7122, 750kHz

5.5V

MIC864, 350kHz

5.25V

MIC862, 3MHz

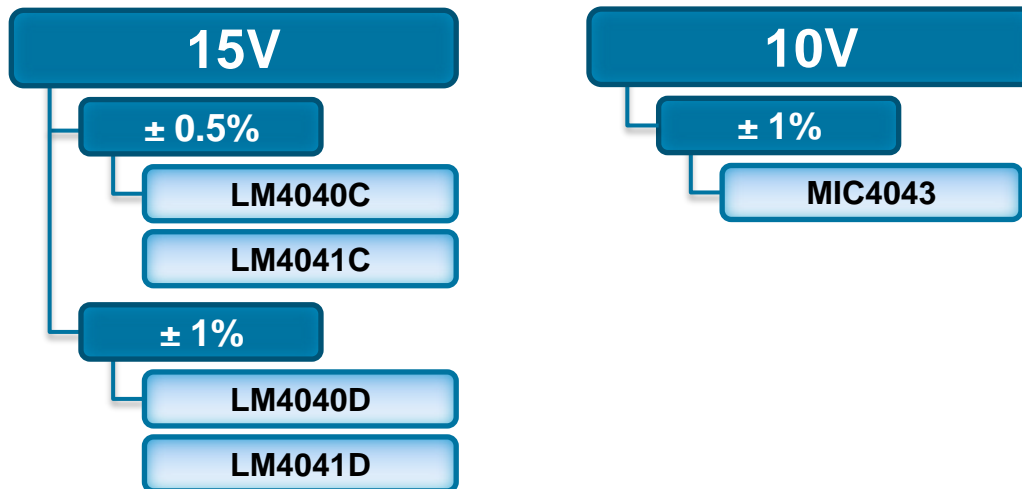
MIC863, 450kHz

Triple

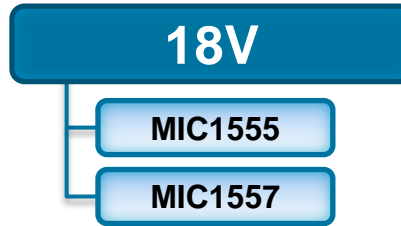
18V

MIC916, 135MHz

References

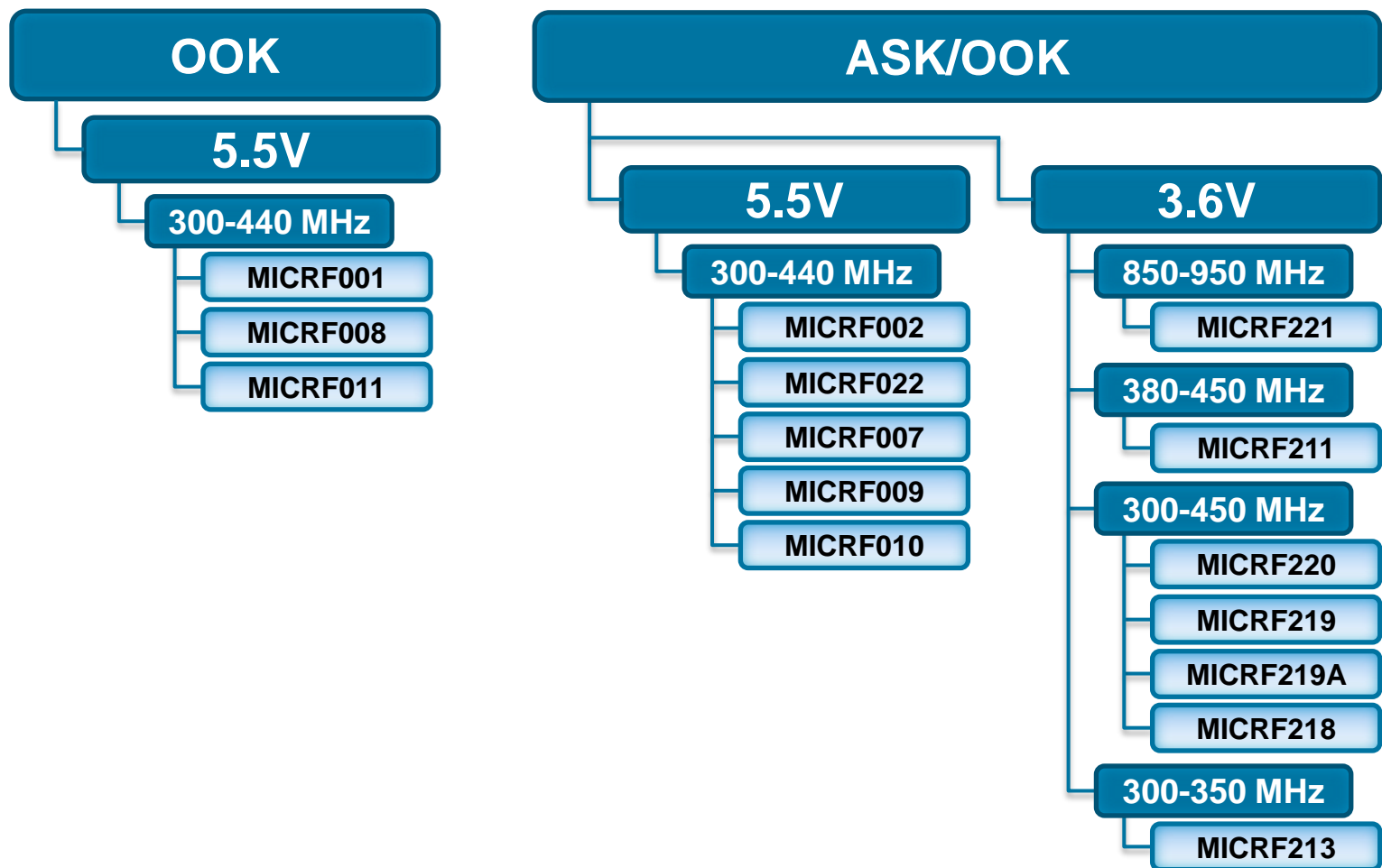


Timers

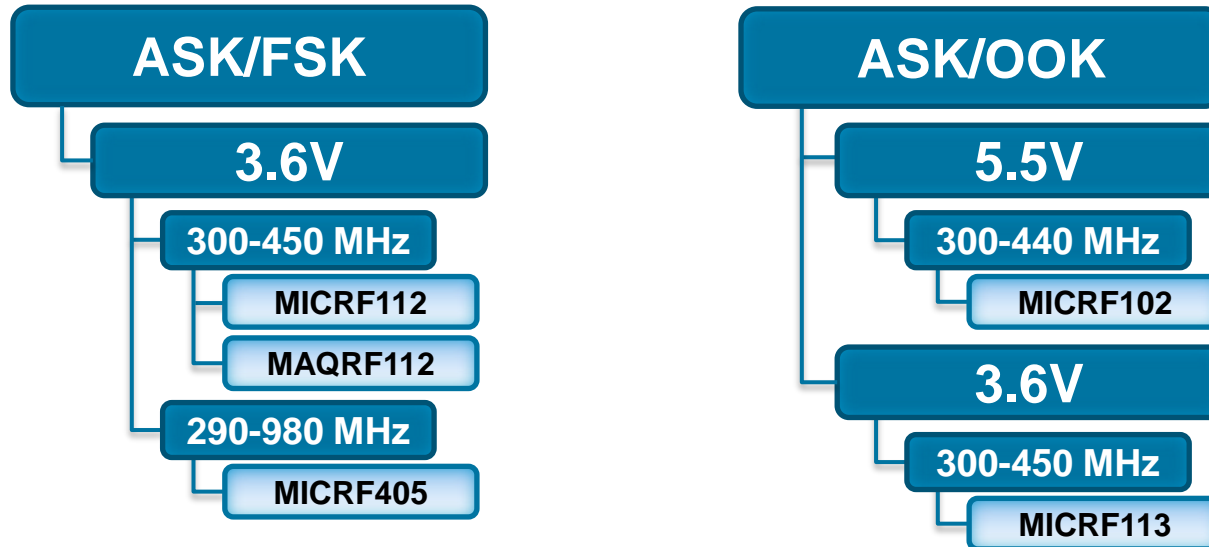




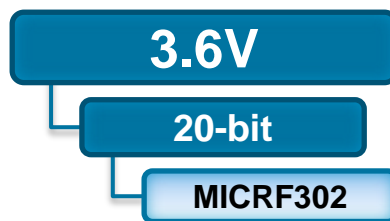
Receivers



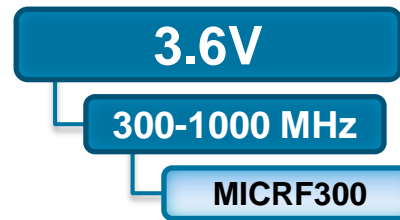
Transmitters



Encoders



Low Noise Amplifiers



Lighting & Displays



EL Drivers

LED Backlight

HB LED Drivers

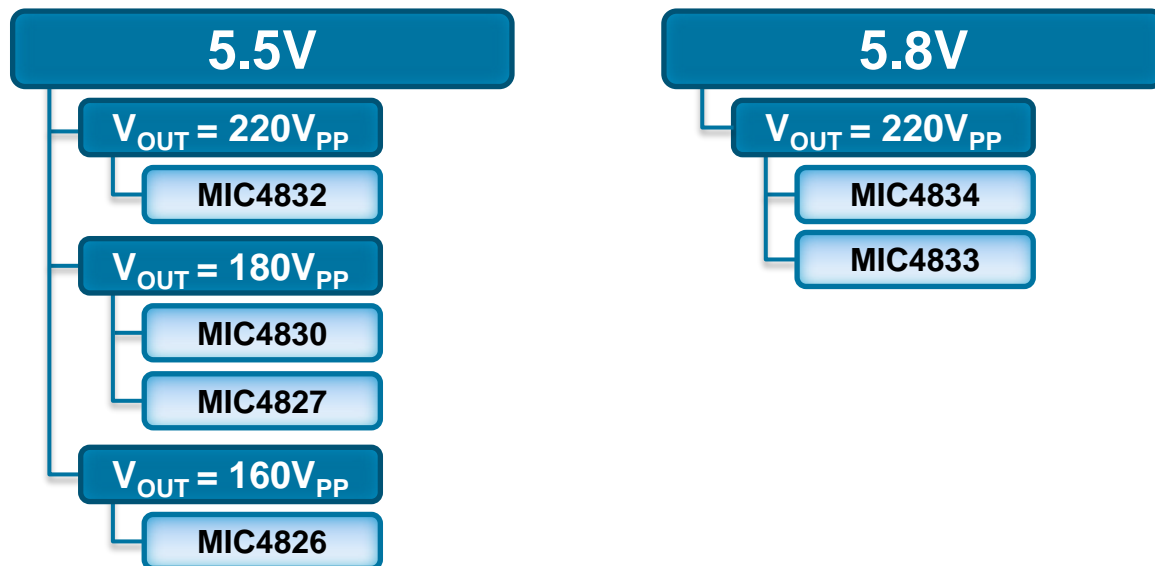
Linear LED Drivers

**Display Drivers &
Flash Drivers**





EL Drivers





LED Backlight

40V

$I_{LIM} = 2.4A$

MIC3263

20V

$I_{LIM} = 3.5A$

MIC3223

15V

$I_{LIM} = 750mA$

MIC2282

10V

$I_{LIM} = 4.75A$

MIC2298

MIC2299

$I_{LIM} = 1.7A$

MIC2297

$I_{LIM} = 1.2A$

MIC2291

$I_{LIM} = 750mA$

MIC2287

MIC2287C

MIC2289

MIC2289C

MIC2292/3

MIC2292C/3C

7V

$I_{LIM} = 750mA$

MIC3289

MIC3291

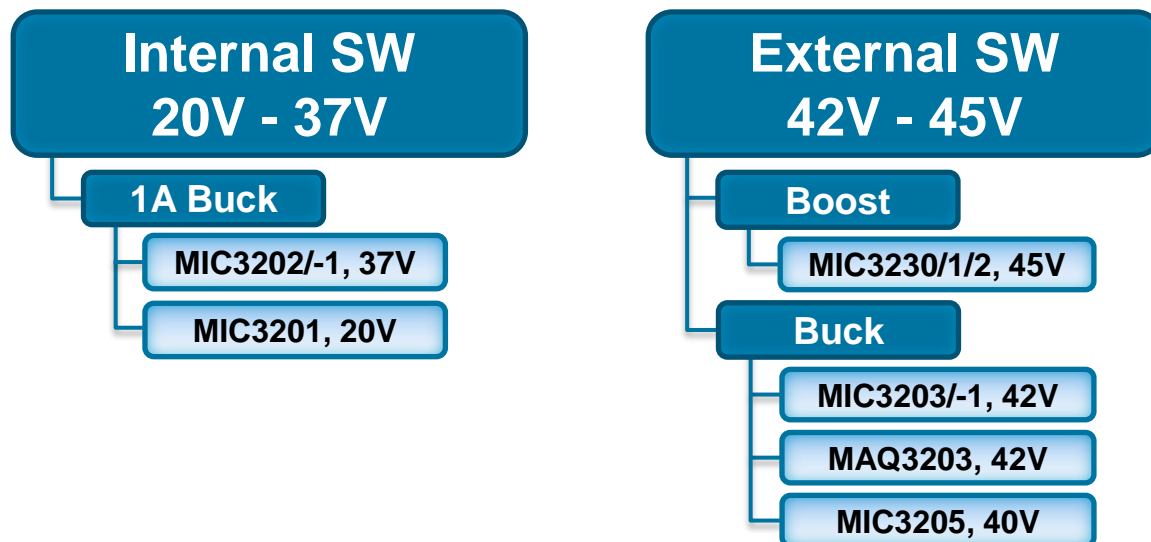
$I_{LIM} = 350mA$

MIC3287



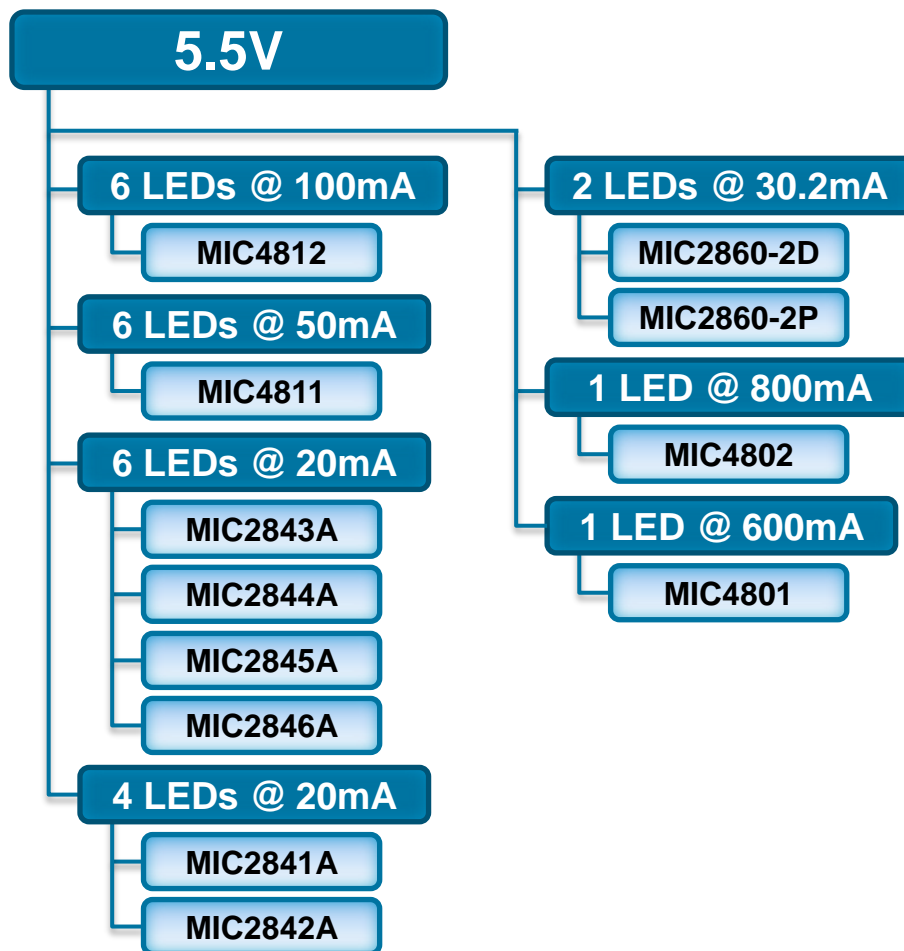


HB LED Drivers





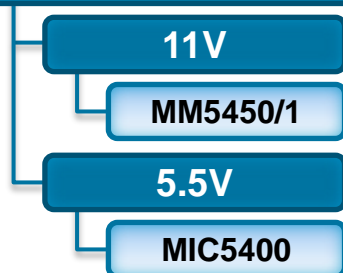
Linear LED Drivers



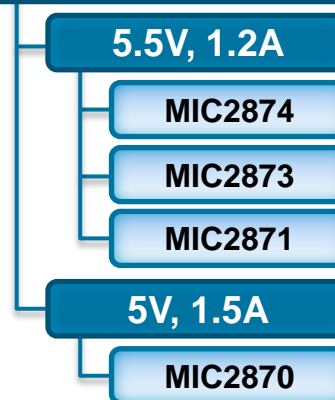


Display Drivers & Flash Drivers

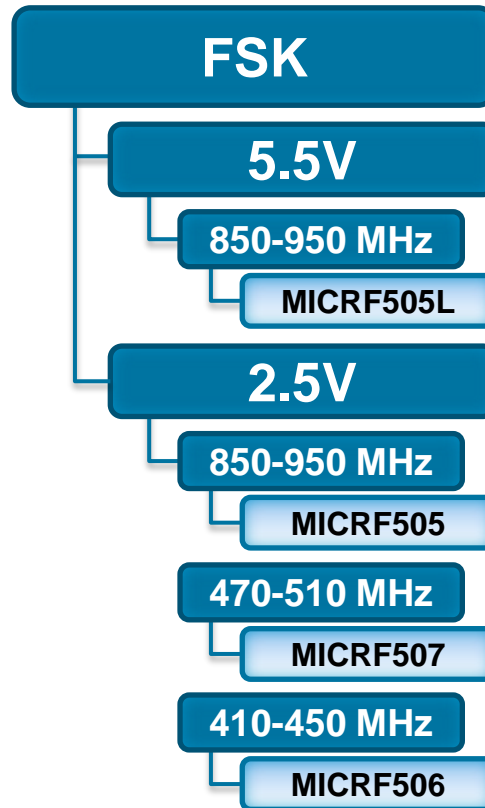
Display Drivers



Flash Drivers



Transceivers



Hot Swap / Power Controllers



Low Voltage (<16V)

4 Outputs

MIC2580A

2 Outputs

MIC2584/5

1 Output

MIC2085/6

MIC2582/3/3R

MIC2310

High Voltage (>16V)

1 Output

MIC2587

MIC2588/94

MIC2589/95

Compact PCI/PCI-X/PCI Express

10 Outputs

MIC2590B

MIC2593

6 Outputs

MIC2341

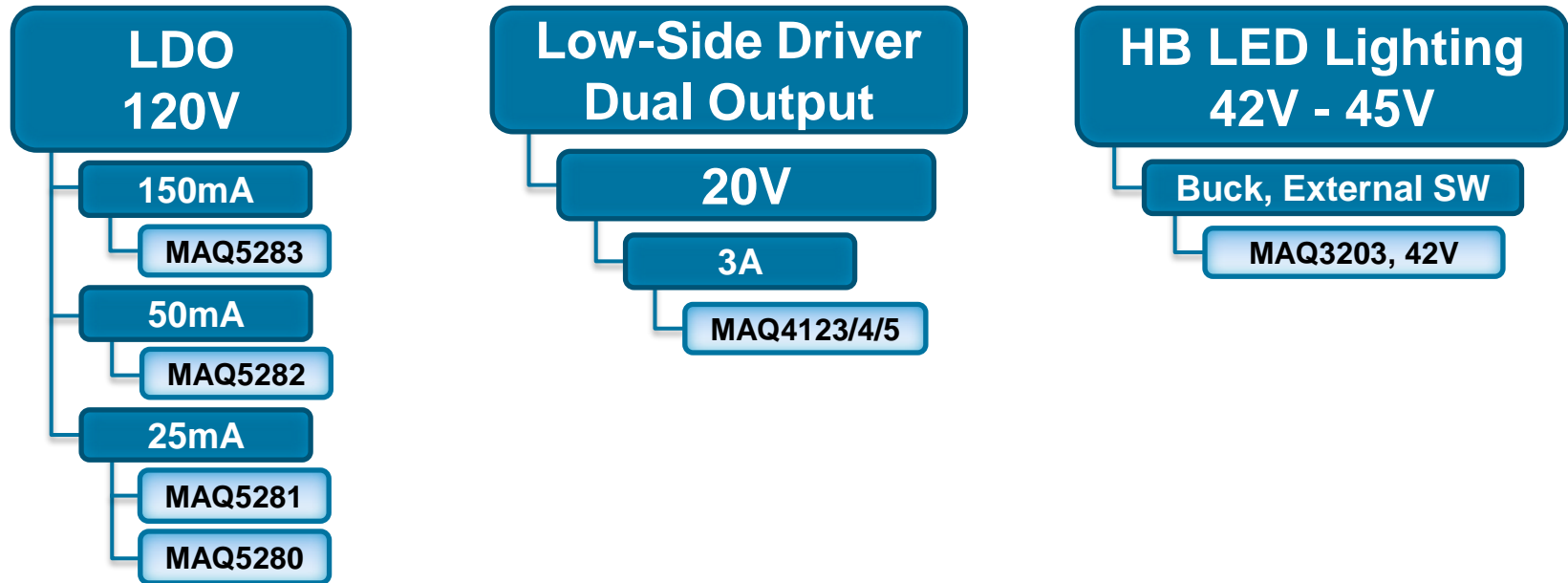
MIC2342

MIC2591B

MIC2592B



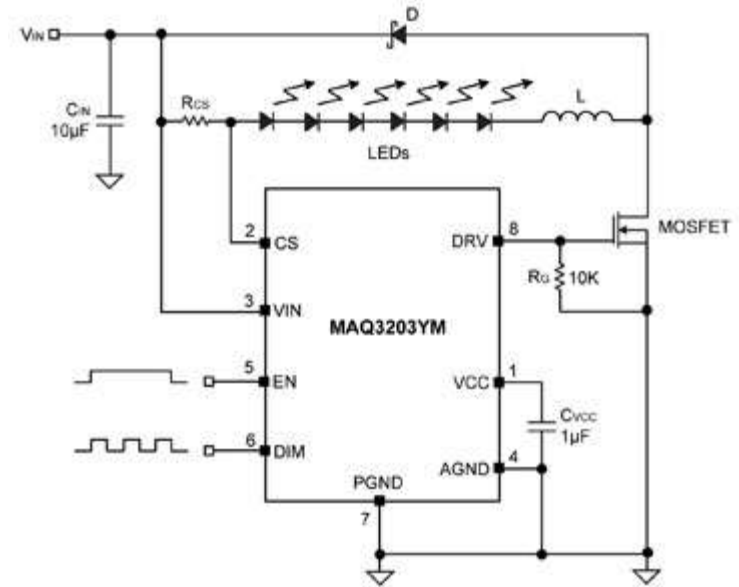
AEC-Q100 Power Management



MAQ3203

High Brightness LED Driver with High-Side Current Sense

- ◆ AEC-Q100 qualified
- ◆ 4.5V to 42V input voltage range
- ◆ High efficiency (>90%)
- ◆ $\pm 5\%$ LED current accuracy
- ◆ Dither enabled for low EMI
- ◆ High-side current sense
- ◆ Dedicated dimming control input
- ◆ Hysteretic control (no compensation)
- ◆ Up to 1.5MHz switching frequency
- ◆ Adjustable constant LED current
- ◆ Over-temperature protection
- ◆ -40°C to $+125^{\circ}\text{C}$ junction temperature range

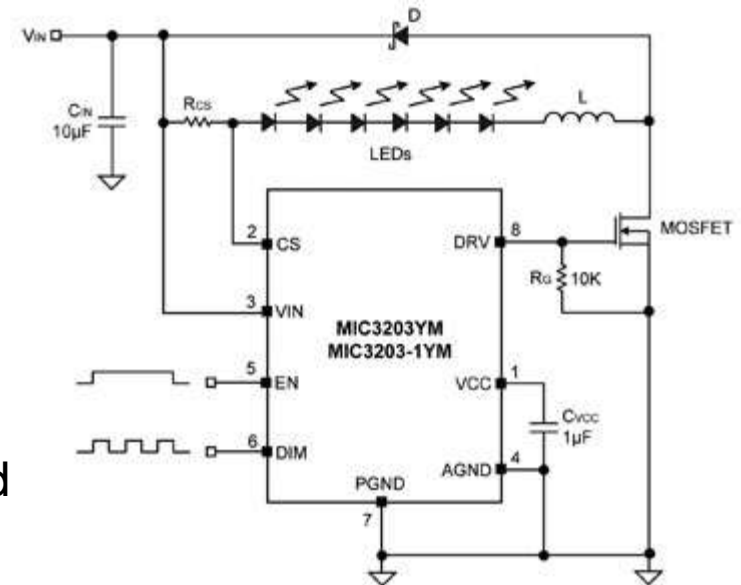




MIC3203 / MIC3203-1

High-Brightness LED Driver Controller with High-Side Current Sense

- ◆ 4.5V to 42V input voltage range
- ◆ High efficiency (>90%)
- ◆ $\pm 5\%$ LED current accuracy
- ◆ MIC3203: Dither enabled for low EMI
- ◆ MIC3203-1: Dither disabled
- ◆ High-side current sense
- ◆ Dedicated dimming control input
- ◆ Hysteretic control (no compensation required)
- ◆ Up to 1.5MHz switching frequency
- ◆ Adjustable constant LED current
- ◆ Over-temperature protection
- ◆ -40°C to $+125^{\circ}\text{C}$ junction temperature range

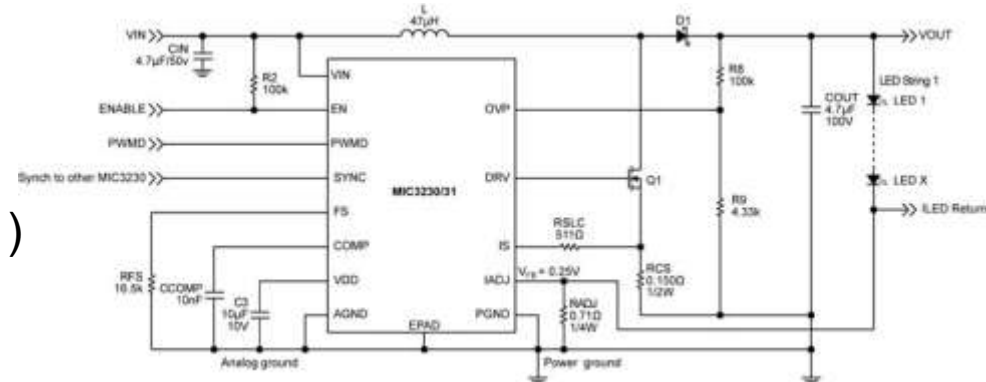




MIC3230/1/2

Constant Current Boost Controller for Driving High Power LEDs

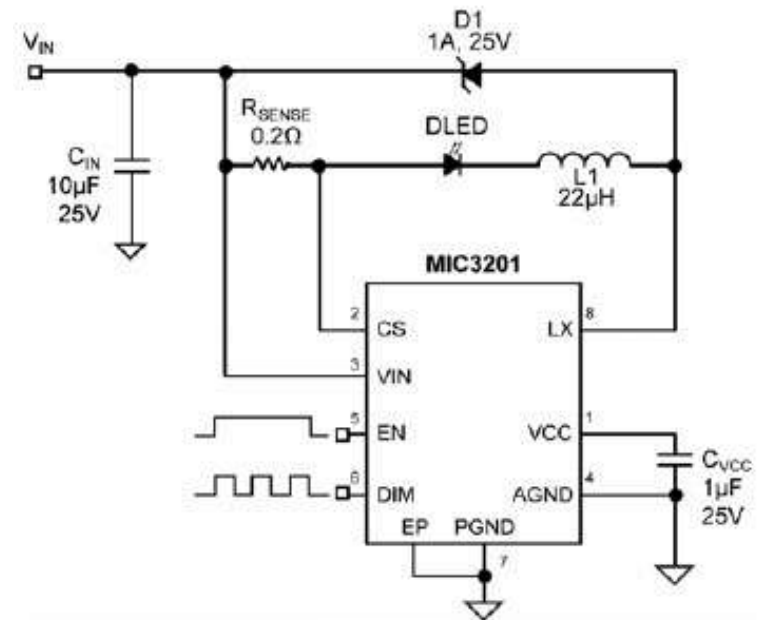
- ◆ 6V to 45V input supply range
- ◆ Capable of driving up to 70W
- ◆ Ultra-low EMI via dithering (MIC3231)
- ◆ Programmable LED drive current
- ◆ Feedback voltage = 250mV \pm 3%
- ◆ Programmable switching frequency (MIC3230/1) or 400kHz fixed frequency operation (MIC3232)
- ◆ PWM dimming and separate enable shutdown
- ◆ Frequency synchronization with other MIC3230s
- ◆ Protection features:
 - Over voltage protection (OVP)
 - Over-temperature protection
 - Under voltage lockout (UVLO)
- ◆ -40°C to +125°C junction temperature range



MIC3201

High Brightness LED Driver with High-Side Current Sense

- ◆ 6.0V to 20V input voltage range
- ◆ High efficiency (>90%)
- ◆ $\pm 5\%$ LED current accuracy
- ◆ High-side current sense
- ◆ Dedicated dimming control input
- ◆ Hysteretic control (no compensation!)
- ◆ 1A internal power switch
- ◆ Up to 1MHz switching frequency
- ◆ Adjustable constant LED current
- ◆ 5V on board regulator
- ◆ Over-temperature protection
- ◆ -40°C to $+125^{\circ}\text{C}$ Junction temperature range
- ◆ Available in an 8-Pin ePad SOIC package

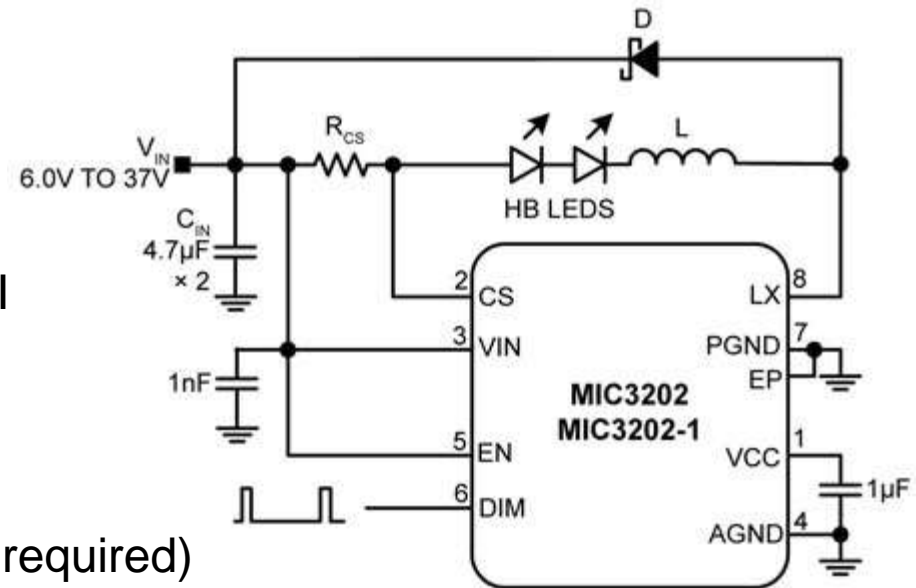




MIC3202/-1

High-Brightness LED Driver w/Integrated MOSFET and High-Side Current Sense

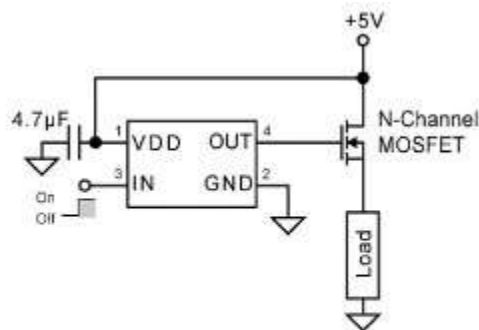
- ◆ 6V to 37V input voltage range
- ◆ High efficiency (>90%)
- ◆ $\pm 5\%$ LED current accuracy
- ◆ MIC3202: Dither enabled for low EMI
- ◆ MIC3202-1: Dither disabled
- ◆ High-side current sense (up to 1A)
- ◆ Dedicated dimming control input
- ◆ Hysteretic control (no compensation required)
- ◆ Up to 1MHz switching frequency
- ◆ Adjustable constant LED current
- ◆ Over-temperature protection
- ◆ -40°C to $+125^{\circ}\text{C}$ junction temperature range



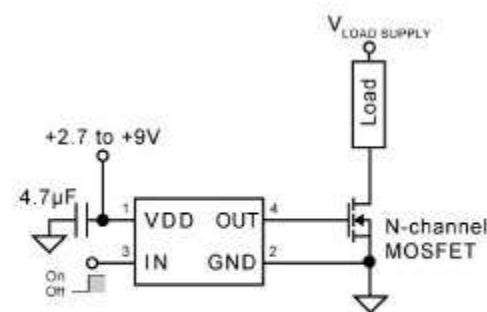
MIC5019

Ultra Small High-Side N-Channel MOSFET Driver with Integrated Charge Pump

- ◆ 4-pin 1.2mm x 1.2mm Thin QFN Package
- ◆ +2.7V to +9V supply voltage range
- ◆ 16V gate drive at $V_{DD} = 9V$
- ◆ 8V gate drive at $V_{DD} = 2.7V$
- ◆ Operates in low and high side configurations
- ◆ 150 μ A (typical) supply current at $V_{DD} = 5V$
- ◆ <1 μ A shutdown supply current
- ◆ -40°C to $+125^{\circ}\text{C}$ Junction Temperature Range



Low-Voltage High-Side Power Switch



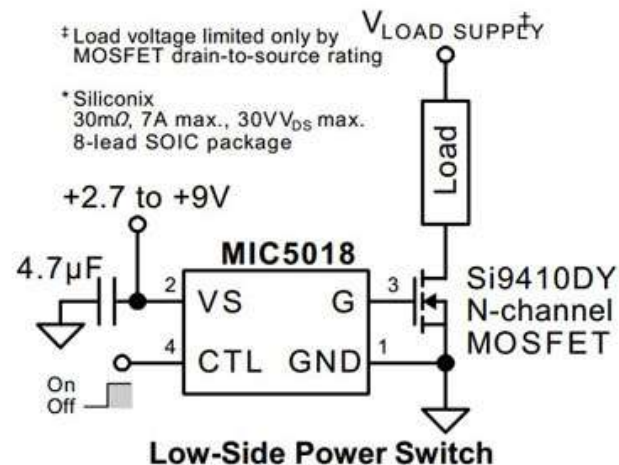
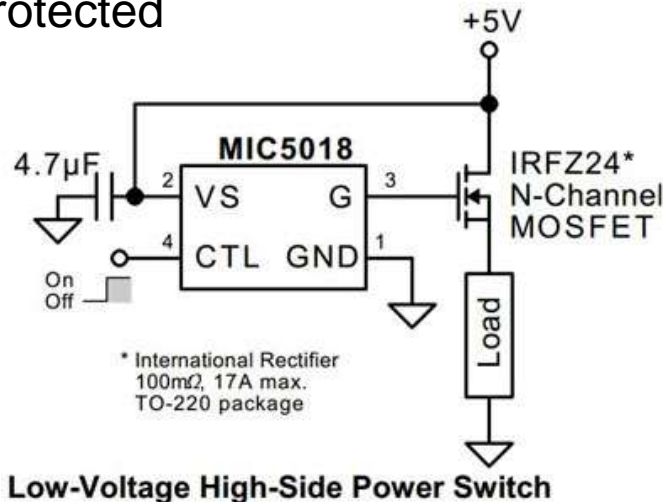
Low-Side Power Switch



MIC5018

IttyBitty® High-Side MOSFET Driver

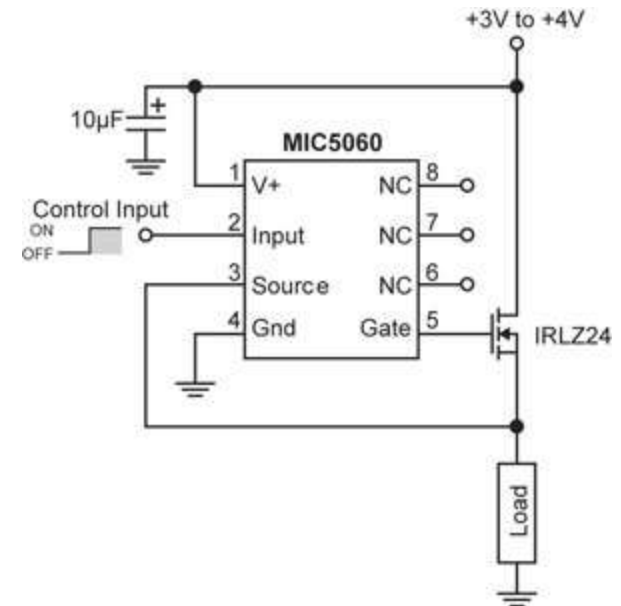
- ◆ +2.7V to +9V operation
- ◆ 150µA typical supply current at 5V supply
- ◆ $\leq 1\mu\text{A}$ typical standby (off) current
- ◆ Charge pump for high-side low-voltage applications
- ◆ Internal zener diode gate-to-ground MOSFET protection
- ◆ Operates in low- and high-side configurations
- ◆ TTL compatible input
- ◆ ESD protected



MIC5060

Small High-Side MOSFET Driver

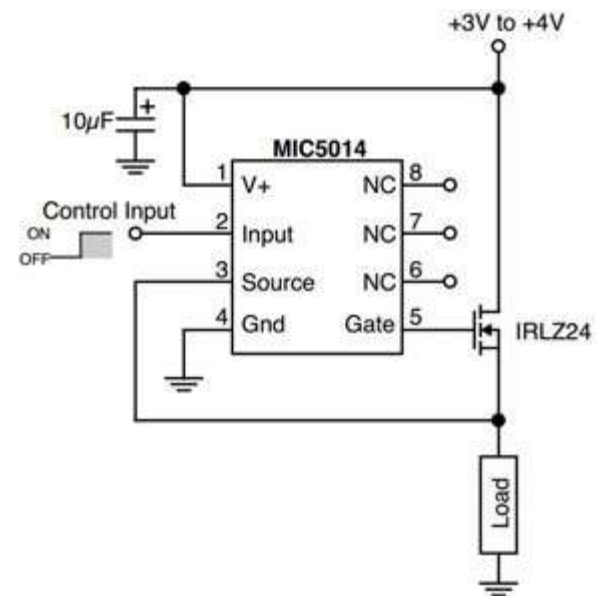
- ◆ 2.75V to 30V operation
- ◆ 100 μ A maximum supply current (5V supply)
- ◆ 15 μ A typical off-state current
- ◆ Internal charge pump
- ◆ TTL-compatible input
- ◆ Withstands 60V transient (load dump)
- ◆ Reverse battery protected to -20V
- ◆ Inductive spike protected to -20V
- ◆ Overvoltage shutdown at 35V
- ◆ Internal 15V gate protection
- ◆ Minimum external parts
- ◆ Operates in high-side or low-side configurations
- ◆ 1 μ A control input pull-off
- ◆ Available in 8-pin 3mm x 3mm MLF® package



MIC5014/15

Low-Cost High- or Low-Side MOSFET Driver

- ◆ +2.75V to +30V operation
- ◆ 100μA maximum supply current (5V supply)
- ◆ 15μA typical off-state current
- ◆ Internal charge pump
- ◆ TTL compatible input
- ◆ Withstands 60V transient (load dump)
- ◆ Reverse battery protected to –20V
- ◆ Inductive spike protected to –20V
- ◆ Overvoltage shutdown at 35V
- ◆ Internal 15V gate protection
- ◆ Minimum external parts
- ◆ Operates in high-side or low-side configurations
- ◆ 1μA control input pull-off
- ◆ MIC5015: Inverting
- ◆ MIC5014: Non-inverting versions

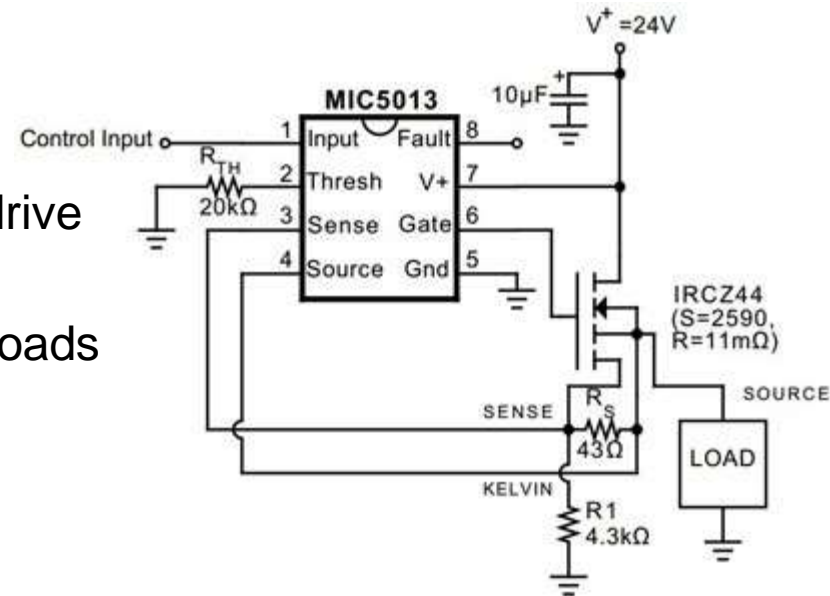




MIC5013

Protected High- or Low-Side MOSFET Driver

- ◆ +7.0V to +32V operation
- ◆ Less than 1 μ A current in the "off" state
- ◆ Internal charge pump to drive the gate of an N-channel power FET above supply
- ◆ Available in small outline SOIC packages
- ◆ Internal zener clamp for gate protection
- ◆ 60 μ s typical turn-on time to 50% gate overdrive
- ◆ Programmable over-current sensing
- ◆ Dynamic current threshold for high in-rush loads
- ◆ Fault output pin indicates current faults
- ◆ Implements high- or low-side switches



MIC5011

Minimum Parts High- or Low-Side MOSFET Driver

- ◆ +4.75V to +32V operation
- ◆ Less than 1 μ A current in the "off" state
- ◆ Internal charge pump to drive the gate of an N-channel power FET above supply
- ◆ Available in small outline SOIC packages
- ◆ Internal zener clamp for gate protection
- ◆ Minimum external parts count
- ◆ Can be used to boost drive to low-side power FETs operating on logic supplies
- ◆ 25 μ s typical turn-on time with optional external capacitors
- ◆ Implements high- or low-side drivers

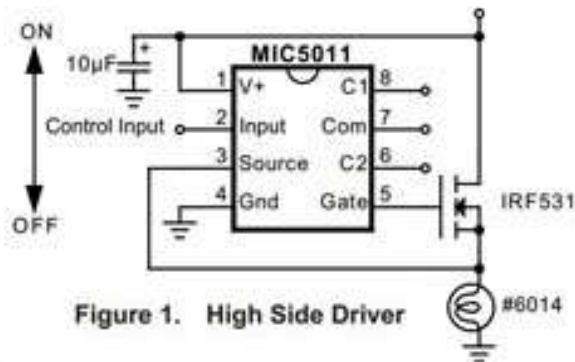


Figure 1. High Side Driver

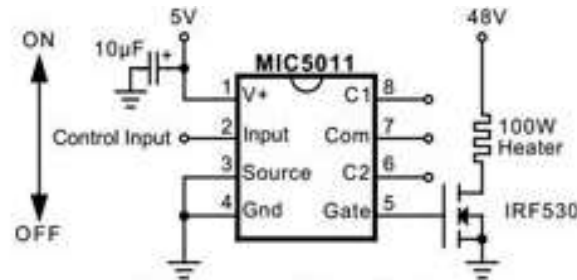
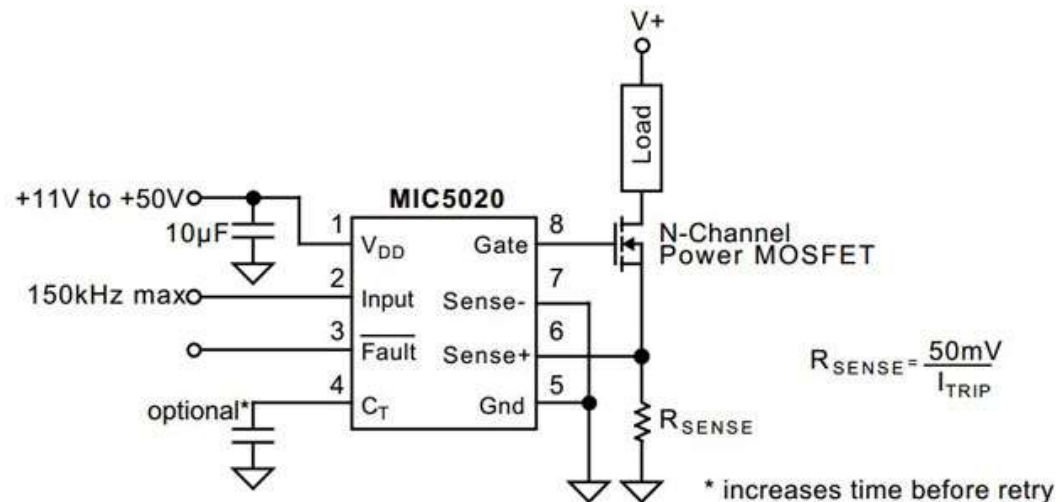


Figure 2. Low Side Driver

MIC5020

Current-Sensing Low-Side MOSFET Driver

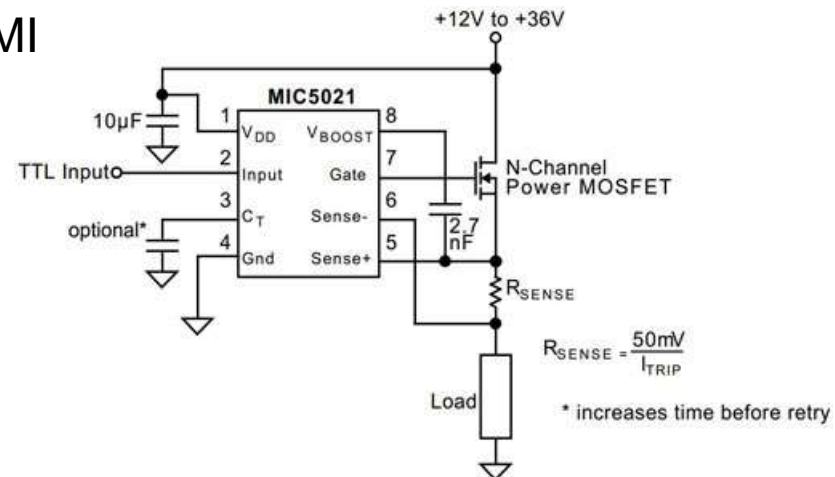
- ◆ 11V to 50V operation
- ◆ 175ns rise/fall time driving 2000pF
- ◆ TTL compatible input with internal pull-down resistor
- ◆ Overcurrent limit
- ◆ Fault output indication
- ◆ Gate to source protection
- ◆ Compatible with current sensing MOSFETs



MIC5021

High-Speed High-Side MOSFET Driver

- ◆ 12V to 36V operation
- ◆ 550ns rise/fall time driving 2000pF
- ◆ TTL compatible input with internal pull-down resistor
- ◆ Overcurrent limit
- ◆ Gate to source protection
- ◆ Internal charge pump
- ◆ 100kHz operation guaranteed over full temperature and operating voltage range
- ◆ Compatible with current sensing MOSFETs
- ◆ Current source drive reduces EMI

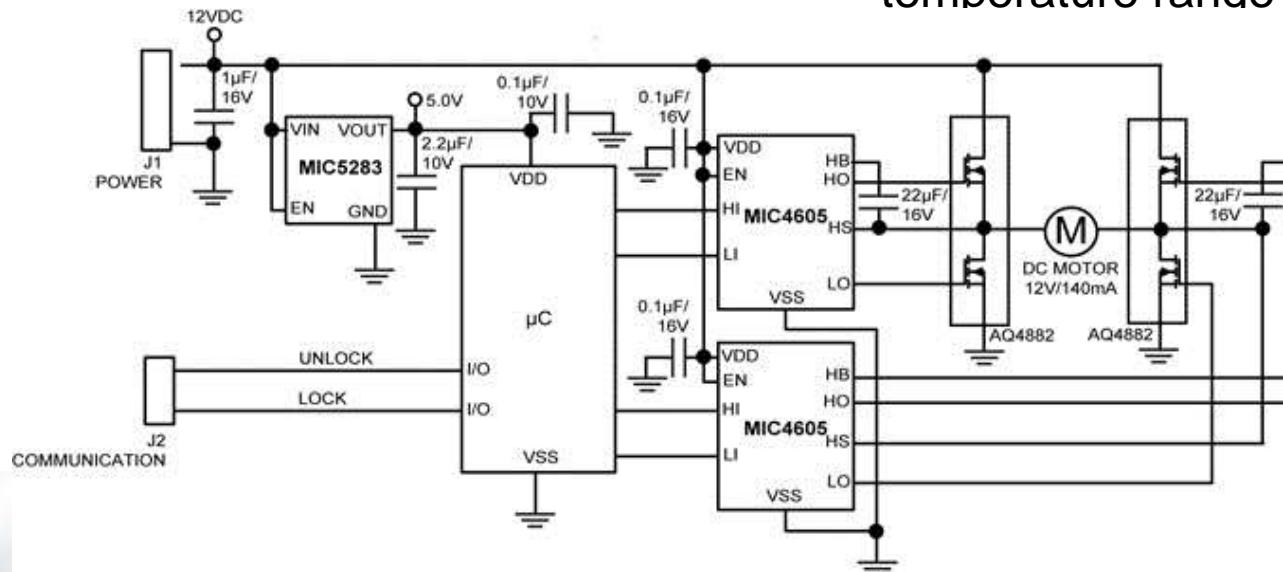




MIC4605

85V Half-Bridge MOSFET Drivers with Adaptive Dead Time and Shoot-Through Protection

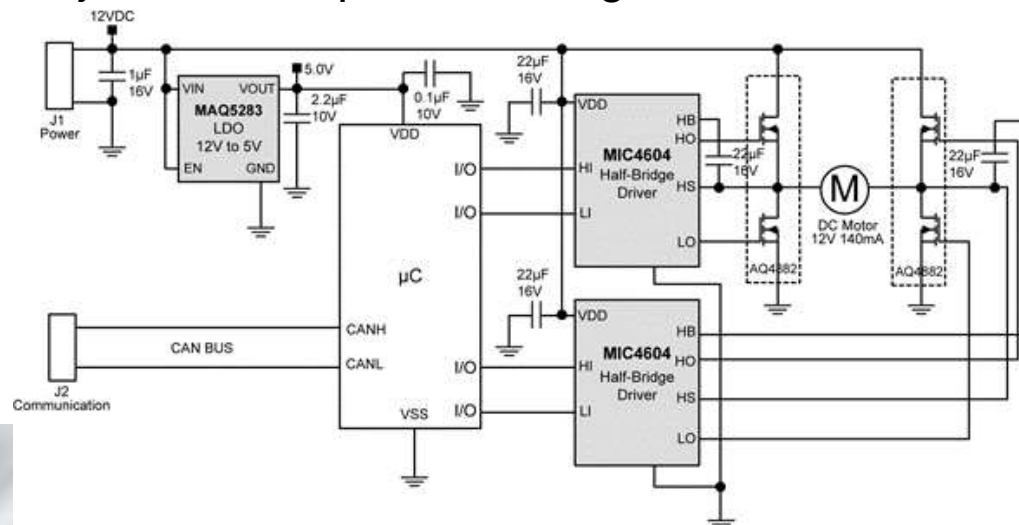
- ◆ 5.5V to 16V gate drive supply voltage range
- ◆ Advanced adaptive-dead-time
- ◆ Intelligent shoot-through protection
- ◆ MIC4605-1: Dual TTL inputs
- ◆ MIC4605-2: Single PWM input
- ◆ Enable input for on/off control
- ◆ On-chip bootstrap diode
- ◆ Fast 35ns propagation times
- ◆ Drives 1000pF load with 20ns rise and fall times
- ◆ Low power consumption: 135μA quiescent current
- ◆ Separate high- and low-side undervoltage protection
- ◆ -40°C to $+125^{\circ}\text{C}$ junction temperature range



MIC4604

85V Half Bridge MOSFET Drivers with up to 16V Programmable Gate Drive

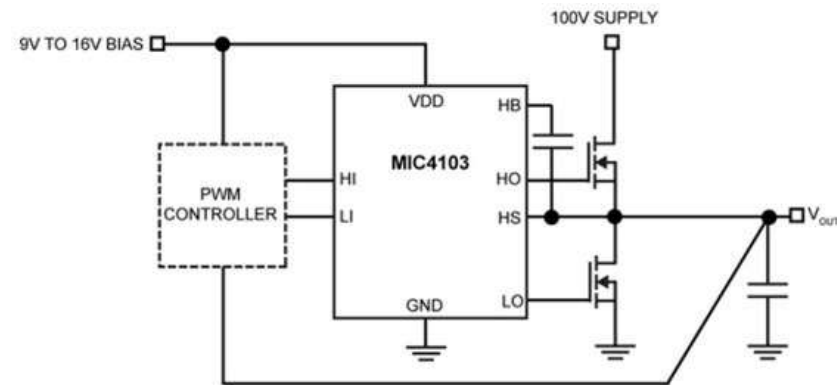
- ◆ 5.5V to 16V gate drive supply voltage range
- ◆ Drives high-side and low-side N-Channel MOSFETs with independent inputs
- ◆ TTL input thresholds
- ◆ On chip bootstrap diode
- ◆ Fast 39ns propagation times
- ◆ Drives 1000pF load with 20ns rise and fall times
- ◆ Low power consumption
- ◆ Supplies undervoltage protection
- ◆ -40°C to $+125^{\circ}\text{C}$ junction temperature range



MIC4103/4

100V Half Bridge MOSFET Drivers 3/2A Sinking/Sourcing Current

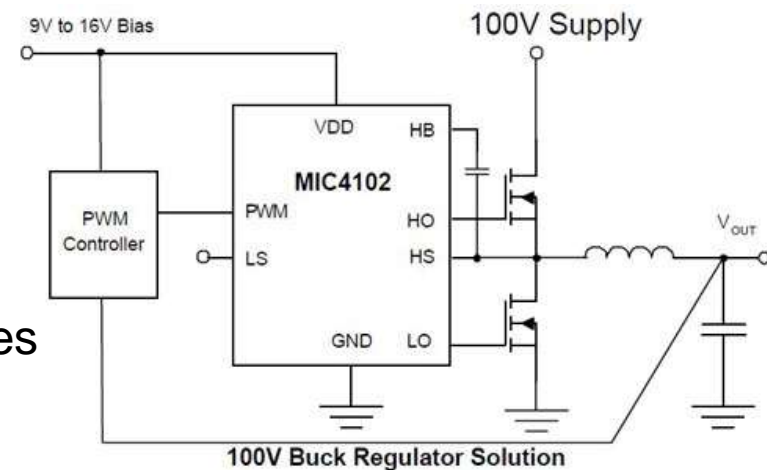
- ◆ Asymmetrical, low impedance outputs drive 1000pF load with 10ns rise times and 6ns fall times
- ◆ Bootstrap supply max voltage to 118V DC
- ◆ Supply voltage up to 16V
- ◆ Drives high- and low-side N-Channel MOSFETs with independent inputs
- ◆ CMOS input thresholds (MIC4103)
- ◆ TTL input thresholds (MIC4104)
- ◆ On-chip bootstrap diode
- ◆ Fast 24ns propagation times
- ◆ Low power consumption
- ◆ Supply under-voltage protection
- ◆ Typical 2.5Ω pull up and 1.25Ω pull down output driver resistance
- ◆ -40°C to +125°C junction temperature range



MIC4102

100V Half Bridge MOSFET Driver with Anti-Shoot-Through Protection

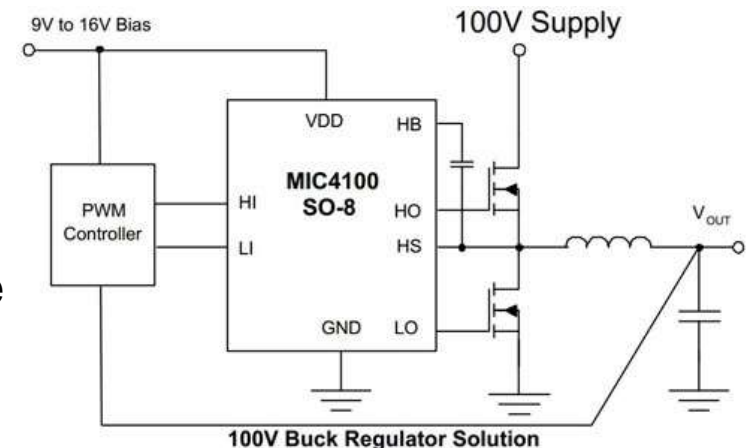
- ◆ Drives high- and low-side N-Channel MOSFETs with single input
- ◆ Adaptive anti-shoot-through protection
- ◆ Low side drive disable pin
- ◆ Bootstrap supply voltage to 118V DC
- ◆ Supply voltage up to 16V
- ◆ TTL input thresholds
- ◆ On-chip bootstrap diode
- ◆ Fast 30ns propagation times
- ◆ Drives 1000pF load with 10ns rise and fall times
- ◆ Low power consumption
- ◆ Supply under-voltage protection
- ◆ 2.5Ω pull up, 1.5Ω pull down output resistance
- ◆ Space saving SOIC-8L package
- ◆ -40°C to +125°C junction temperature range



MIC4100/1

100V Half Bridge MOSFET Drivers

- ◆ Bootstrap supply max voltage to 118V DC
- ◆ Supply voltage up to 16V
- ◆ Drives high- and low-side N-Channel MOSFETs with independent inputs
- ◆ CMOS input thresholds (MIC4100)
- ◆ TTL input thresholds (MIC4101)
- ◆ On-chip bootstrap diode
- ◆ Fast 30ns propagation times
- ◆ Drives 1000pF load with 10ns rise and fall times
- ◆ Low power consumption
- ◆ Supply under-voltage protection
- ◆ 3Ω pull up, 3Ω pull down output resistance
- ◆ Space saving SOIC-8L package
- ◆ -40°C to +125°C junction temperature range

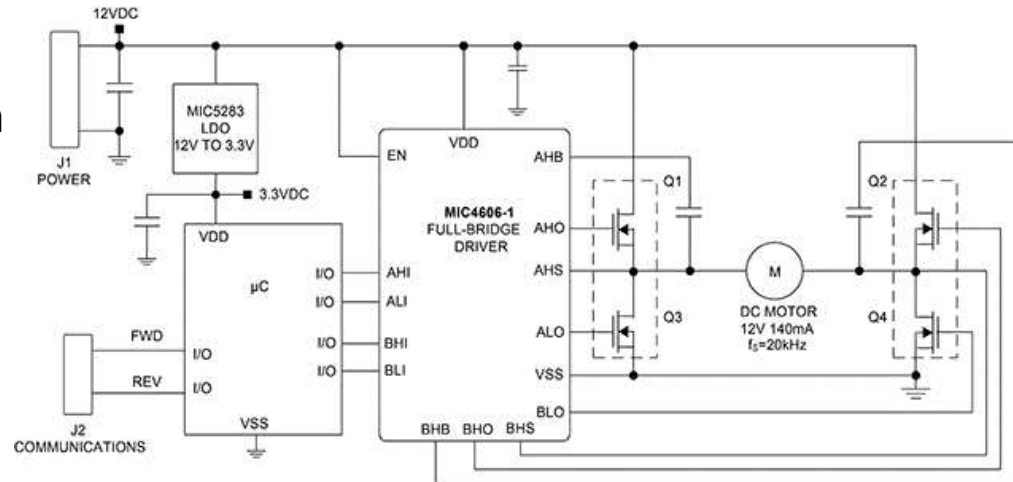




MIC4606

85V Full-Bridge MOSFET Drivers with Adaptive Dead Time and Shoot Through Protection

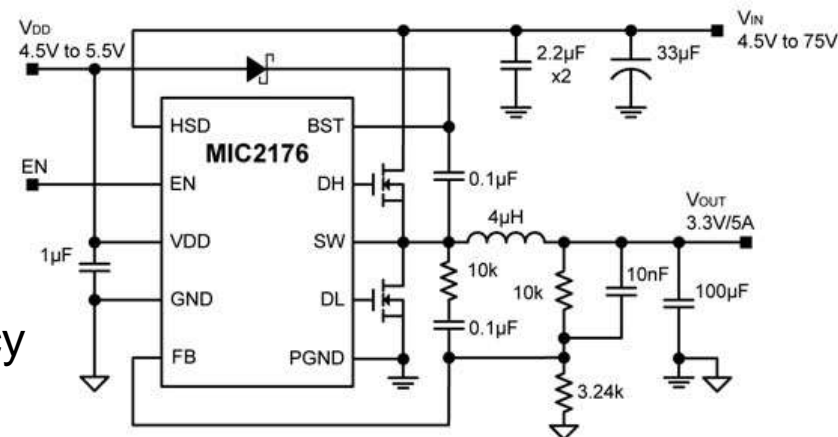
- ◆ 5.5V to 16V gate drive supply voltage range
- ◆ Advanced adaptive-dead-time
- ◆ Intelligent shoot-through protection
 - MIC4606-1: 4 Independent TTL inputs
 - MIC4606-2: 2 PWM inputs
- ◆ Enable input for on/off control
- ◆ On-chip bootstrap diodes
- ◆ Fast 35ns propagation times
- ◆ Drives 1000pF load with 20ns rise and fall times
- ◆ Low power consumption: 235 μ A quiescent current
- ◆ Separate high- and low-side undervoltage protection
- ◆ -40°C to $+125^{\circ}\text{C}$ junction temperature range



MIC2176-1/2/3

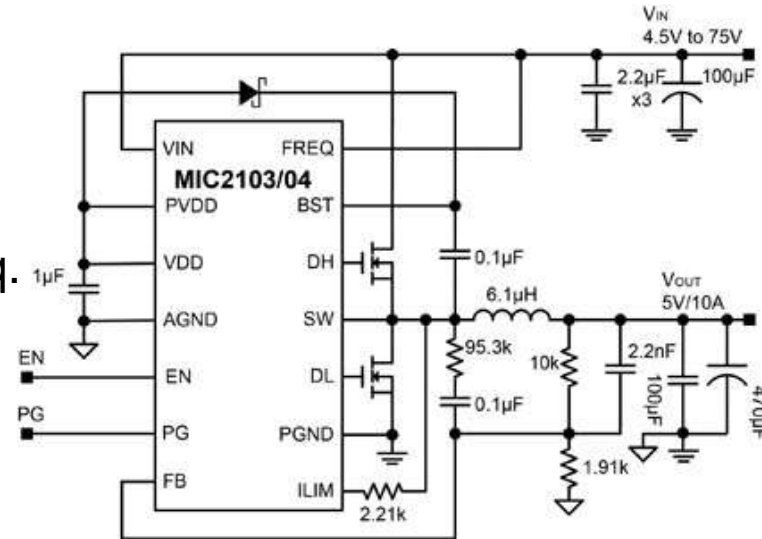
Wide Input Voltage, Synchr Buck Controllers Featuring Adaptive On-Time Control

- ◆ Hyper Speed Control™ architecture enables
 - High delta V operation ($V_{IN} = 75V$ and $V_{OUT} = 1.2V$)
 - Small output capacitance
- ◆ 4.5V to 75V input voltage
- ◆ Output down to 0.8V with $\pm 1\%$ accuracy
- ◆ Any Capacitor™ stable
- ◆ Zero-ESR to high-ESR output capacitance
- ◆ 100kHz/200kHz/300kHz switching frequency
- ◆ Internal compensation
- ◆ 6ms Internal soft-start
- ◆ Foldback current limit and "hiccup" mode short-circuit protection
- ◆ Thermal shutdown
- ◆ Supports safe start-up into a pre-biased output
- ◆ $-40^{\circ}C$ to $+125^{\circ}C$ junction temperature range
- ◆ Available in 10-pin MSOP package



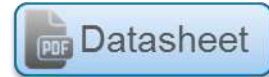
75V, Synchronous Buck Controllers Featuring Adaptive On-Time Control

- ◆ Hyper Speed Control™ architecture enables
 - High delta V operation ($V_{IN}=75V$ and $V_{OUT}=1.2V$)
 - Any Capacitor™ stable
 - ◆ 4.5V to 75V input voltage
 - ◆ 0.8V Reference Voltage with $\pm 1\%$ accuracy
 - ◆ 200kHz - 600kHz, programmable switching freq.
 - ◆ Hyper Light Load Control (MIC2103 only)
 - ◆ Hyper Speed Control (MIC2104 only)
 - ◆ Enable input, Power-Good output
 - ◆ Built-in 5V regulator for single-supply operation
 - ◆ Programmable current limit and fold-back “hiccup” mode short-circuit protection
 - ◆ 5ms internal soft-start, internal compensation, and thermal shutdown
 - ◆ Supports safe start-up into a pre-biased output
 - ◆ $-40^{\circ}C$ to $+125^{\circ}C$ junction temperature range
 - ◆ Available in 16-pin 3mm x 3mm MLF® package
-

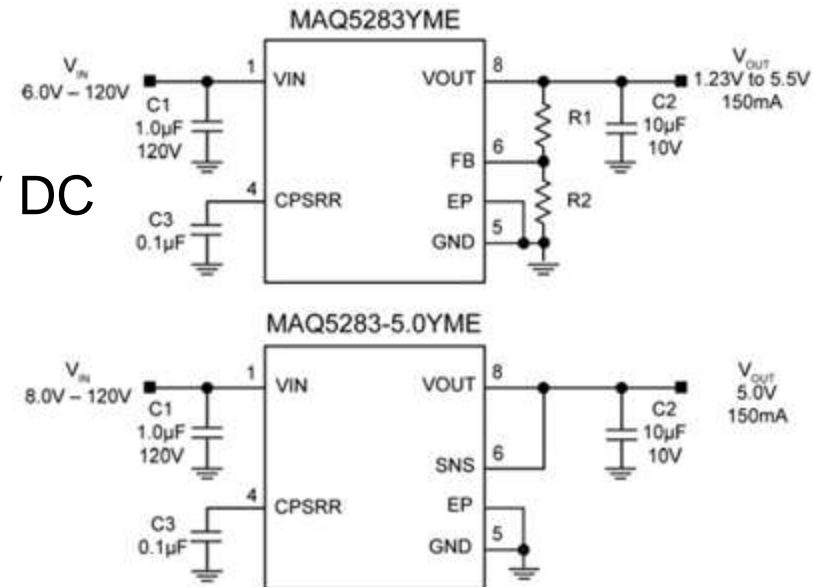


MAQ5283

120V_{IN}, 150mA, Ultra-Low I_Q, High-PSRR Linear Regulator

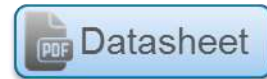


- ◆ AEC-Q100 qualified
- ◆ Wide input voltage range: 6V to 120V DC
- ◆ Ultra-low quiescent current: 8μA
- ◆ 150mA guaranteed output current
- ◆ Adjustable output from 1.23V to 5.5V
- ◆ Stable with ceramic capacitors
- ◆ Ultra-high PSRR (75dB at 10kHz)
- ◆ Ultra-high line rejection (load dump)
- ◆ High output accuracy: ±3% initial accuracy
- ◆ Thermal shutdown and current limit protection
- ◆ Thermally efficient, 8-pin ePad SOIC package

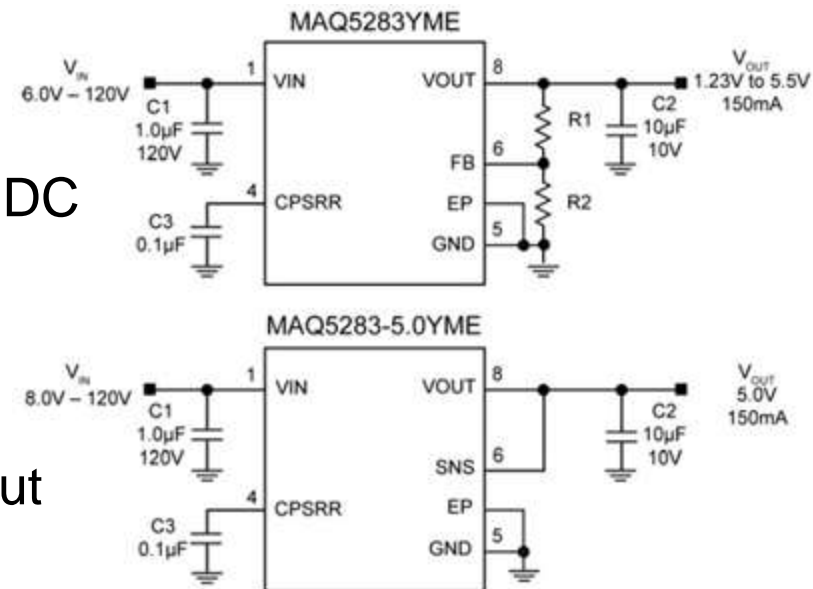


MAQ5282

120V_{IN}, 50mA, Ultra-Low I_Q, High-PSRR Linear Regulator



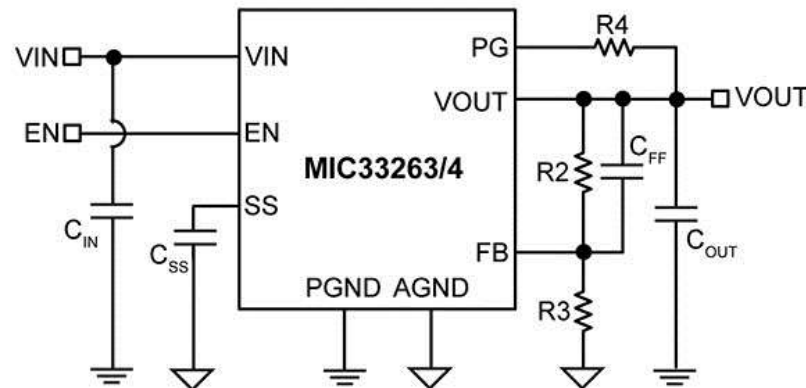
- ◆ AEC-Q100 qualified
- ◆ Wide input voltage range: 6V to 120V DC
- ◆ Ultra-low quiescent current: 6μA
- ◆ 50mA guaranteed output current
- ◆ Adjustable output from 1.27V to 5.5V
- ◆ Withstands up to +120V DC at the input
- ◆ Stable with ceramic output capacitors
- ◆ Ultra-high PSRR (80dB at 10kHz)
- ◆ Ultra-high line rejection (load dump)
- ◆ High output accuracy: ±3% initial accuracy
- ◆ Thermal shutdown and current limit protection
- ◆ Thermally efficient 8-pin ePad MSOP package



MIC33263/4

4MHz, PWM, 2A Buck Regulator with HyperLight Load® and Power Good

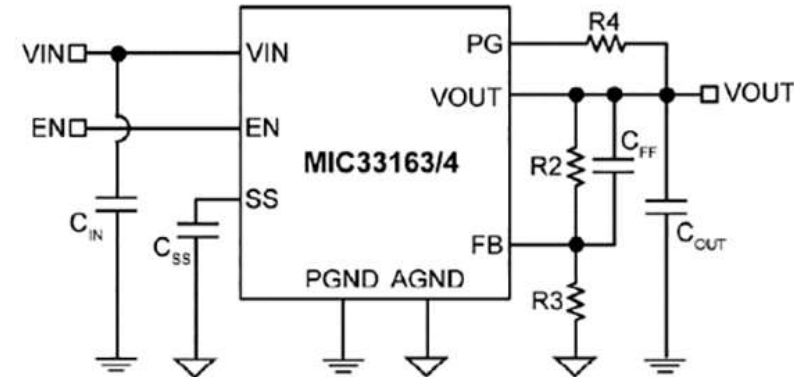
- ◆ Integrated MOSFETs and inductor
- ◆ 100% duty cycle
- ◆ 4MHz PWM operation in continuous mode
- ◆ 2A output current
- ◆ Low output voltage ripple
- ◆ 85% typical efficiency at 1mA and up to 93% peak efficiency
- ◆ Ultra-fast transient response
- ◆ Advanced copper lead frame design provides superior thermal performance
- ◆ Thermal shutdown and current-limit protection
- ◆ Low radiated emission (EMI) per EN55022, class B
- ◆ Adjustable output voltage 0.7V to 5V
- ◆ Configurable soft-start with pre-bias start-up capability
- ◆ Auto Discharge of 180Ω (MIC33264 only)
- ◆ Low profile 2.5mm x 3.0mm x 1.9mm QFN packages
- ◆ 0.1μA shutdown current, 33μA quiescent current



MIC33163/4

4MHz, PWM, 1A Buck Regulator with HyperLight Load® and Power Good

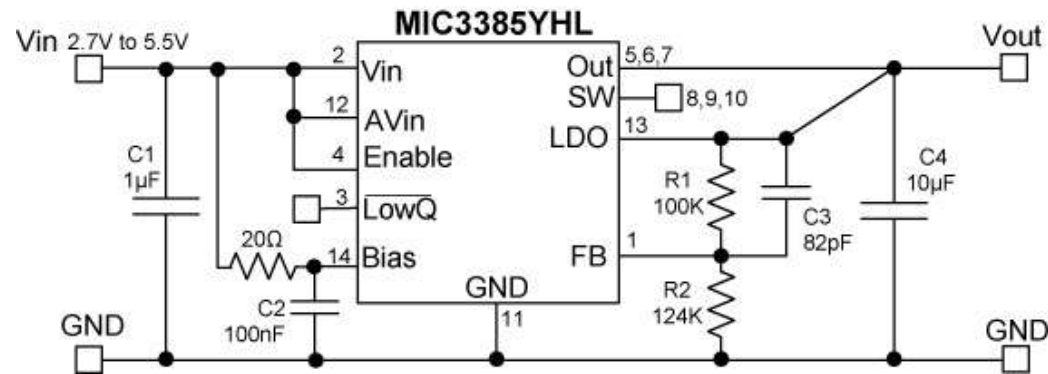
- ◆ Integrated MOSFETs and inductor
- ◆ 100% duty cycle
- ◆ 4MHz PWM operation in continuous mode
- ◆ 1A output current
- ◆ Low output voltage ripple
- ◆ 85% typical efficiency at 1mA, up to 93% peak efficiency
- ◆ Ultra-fast transient response
- ◆ Advanced copper lead frame design provides superior thermal performance
- ◆ Low radiated emission (EMI) per EN55022, class B
- ◆ Adjustable output voltage 0.7V to 5V
- ◆ Thermal shutdown and current-limit protection
- ◆ Configurable soft-start with pre-bias start-up capability
- ◆ Auto discharge of 180Ω (MIC33164 only)
- ◆ Low profile 2.5mm × 3.0mm x 1.1mm QFN package
- ◆ 0.1μA shutdown current
- ◆ 33μA quiescent current



MIC3385

8MHz Power System Module with LDO Standby Mode

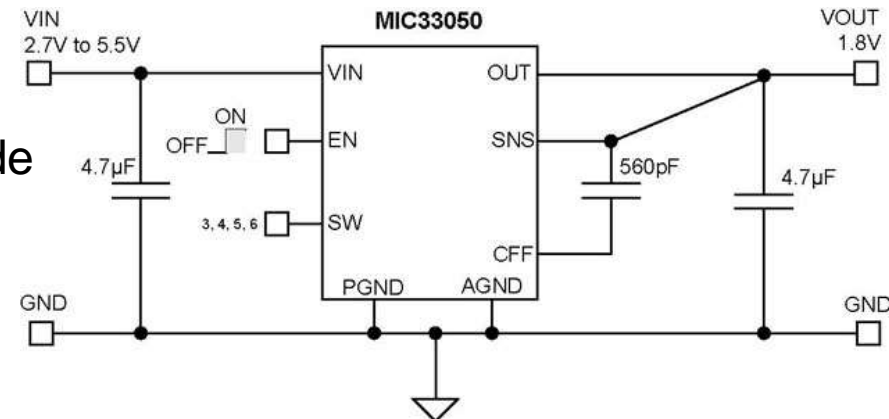
- ◆ 2.7 to 5.5V supply voltage
- ◆ Light load LowQ® LDO mode
 - 18 μ A quiescent current
 - Low noise, 75 μ Vrms
- ◆ 8MHz PWM mode
- ◆ Output current to 600mA
- ◆ >90% efficiency
- ◆ 100% maximum duty cycle
- ◆ Adjustable output voltage option down to 1V
- ◆ Ultra-fast transient response
- ◆ No external inductor required
- ◆ Enables sub 1mm profile solution
- ◆ Fully integrated MOSFET switches
- ◆ Micropower shutdown
- ◆ Thermal shutdown and current limit protection
- ◆ Pb-free 14-pin 3mm x 3.5mm MLF® package



MIC33050

4MHz Internal Inductor PWM Buck Regulator with HyperLight Load®

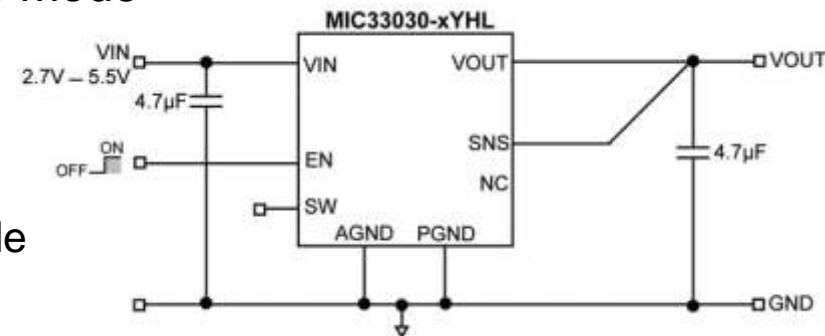
- ◆ Input voltage range: 2.7V to 5.5V
- ◆ Fixed output voltage options from 0.72V to 3.3V
- ◆ Output current guaranteed up to 600mA
- ◆ Ultra fast transient response
- ◆ 20μA typical quiescent current
- ◆ 4MHz in PWM in constant current mode
- ◆ HyperLight Load® mode
- ◆ No external inductor required
- ◆ Low voltage output ripple
 - 25mVpp in HyperLight Load® mode
 - 3mV output voltage ripple in full PWM mode
- ◆ >93% efficiency, >83% at 1mA
- ◆ Fully integrated MOSFET switches
- ◆ Micropower shutdown
- ◆ Thermal shutdown and current limit protection
- ◆ 3mm x 3mm MLF®-12L



MIC33030

8MHz 400mA Internal Inductor Buck Regulator with HyperLight Load®

- ◆ Internal inductor simplifies design to two external capacitors
- ◆ Input voltage: 2.7V to 5.5V
- ◆ Output voltage accuracy of $\pm 2.5\%$ over temperature
- ◆ 400mA output current
- ◆ Efficiency up to 75% at 1mA
- ◆ 21 μ A typical quiescent current
- ◆ Up to 8MHz PWM operation in continuous mode
- ◆ Ultra fast transient response
- ◆ Low-voltage output ripple
 - 30mVpp ripple in HyperLight Load® mode
 - 7mV output voltage ripple in full PWM mode
- ◆ Fully-integrated MOSFET switches
- ◆ 0.01 μ A shutdown current
- ◆ Thermal shutdown and current-limit protection
- ◆ Fixed and adjustable output voltage options available (0.7V to 3.6V)
- ◆ 2.5mm x 2.0mm 10-Lead HMLF®

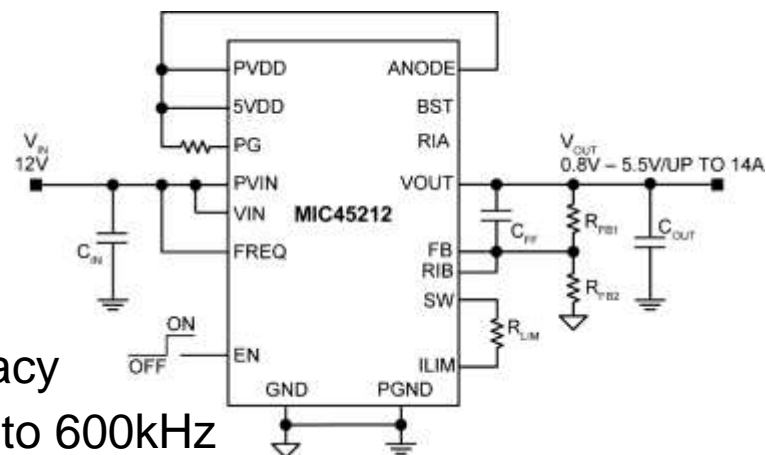




MIC45212

26V, 14A DC-to-DC Power Module

- ◆ No compensation required
- ◆ Up to 14A output current
- ◆ >93% peak efficiency
- ◆ Output voltage: 0.8V to 5.5V with $\pm 1\%$ accuracy
- ◆ Adjustable switching frequency from 200kHz to 600kHz
- ◆ Enable input and open-drain power good output
- ◆ Hyper Speed Control™ (45212-2) architecture enables fast transient response
- ◆ HyperLight Load® (45212-1) improves light load efficiency
- ◆ Supports safe startup into pre-biased output
- ◆ CISPR22, Class B complaint
- ◆ -40°C to $+125^{\circ}\text{C}$ junction temperature range
- ◆ Thermal shutdown protection
- ◆ Short-circuit protection with hiccup mode
- ◆ Adjustable current limit
- ◆ Available in 64-pin 12mm x 12mm x 4mm QFN package

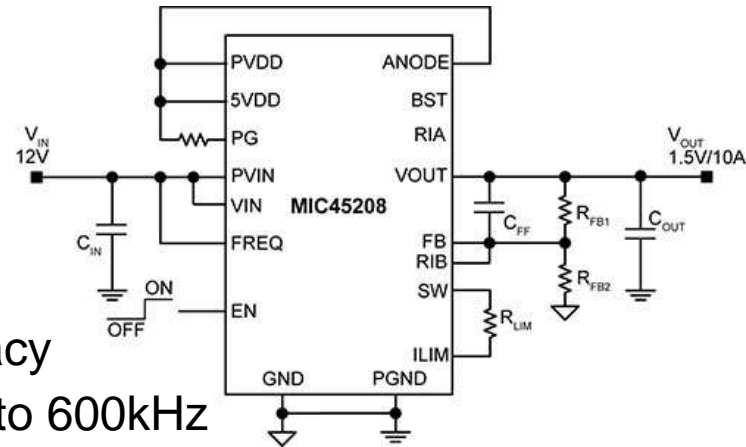




MIC45208

26V, 10A DC-to-DC Power Module

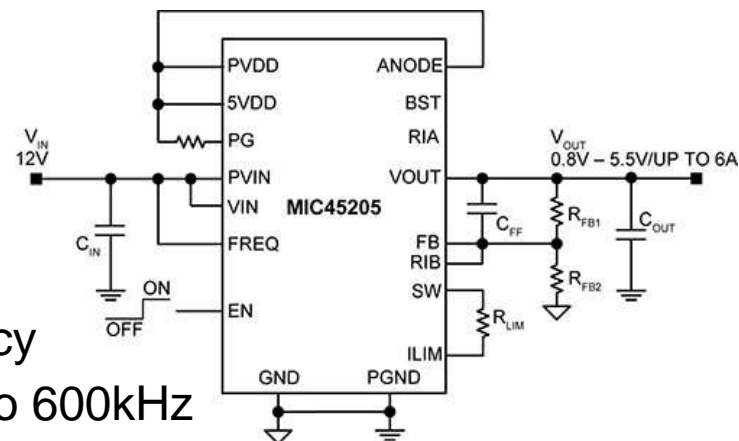
- ◆ No compensation required
- ◆ Up to 10A output current
- ◆ >93% peak efficiency
- ◆ Output voltage: 0.8V to 5.5V with $\pm 1\%$ accuracy
- ◆ Adjustable switching frequency from 200kHz to 600kHz
- ◆ Enable input and open-drain power good output
- ◆ Hyper Speed Control™ (45208-2) architecture enables fast transient response
- ◆ HyperLight Load® (45208-1) improves light load efficiency
- ◆ Supports safe startup into pre-biased output
- ◆ CISPR22, Class B complaint
- ◆ -40°C to $+125^{\circ}\text{C}$ junction temperature range
- ◆ Thermal shutdown protection
- ◆ Short-circuit protection with hiccup mode
- ◆ Adjustable current limit
- ◆ Available in 52-pin 10mm x 10mm x 4mm QFN package



MIC45205

26V, 6A DC-to-DC Power Module

- ◆ No compensation required
- ◆ Up to 6A output current
- ◆ >93% peak efficiency
- ◆ Output voltage: 0.8V to 5.5V with $\pm 1\%$ accuracy
- ◆ Adjustable switching frequency from 200kHz to 600kHz
- ◆ Enable input and open-drain power good output
- ◆ Hyper Speed Control™ (45205-2) architecture enables fast transient response
- ◆ HyperLight Load® (45205-1) improves light load efficiency
- ◆ Supports safe startup into pre-biased output
- ◆ CISPR22, Class B complaint
- ◆ -40°C to $+125^{\circ}\text{C}$ junction temperature range
- ◆ Thermal shutdown protection
- ◆ Short-circuit protection with hiccup mode
- ◆ Adjustable current limit
- ◆ Available in 52-pin 8mm x 8mm x 3mm QFN package

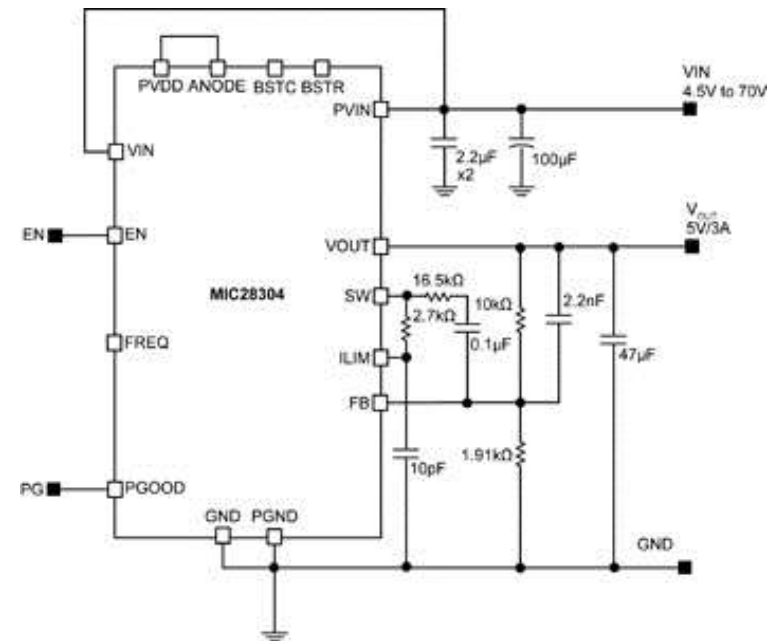




MIC28304

70V, 3A DC-to-DC Power Module

- ◆ Easy to use
 - Stable with low-ESR ceramic output capacitor
 - No compensation and no inductor to choose
- ◆ 4.5V to 70V input voltage
- ◆ HyperLight Load® Control (MIC28304-1)
- ◆ Hyper Speed Control™ (MIC28304-2)
- ◆ Single-supply operation
- ◆ Power Good (PG) output
- ◆ Hiccup mode current limit
- ◆ Low radiated emission (EMI) per EN55022, class B
- ◆ 5ms internal soft-start, internal compensation, and thermal shutdown
- ◆ Adjustable current limit
- ◆ 0.8V Reference voltage with $\pm 1\%$ accuracy
- ◆ Adjustable output voltage from 0.8V to 24V (also limited by duty cycle)
- ◆ 200kHz to 600kHz, programmable switching frequency
- ◆ Supports safe start-up into a pre-biased output
- ◆ Available in 64-pin, 12mm × 12mm × 3.5mm QFN package

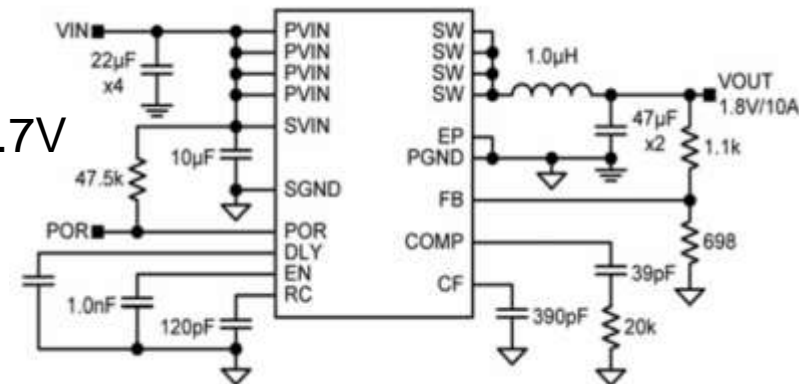




MIC22950

10A Integrated Switch Synchronous Buck Regulator with Freq. Programmable to 2MHz

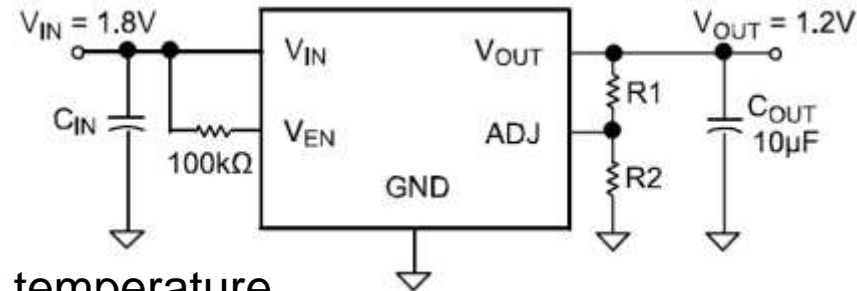
- ◆ 2.6V to 5.5V supply voltage
- ◆ Fully integrated MOSFET switches
- ◆ Adjustable output voltage option down to 0.7V
- ◆ Output load current up to 10A
- ◆ Full sequencing and tracking capability
- ◆ Power On Reset
- ◆ Efficiency >95% across a broad load range
- ◆ Operating frequency programmable: 400kHz to 2MHz
- ◆ Ultra-fast transient response
- ◆ 100% maximum duty cycle
- ◆ Micropower shutdown
- ◆ Thermal shutdown and current-limit protection
- ◆ Available in a 32-pin 5mm x 5mm MLF® package
- ◆ -40°C to +125°C junction temperature range



MIC69502

5A, Low V_{IN} , Low V_{OUT} μ Cap LDO Regulator

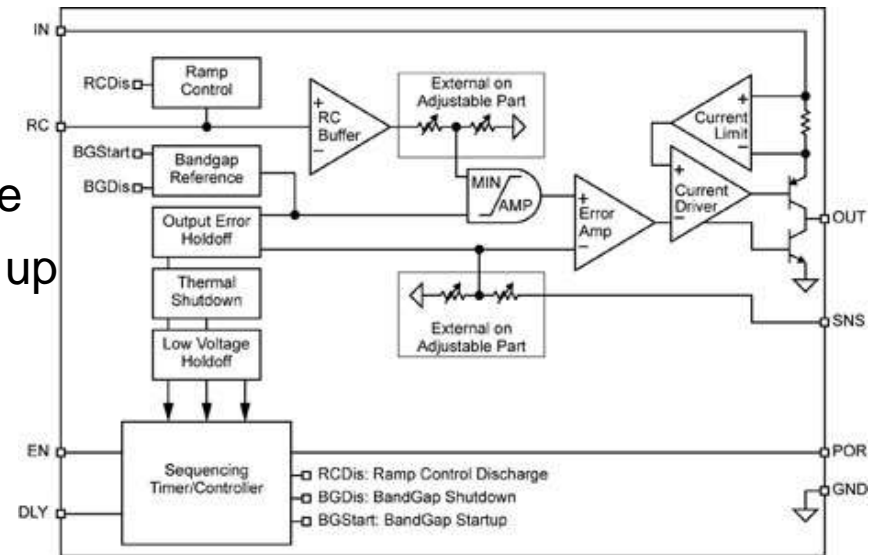
- ◆ Input voltage range: V_{IN} : 1.65V to 5.5V
- ◆ $\pm 1.0\%$ initial output tolerance
- ◆ Adjustable output voltage down to 0.5V
- ◆ Max. dropout ($V_{IN} - V_{OUT}$) of 500mV over temperature
- ◆ Stable with 10 μ F ceramic output capacitor (5A)
- ◆ Excellent line and load regulation specifications
- ◆ Logic controlled shutdown
- ◆ Thermal shutdown and current limit protection
- ◆ 7-Pin S-Pak package
- ◆ -40°C to +125°C temperature junction



MIC68400

4A Sequencing LDO with Tracking and Ramp Control™

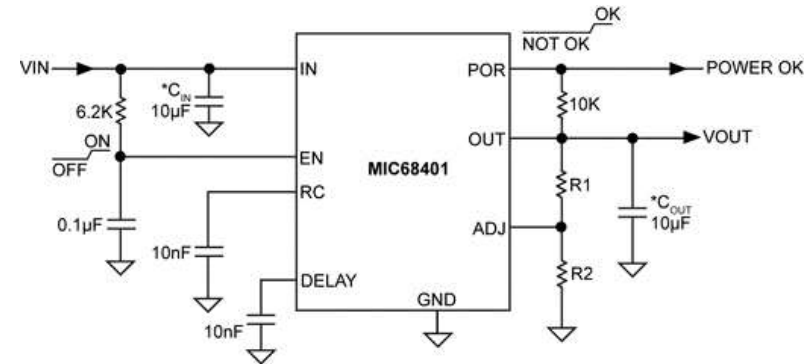
- ◆ Stable with 10μF ceramic capacitor
- ◆ Input voltage range: 1.65V to 5.5V
- ◆ ±2.0% output tolerance over temperature
- ◆ 4A maximum output current - peak start up
- ◆ 3A continuous operating current
- ◆ Timing controlled sequencing on/off
- ◆ Tiny 4mm x 4mm MLF® package
- ◆ Fixed and adjustable output voltages
- ◆ Maximum dropout ($V_{IN} - V_{OUT}$) of 500mV over temperature at 3A output current
- ◆ Thermal shutdown and current limit protection
- ◆ Programmable Ramp Control™ for in-rush current limiting and slew rate control of the output voltage during Turn-On and Turn-Off
- ◆ Single Master can control multiple Slave regulators with tracking output voltages



MIC68401

4A Sequencing LDO with Tracking and Ramp Control™

- ◆ Stable with 10μF ceramic capacitor
- ◆ Input voltage range: 1.65V to 5.5V
- ◆ Low 0.5V reference voltage
- ◆ ±2.0% output tolerance over temperature
- ◆ 4A output current
- ◆ Timing-controlled sequencing on/off
- ◆ Programmable Ramp Control™ for inrush current limiting and slew rate control of the output voltage during turn-on
- ◆ Power-on-reset (POR) supervisor with programmable delay time
- ◆ Single master can control multiple slave regulators with tracking output voltages
- ◆ Small 4mm × 4mm QFN package
- ◆ Maximum dropout ($V_{IN} - V_{OUT}$) of 500mV over temperature at 3A output current
- ◆ Fixed and adjustable output voltages



*MINIMUM CAPACITANCE. FOR GUIDANCE ON THE VALUE OF C_{IN} AND C_{OUT} PLEASE REFER TO THE APPLICATIONS INFORMATION SECTION

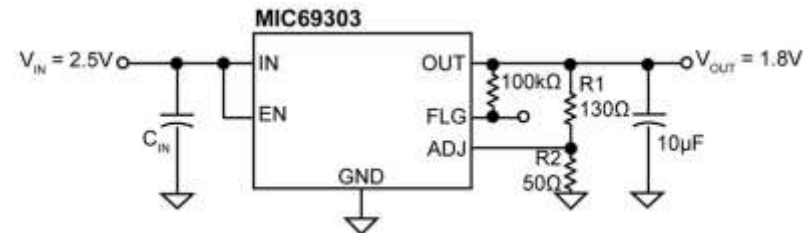




MIC69301/2/3

Single Supply V_{IN} , Low V_{IN} , Low V_{OUT} , 3A LDO

- ◆ Input voltage range: V_{IN} : 1.65V to 5.5V
- ◆ Adjustable output voltage down to 0.5V
- ◆ Stable with 10 μ F ceramic output capacitor
- ◆ Maximum dropout ($V_{IN} - V_{OUT}$) of 500mV over temperature
- ◆ Excellent line and load regulation
- ◆ Logic controlled shutdown
- ◆ Thermal shutdown and current limit protection
- ◆ Error flag output
- ◆ 5-Pin TO-263
- ◆ 5-Pin S-Pak package
- ◆ ePad SOIC-8 package
- ◆ 12-Pin 4mm x 4mm MLF[®] package (MIC69303 only)
- ◆ -40°C to +125°C junction temperature range

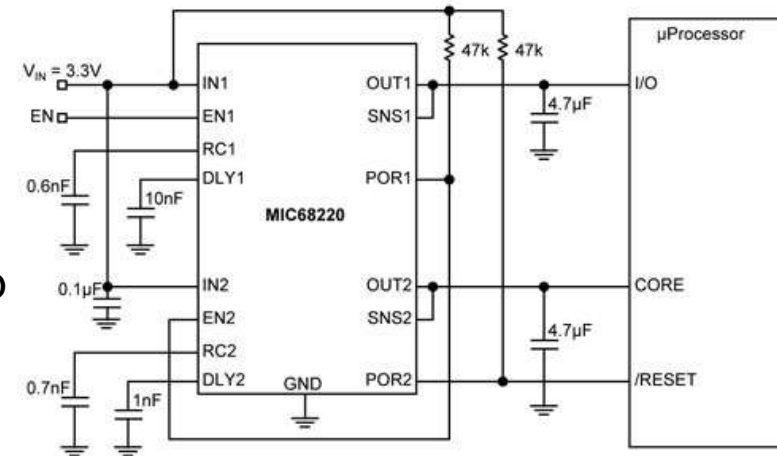




MIC68200

2A Sequencing LDO with Tracking and Ramp Control™

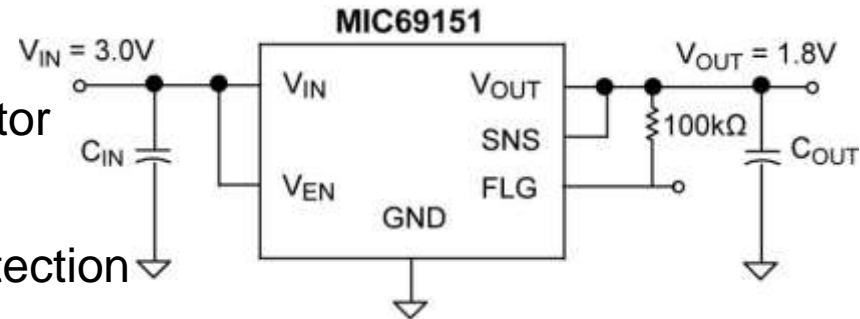
- ◆ Stable with 4.7μF ceramic capacitor
- ◆ Input voltage range: 1.65V to 5.5V
- ◆ ±1.0% initial output tolerance
- ◆ 2A maximum output current -- peak start up
- ◆ 1A continuous operating current
- ◆ Tiny 3mm x 3mm MLF® package
- ◆ Programmable Ramp Control™ for in-rush current limiting and slew rate control of the output voltage
- ◆ Power-on reset (POR) supervisor with programmable delay time
- ◆ Single master can control multiple slave regulators with tracking output voltages
- ◆ Maximum dropout ($V_{IN} - V_{OUT}$) of 500mV over temperature at 1A output current
- ◆ Fixed and adjustable output voltages
- ◆ Thermal shutdown and current limit protection



MIC69151/3

Single Supply V_{IN} , Low V_{IN} , Low V_{OUT} , 1.5A LDO

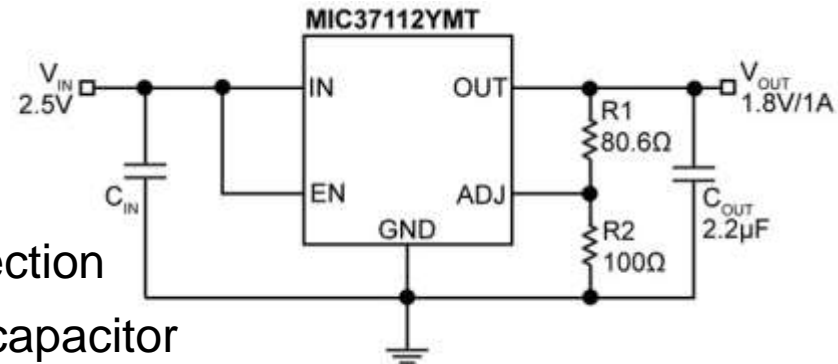
- ◆ Adjustable output voltage down to 0.5V
- ◆ Stable with 10 μ F ceramic output capacitor
- ◆ 10-Pin 3mm x 3mm MLF[®] package
- ◆ Thermal shutdown and current limit protection
- ◆ Single input voltage range: V_{IN} : 1.65V to 5.5V
- ◆ Available -40°C to +125°C junction temperature
- ◆ Excellent line and load regulation specifications
- ◆ Logic controlled shutdown
- ◆ Maximum dropout ($V_{IN} - V_{OUT}$) of 500mV over temperature



MIC37110/2 MIC37120/2

High-Performance, Low-Noise, 1A LDOs

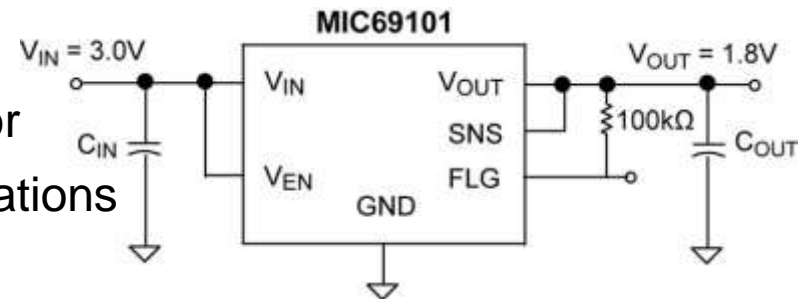
- ◆ Input voltage range: 2.375V to 5.5V
- ◆ 230mV typical dropout at 1A
- ◆ 1A minimum guaranteed output current
- ◆ Thermal shutdown and current limit protection
- ◆ Stable with small, 2.2 μ F ceramic output capacitor
- ◆ Output voltage adjustable down to 1.0V (MIC37112/MIC37122)
- ◆ $\pm 2.0\%$ initial accuracy
- ◆ Low ground current
- ◆ High PSRR: >60dB, up to 1kHz
- ◆ Output auto-discharge circuit (MIC37120/MIC37122)



MIC69101/3

Single Supply V_{IN} , Low V_{IN} , Low V_{OUT} , 1A LDO

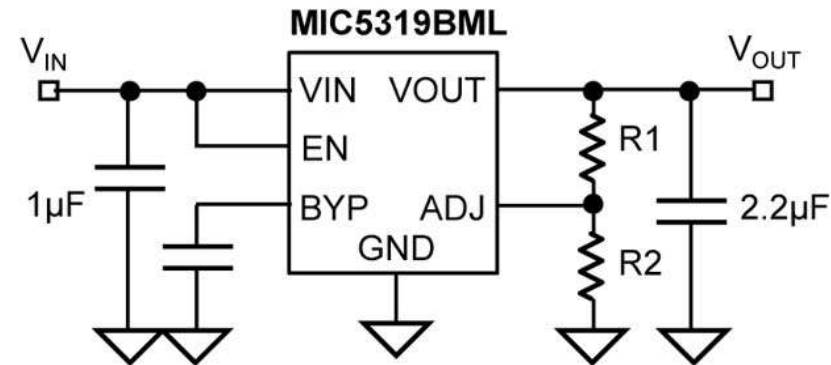
- ◆ Adjustable output voltage down to 0.5V
- ◆ Stable with 4.7 μ F ceramic output capacitor
- ◆ Excellent line and load regulation specifications
- ◆ Logic-controlled shutdown
- ◆ Single input voltage range: V_{IN} : 1.65V to 5.5V
- ◆ Maximum dropout ($V_{IN} - V_{OUT}$) of 500mV over temperature
- ◆ Thermal shutdown and current limit protection
- ◆ 10-Pin 3mm x 3mm MLF[®] package
- ◆ Available -40°C to +125°C junction temperature



MIC5319

500mA μ Cap Ultra-Low Dropout, High PSRR LDO Regulator

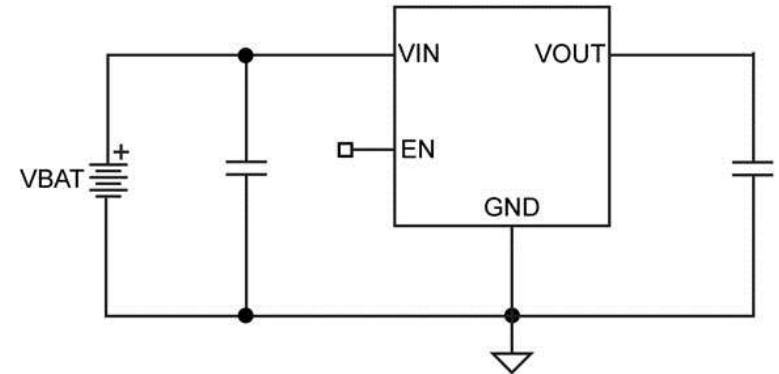
- ◆ Ultra-low dropout voltage 200mV @ 500mA
- ◆ Input voltage range: 2.5 to 5.5V
- ◆ Stable with ceramic output capacitor
- ◆ Low output noise $30\mu\text{V}_{\text{rms}}$
- ◆ Low quiescent current of 90 μA total
- ◆ High PSRR, up to 70dB @1kHz
- ◆ Fast turn-on-time 40 μs typical
- ◆ High output accuracy:
 - $\pm 1.0\%$ initial accuracy
 - $\pm 2.0\%$ over temperature
- ◆ Thermal shutdown protection
- ◆ Tiny 2mm x 2mm MLF[®] package, 500mA continuous
- ◆ Thin SOT-23-5 package, 500mA peak



MIC5524

High-Performance 500mA LDO in Thin DFN Package

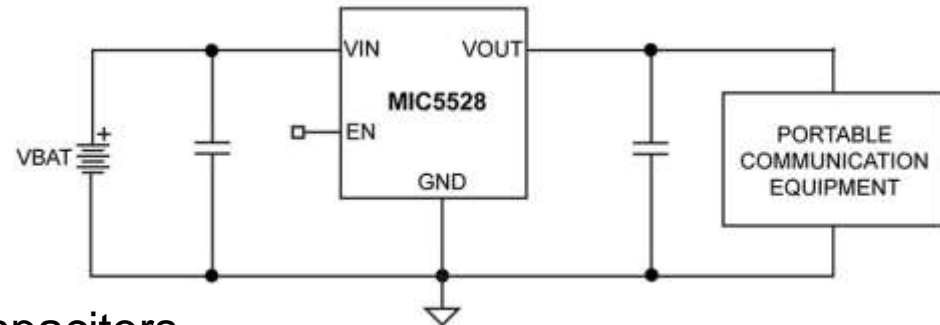
- ◆ Input voltage range: 2.5V to 5.5V
- ◆ Fixed output voltages down to 1.0V
- ◆ 500mA guaranteed output current
- ◆ High output initial accuracy ($\pm 1\%$)
- ◆ High PSRR: 80dB
- ◆ Low quiescent current: 38 μ A
- ◆ Stable with 2.2 μ F ceramic output capacitors
- ◆ Low dropout voltage: 260mV @ 500mA
- ◆ Autodischarge and internal enable pulldown
- ◆ Thermal-shutdown and current-limit protection
- ◆ 4-pin 1mm x 1mm Thin DFN package



MIC5528

High-Performance 500mA LDO in Thin DFN Package

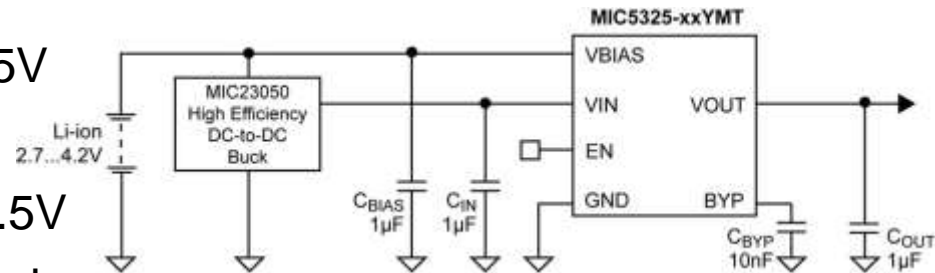
- ◆ Input voltage range: 2.5V to 5.5V
- ◆ Fixed output voltages down to 1.0V
- ◆ $\pm 2\%$ Room temperature accuracy
- ◆ Low quiescent current: 38 μ A
- ◆ Stable with 2.2 μ F ceramic output capacitors
- ◆ Low dropout voltage: 260mV @ 500mA
- ◆ Autodischarge and internal enable pulldown
- ◆ Thermal-shutdown and current-limit protection
- ◆ 6-pin 1.2mm x 1.2mm extra thin DFN package
- ◆ 6-pin 1.2mm x 1.2mm thin DFN package



MIC5325

Low V_{IN}/V_{OUT} 400mA ULDO with Ultra-Low I_Q

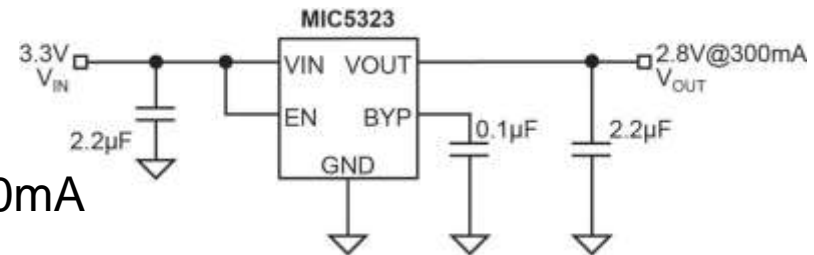
- ◆ Wide input voltage range: 1.7V to 5.5V
- ◆ Very fast transient response
- ◆ Bias supply voltage range: 2.5V to 5.5V
- ◆ Ultra-low ground current: 35 μ A typical
- ◆ 400mA maximum output current per LDO
- ◆ Thermal shutdown and current limit protection
- ◆ Tiny 6-pin 2mm x 2mm Thin MLF[®] package
- ◆ Ultra-low dropout voltage ULDO[™]: 110mV at 400mA
- ◆ Stable with 1 μ F ceramic output capacitor
- ◆ $\pm 2\%$ voltage accuracy over temperature
- ◆ Adjustable output voltage range: 0.8V to 2.0V



MIC5323

Low V_{IN}/V_{OUT} 400mA ULDO with Ultra-Low I_Q

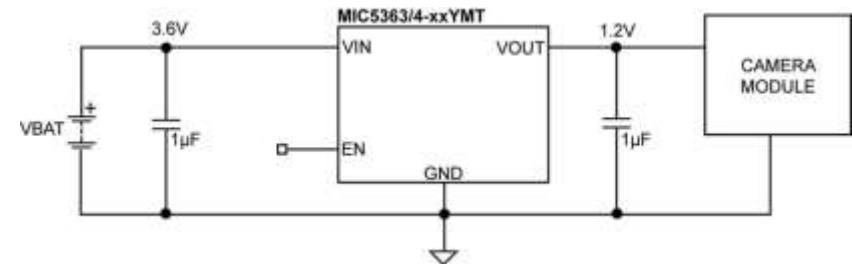
- ◆ Input voltage range: 2.65 to 5.5V
- ◆ Stable with ceramic output capacitor
- ◆ Ultra-low dropout voltage of 120mV at 300mA
- ◆ 300mA guaranteed output current
- ◆ Low output noise: $20\mu V_{rms}$
- ◆ High PSRR: up to 80dB at 1kHz
- ◆ Less than 30 μs turn-on time with $C_{BYP} = 0.1\mu F$
- ◆ High output accuracy: $\pm 2.0\%$ over temperature
- ◆ Thermal shutdown protection
- ◆ Current limit protection
- ◆ 6-pin 2mm \times 2mm Thin MLF[®] package
- ◆ Thin SOT-23-5 package



MIC5363/4

High-PSRR, 300mA, μ Cap LDO in 1.2mm \times 1.2mm Thin MLF[®]

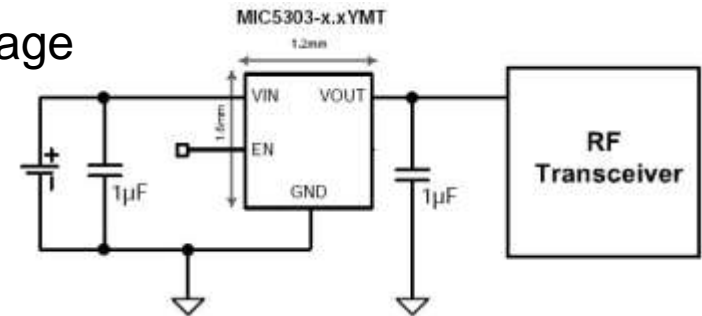
- ◆ 2.5V to 5.5V input voltage range
- ◆ 300mA output
- ◆ High output accuracy: $\pm 2\%$
- ◆ Low quiescent current: typically 38 μ A
- ◆ Stable with 1 μ F ceramic capacitors
- ◆ High PSRR: 70dB at 1kHz
- ◆ Low dropout voltage: 225mV at 300mA
- ◆ Thermal shutdown protection
- ◆ Current limit protection
- ◆ Active output discharge circuit: MIC5364
- ◆ 6-pin 1.2mm x 1.2mm Thin MLF[®] package



MIC5303

Single 300mA CMOS Ultra-Small ULDO

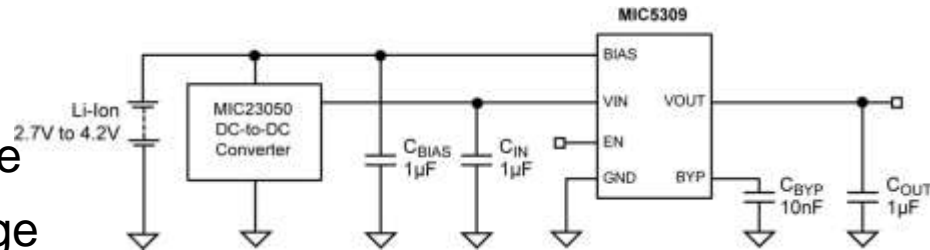
- ◆ Ultra-small 1.2mm x 1.6mm Thin MLF[®] package
- ◆ Low dropout voltage: 100mV at 300mA
- ◆ Output noise: 120 μ V_{rms}
- ◆ Input voltage range: 2.3V to 5.5V
- ◆ 300mA guaranteed output current
- ◆ Stable with ceramic output capacitors
- ◆ Low quiescent current: 85 μ A total
- ◆ 35 μ s turn-on time
- ◆ High output accuracy:
 - $\pm 2\%$ initial accuracy
 - $\pm 3\%$ over temperature
- ◆ Thermal shutdown and current limit protection



MIC5309

Low V_{IN}/V_{OUT} 300mA High PSRR ULDO with Ultra-Low I_Q

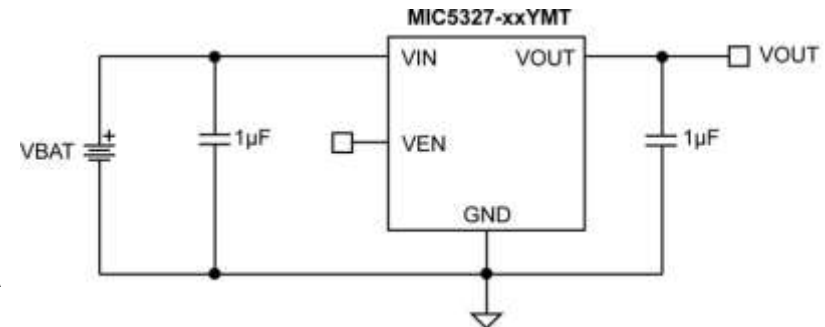
- ◆ Input voltage range: 1.7V to 5.5V
- ◆ Guaranteed 300mA over temperature
- ◆ Cost effective 6-pin TSOT-23 package
- ◆ High PSRR: up to 90dB at 1kHz
- ◆ Ultra-low dropout voltage: 100mV for typical 300mA load
- ◆ Output Voltage range: 0.8V to 2.0V
- ◆ Very low ground current: 23 μ A under full load
- ◆ Bias supply voltage range: 2.5V to 5.5V
- ◆ Stable with 1 μ F ceramic output capacitor
- ◆ 300mA maximum output current at 1.7V input voltage
- ◆ Very fast transient response – ideal for digital loads
- ◆ Thermal shutdown and current limit protection
- ◆ Tiny 6-pin 1.6mm x 1.6mm Thin MLF[®] package



MIC5327

300mA Low Quiescent Current LDO

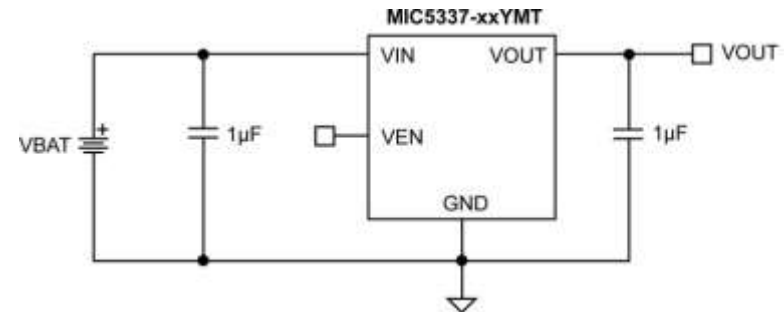
- ◆ 300mA output current
- ◆ Input voltage range: 2.3V to 5.5V
- ◆ Low 24 μ A operating current
- ◆ Low dropout voltage of 180mV at 300mA
- ◆ Fixed output voltages
- ◆ Stable with 1 μ F ceramic capacitors
- ◆ Thermal shutdown and current limit protection
- ◆ Tiny 4-pin 1.2mm x 1.6mm Thin MLF[®] package



MIC5337

1.2mm x 1.6mm 300mA Low I_Q LDO Ultra Low Dropout with Auto Discharge

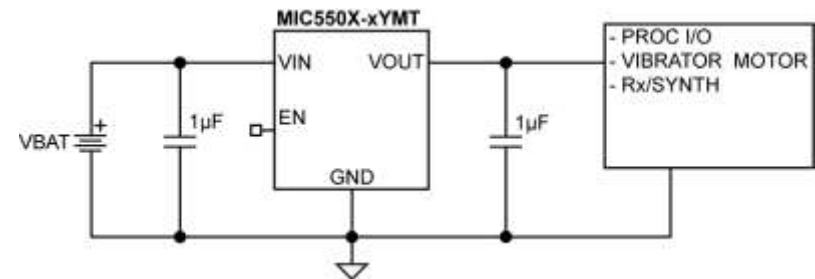
- ◆ 300mA output current
- ◆ Low I_Q : only 24 μ A operating current
- ◆ Low dropout voltage: 180mV at 300mA
- ◆ Active discharge when enable pin is low
- ◆ Input voltage range: 2.3V to 5.5V
- ◆ Fixed output voltages
- ◆ Stable with 1 μ F ceramic capacitors
- ◆ Thermal shutdown and current limit protection
- ◆ Tiny 4-pin 1.2mm x 1.6mm Thin MLF[®] package



MIC5501/2/3/4

Single 300mA LDO in 1.0mm x 1.0mm DFN Package

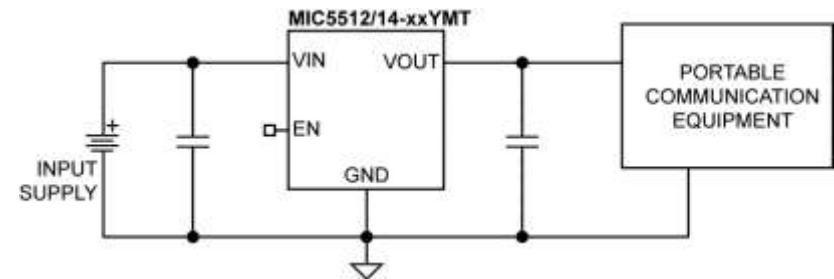
- ◆ Input voltage range: 2.5V to 5.5V
- ◆ Fixed output voltages from 1.0V to 3.3V
- ◆ 300mA guaranteed output current
- ◆ High output accuracy ($\pm 2\%$)
- ◆ Low quiescent current: 38 μ A
- ◆ Stable with 1 μ F ceramic output capacitors
- ◆ Low dropout voltage: 160mV @ 300mA
- ◆ Output discharge circuit: MIC5502, MIC5504
- ◆ Internal enable pull-down: MIC5503, MIC5504
- ◆ Thermal-shutdown and current-limit protection
- ◆ 4-lead 1.0mm x 1.0mm Thin DFN package
- ◆ MIC5504 5-pin SOT23 package



MIC5512/4

Single 300mA LDO in 1.6mm x 1.6mm Thin DFN Package

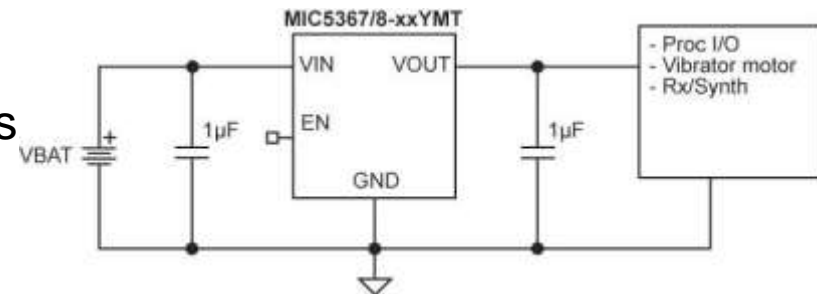
- ◆ Input voltage range: 2.5V to 5.5V
- ◆ Fixed output voltages from 1.0V to 3.3V
- ◆ 300mA guaranteed output current
- ◆ $\pm 1\%$ initial output accuracy
- ◆ Stable with 1 μ F ceramic output capacitors
- ◆ Low dropout voltage: 160mV @ 300mA
- ◆ Output discharge circuit
- ◆ Internal enable pull-down resistor (MIC5514)
- ◆ Available in ultra-small 6-pin 1.6mm x 1.6mm Thin DFN package



MIC5367/8

High Performance 200mA Peak LDO in 1.6mm x 1.6mm Thin MLF®

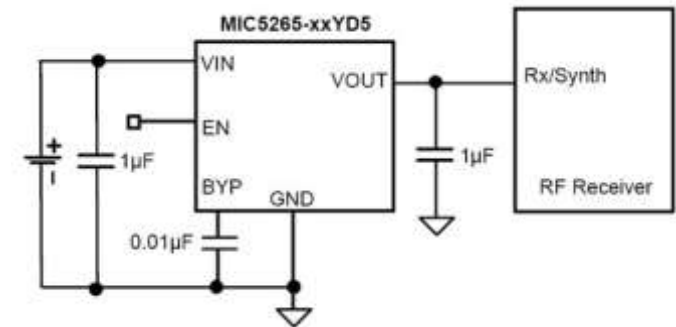
- ◆ Input voltage range: 2.5V to 5.5V
- ◆ Stable with 1μF ceramic output capacitors
- ◆ Low dropout voltage: 180mV at 150mA
- ◆ Excellent load/line transient response
- ◆ Low quiescent current: 29μA
- ◆ 200mA peak (150mA continuous) output current
- ◆ High PSRR: 65dB
- ◆ Output discharge circuit -- MIC5368
- ◆ High output accuracy:
 - ±2% initial accuracy
- ◆ Tiny 1.6mm x 1.6mm Thin MLF® package
- ◆ Thermal shutdown and current limit protection



MIC5265

150mA μ Cap LDO Regulator

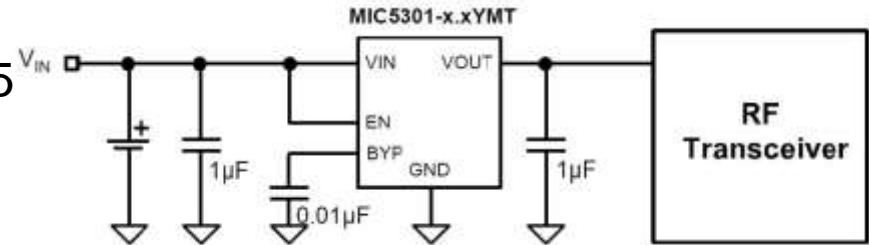
- ◆ 2.7V to 5.5V supply voltage
- ◆ Low 90 μ A quiescent current per LDO
- ◆ Thin SOT-23-5 package
- ◆ Low Noise: 57 μ V_{rms}
- ◆ High PSRR: 70dB at 1kHz
- ◆ Low dropout voltage: 210mV at 150mA
- ◆ Stable with ceramic output capacitors
- ◆ Independent enable pins
- ◆ Fast transient response
- ◆ Active shutdown on both outputs



MIC5301

Single, 150mA μ Cap ULDO

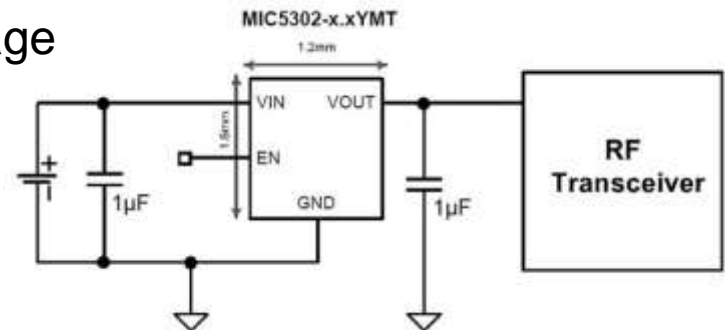
- ◆ Ultra-low dropout voltage: 40mV at 150mA
- ◆ Input voltage range: 2.3V to 5.5V
- ◆ 150mA guaranteed output current
- ◆ Stable with ceramic output capacitors
- ◆ Ultra-low output noise: $30\mu\text{V}_{\text{rms}}$
- ◆ Low quiescent current: 85 μA total
- ◆ High PSRR: up to 75dB at 1kHz
- ◆ 35 μs turn-on time
- ◆ High output accuracy:
 - $\pm 2\%$ initial accuracy
 - $\pm 3\%$ over temperature
- ◆ Thermal shutdown and current limit protection
- ◆ Tiny 6-pin 1.6mm x 1.6mm MLF[®] lead-less package



MIC5302

150mA ULDO in Ultra-Small 1.2mm x 1.6mm Thin MLF®

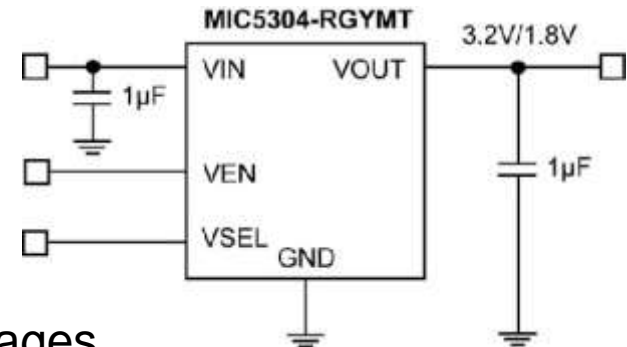
- ◆ Ultra-small 1.2mm x 1.6mm Thin MLF® package
- ◆ Low dropout voltage: 50mV at 150mA
- ◆ Output noise: $120\mu\text{V}_{\text{rms}}$
- ◆ Input voltage range: 2.3V to 5.5V
- ◆ 150mA guaranteed output current
- ◆ Stable with ceramic output capacitors
- ◆ Low quiescent current: 85 μA total
- ◆ 35 μs turn-on time
- ◆ High output accuracy:
 - $\pm 2\%$ initial accuracy
 - $\pm 3\%$ over temperature
- ◆ Thermal shutdown and current limit protection



MIC5304

Single 150mA Low Operating Current LDO with Dual Voltage Pin Select

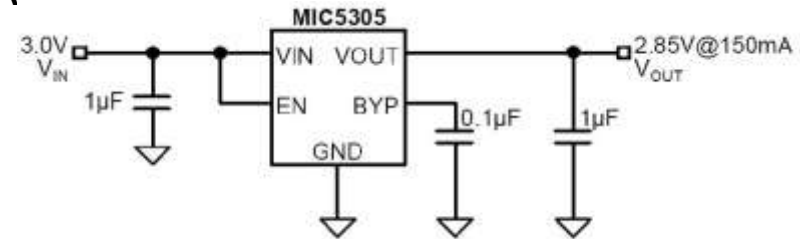
- ◆ 150mA output current
- ◆ Logic-controlled selectable output voltage
- ◆ Input voltage range: 2.3V to 5.5V
- ◆ Low 24 μ A operating current
- ◆ Fast transition time between selected output voltages
- ◆ Stable with 1 μ F ceramic capacitors
- ◆ Low dropout voltage: 85mV at 150mA
- ◆ Thermal shutdown and current limit protection
- ◆ Tiny 6-pin 1.6mm x 1.6mm Thin MLF[®] package



MIC5305

150mA μ Cap Ultra-Low Dropout LDO Regulator

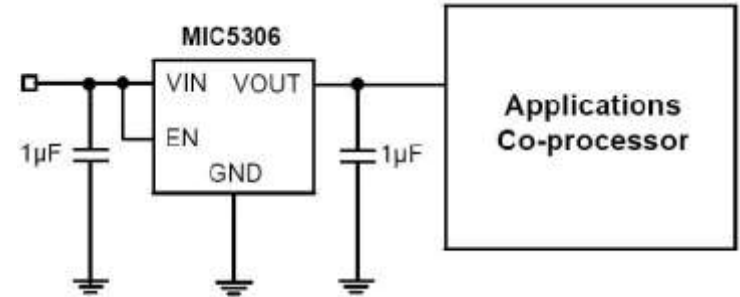
- ◆ Ultra-low dropout voltage: 60mV at 150mA
- ◆ Input voltage range: 2.25V to 5.5V
- ◆ Stable with ceramic output capacitor
- ◆ 150mA guaranteed output current
- ◆ Low output noise: $20\mu\text{V}_{\text{rms}}$
- ◆ Low quiescent current: 90 μA total
- ◆ High PSRR: up to 85dB at 1kHz
- ◆ Less than 30 μs turn-on time w/ $C_{\text{BYP}} = 0.01\mu\text{F}$
- ◆ High output accuracy
- ◆ Thermal shutdown protection
- ◆ Current limit protection
- ◆ Tiny 6-pin 2mm x 2mm MLF[®] package
- ◆ Ultra-Thin 6-pin 2mm x 2mm Thin MLF[®] package



MIC5306

150mA Micropower μ Cap Baseband LDO

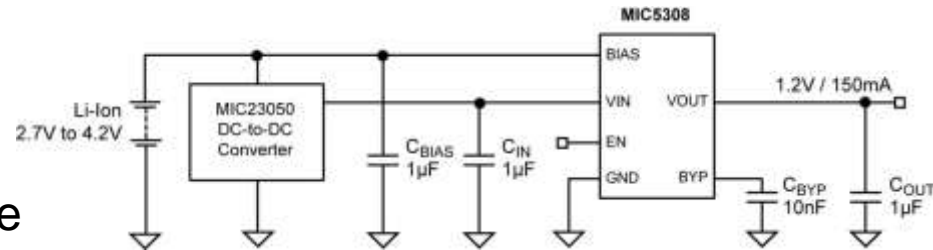
- ◆ Input voltage range: 2.25V to 5.5V
- ◆ Ultra-low I_Q : only 16 μ A operating current
- ◆ Stable with ceramic output capacitor
- ◆ Low dropout voltage: 45mV at 100mA
- ◆ High output accuracy:
 - $\pm 1.0\%$ initial accuracy
 - $\pm 2.0\%$ over temperature
- ◆ Thermal shutdown protection
- ◆ Current limit protection



MIC5308

Low V_{IN}/V_{OUT} 150mA High PSRR ULDO with Ultra-Low IQ

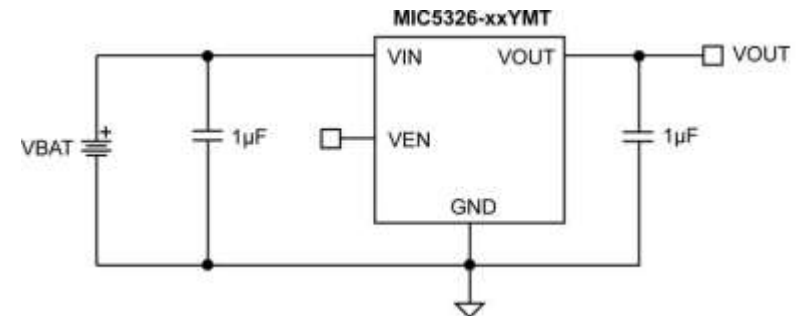
- ◆ Input voltage range: 1.6V to 5.5V
- ◆ High PSRR: up to 90dB at 1kHz
- ◆ Guaranteed 150mA over temperature
- ◆ Ultra-low dropout voltage: 45mV at 150mA
- ◆ Output voltage range: 0.8V to 2.0V
- ◆ Very low ground current: 23μA under full load
- ◆ Bias supply voltage range: 2.5V to 5.5V
- ◆ Stable with 1μF ceramic output capacitor
- ◆ Input voltage range: 1.6V to 5.5V
- ◆ Guaranteed 150mA over temperature
- ◆ Ultra-low dropout voltage: 45mV at 150mA
- ◆ High PSRR: up to 90dB at 1kHz
- ◆ Output voltage range: 0.8V to 2.0V



MIC5326

150mA Low Operating Current LDO

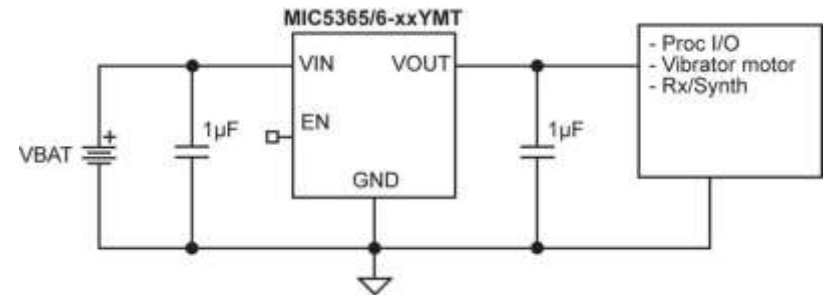
- ◆ 150mA output current
- ◆ Input voltage range: 2.3V to 5.5V
- ◆ Low 24 μ A operating current
- ◆ Low dropout voltage of 85mV at 150mA
- ◆ Fixed output voltage
- ◆ Stable with 1 μ F ceramic capacitors
- ◆ Thermal shutdown and current limit protection
- ◆ Tiny 4-pin 1.2mm x 1.6mm Thin MLF[®] package



MIC5365/66

High Performance Single 150mA LDO

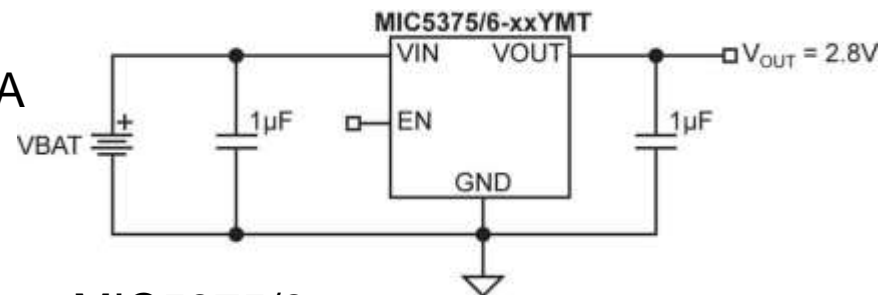
- ◆ Input voltage range: 2.5V to 5.5V
- ◆ 150mA guaranteed output current
- ◆ Stable with ceramic output capacitors
- ◆ Low dropout voltage: 180mV at 150mA
- ◆ Tiny 1mm x 1mm Thin MLF®, SC-70-5, and Thin SOT23-5 packages
- ◆ Excellent Load/Line Transient Response
- ◆ Low quiescent current: 32μA
- ◆ High PSRR: 70dB
- ◆ Output discharge circuit (MIC5366)
- ◆ High output accuracy:
 - ±2% initial accuracy
- ◆ Thermal shutdown and current limit protection



MIC5375/6/7/8

High Performance Low Dropout 150mA LDO

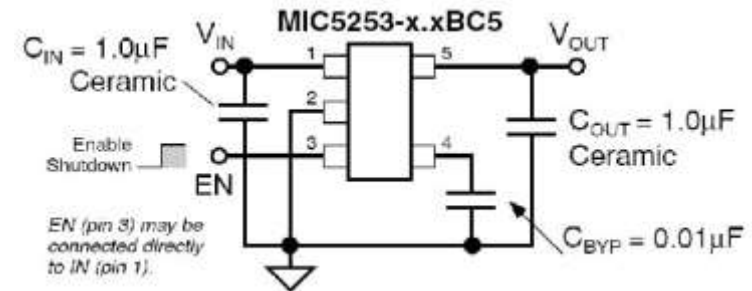
- ◆ Low cost 5-pin SC-70 package
- ◆ Low dropout voltage: 120mV at 150mA
- ◆ Input voltage range: 2.5V to 5.5V
- ◆ 150mA guaranteed output current
- ◆ 4-pin 1mm x 1mm Thin MLF[®] package -- MIC5375/6
- ◆ 8-pin 1.2mm x 1.2mm Thin MLF[®] package -- MIC5377/8
- ◆ Stable with 0402 ceramic capacitors as low as 1μF
- ◆ Low quiescent current: 29μA
- ◆ Fixed output voltages -- MIC5375/6
- ◆ Adjustable output -- MIC5377/8
- ◆ Output discharge circuit -- MIC5376/8
- ◆ High output accuracy:
 - ±2% initial accuracy
- ◆ Thermal shutdown and current limit protection



MIC5253

100mA Low Noise μ Cap Teeny™ LDO

- ◆ Input voltage range: 2.7V to 5.5V
- ◆ Teeny™ SC-70-5 package
- ◆ Ultra-low output noise: $30\mu\text{V}_{\text{rms}}$
- ◆ Stability with ceramic output capacitors
- ◆ 100mA continuous output current, 150mA peak current
- ◆ Ultra-low dropout: 165mV at 100mA
- ◆ High output accuracy:
 - 1.5% initial accuracy
 - 3.0% over temperature
- ◆ Low ground current 95 μA
- ◆ TTL logic-controlled enable input
- ◆ Zero off-mode current
- ◆ Thermal shutdown and current limit protection

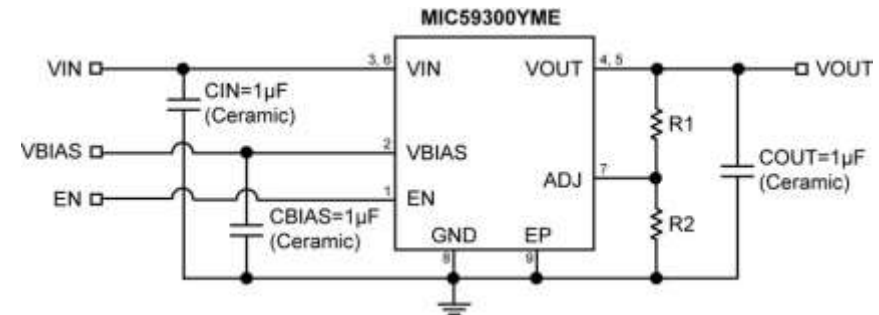




MIC59300

Ultra High Speed 3A LDO

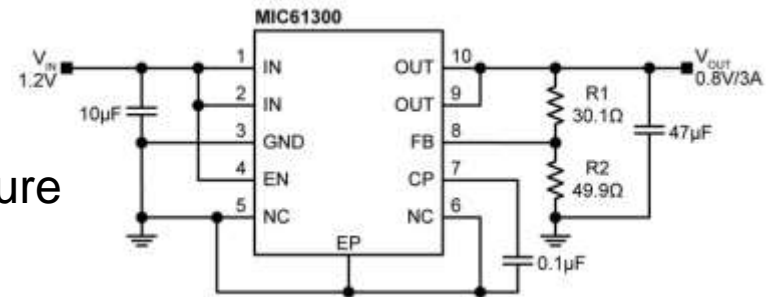
- ◆ Input voltage range:
 - $V_{IN} = 1.0V$ to $3.8V$
 - $V_{BIAS} = 3.0V$ to $5.5V$
- ◆ Stable with $1\mu F$ ceramic capacitor
- ◆ $\pm 1\%$ initial tolerance
- ◆ Maximum dropout voltage of $500mV$ over temperature
- ◆ Adjustable output voltage down to $0.5V$
- ◆ Ultra-fast transient response
- ◆ Logic controlled shutdown option
- ◆ Thermal shutdown and current limit protection
- ◆ Junction temperature range: $-40^{\circ}C$ to $+125^{\circ}C$
- ◆ TO-263 and 8-pin ePad SOIC
- ◆ Pin compatible upgrade to MIC49300



MIC61300

Low Input Voltage, Single-Supply High-Current LDO

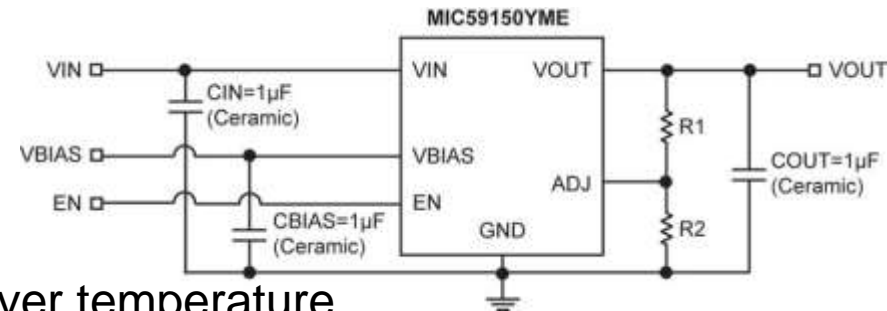
- ◆ Single V_{IN} rail: 1.1V to 3.6V
- ◆ Soft-start control via external capacitor
- ◆ Typical dropout of 150mV at room temperature
- ◆ Output voltage adjustable down to 0.5V
- ◆ Soft-start control via external capacitor
- ◆ Excellent line and load regulation
- ◆ Logic controlled shutdown
- ◆ Thermal shutdown and current limit protection
- ◆ 10-pin 3mm x 3mm MLF[®] package
- ◆ 10-pin ePad MSOP package
- ◆ Junction temperature range from - 40°C to +125°C
- ◆ Maximum dropout of 350mV at full load over temperature
- ◆ Soft-start control via external capacitor



MIC59150

Ultra High Speed 1.5A LDO

- ◆ Input voltage range:
 - $V_{IN} = 1.0V$ to $3.8V$
 - $V_{BIAS} = 3.0V$ to $5.5V$
- ◆ Stable with $1\mu F$ ceramic capacitor
- ◆ Maximum dropout voltage of 250mV over temperature
- ◆ Adjustable output voltage down to 0.5V
- ◆ Ultra fast transient response
- ◆ Excellent line and load regulation specifications
- ◆ Logic controlled shutdown option
- ◆ Thermal shutdown and current limit protection
- ◆ Junction temperature range: $-40^{\circ}C$ to $+125^{\circ}C$
- ◆ 8-pin EPAD SOIC

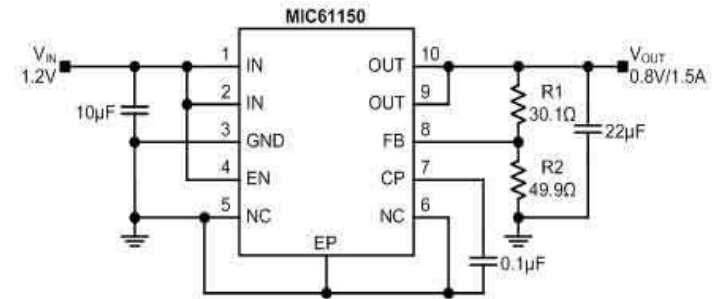




MIC61150

Low Input Voltage, Single-Supply High-Current LDO

- ◆ Single V_{IN} rail: 1.1V to 3.6V
- ◆ Typical dropout of 75mV at room temperature
- ◆ C_{OUT} as low as 22 μ F (ceramic capacitor)
- ◆ Output voltage adjustable down to 0.5V
- ◆ Soft-start control via external capacitor
- ◆ Excellent line and load regulation
- ◆ Logic controlled shutdown
- ◆ Thermal shutdown and current limit protection
- ◆ 10-pin 3mm x 3mm MLF[®] package
- ◆ 10-pin ePad MSOP package
- ◆ Output voltage accuracy: $\pm 2.5\%$ over temperature
- ◆ Maximum dropout of 200mV at full load over temperature
- ◆ Junction temperature range from -40°C to +125°C

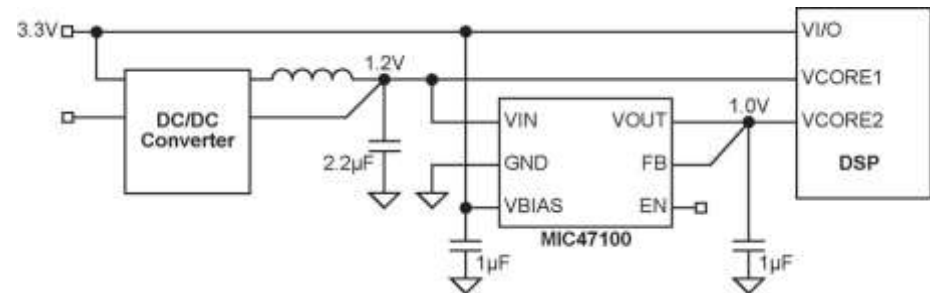




MIC47100

1A High Speed Low V_{IN} LDO

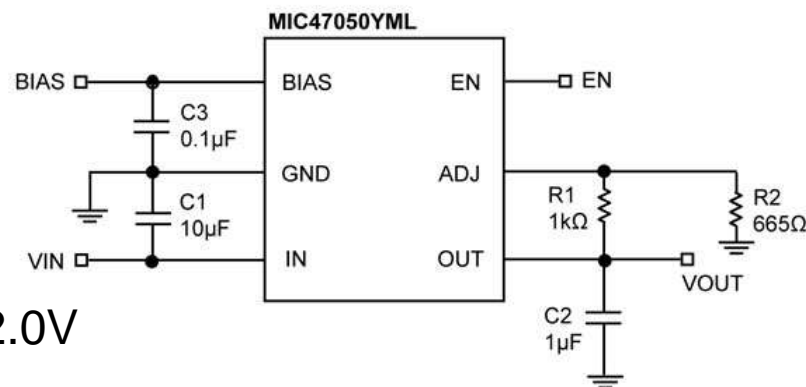
- ◆ Operating voltage range:
 - Input Supply: 1.0V to 3.6V
 - Bias Supply: 2.3V to 5.5V
- ◆ 0.8V to 2.0V output voltage range
- ◆ PSRR >50dB at 100kHz
- ◆ Stable with a 1 μ F ceramic output capacitor
- ◆ Low dropout voltage of 80mV at 1A
- ◆ High output voltage accuracy:
 - $\pm 1.5\%$ initial accuracy
 - $\pm 2\%$ over temperature
- ◆ UVLO on both supply voltages for easy turn-on
- ◆ ePad MSOP-8 -- small form factor power package
- ◆ Thermally enhanced 2mm x 2mm MLF[®] -- smallest solution



MIC47050

500mA ULDO with Low Input and Low Output Voltage

- ◆ Input voltage range: 1.0V to 3.6V
- ◆ Stable with 1 μ F ceramic output capacitor
- ◆ $\pm 1.5\%$ initial output voltage accuracy
- ◆ Bias supply voltage range: 2.3V to 5.5V
- ◆ Adjustable output voltage range: 0.4V to 2.0V
- ◆ Logic-level enable input
- ◆ 400mA maximum output current per LDO
- ◆ Very fast transient response
- ◆ UVLO on both supply packages
- ◆ Thermally enhanced 2mm x 2mm MLF[®] and Thin MLF[®] packages
- ◆ Junction temperature range of -40°C to +125°C
- ◆ Low dropout voltage ULDO[™]: 44mV at 500mA

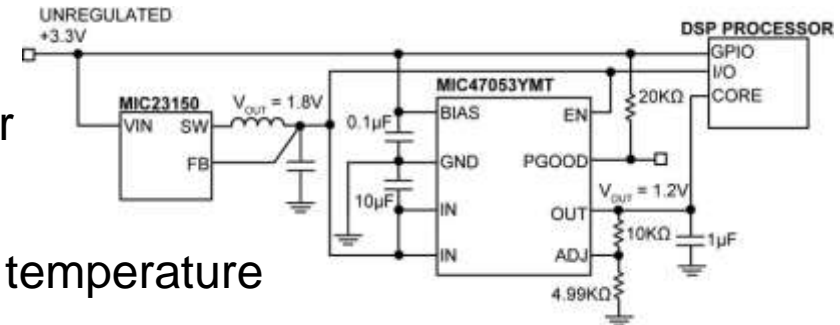




MIC47053

500mA Micropower ULDO™ Linear Regulator

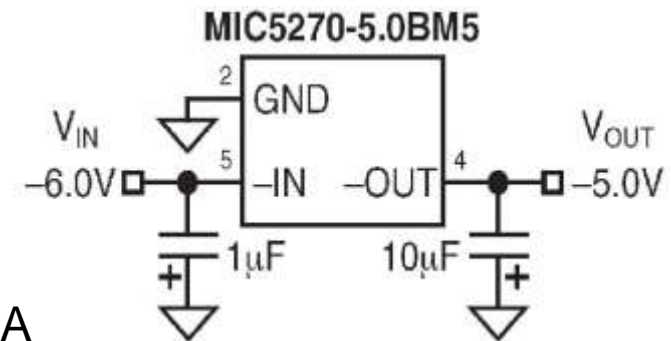
- ◆ Input voltage range: 1.0V to 3.6V
- ◆ Stable with 1 μ F ceramic output capacitor
- ◆ Low dropout voltage: 49mV at 500mA
- ◆ $\pm 2\%$ initial output voltage accuracy over temperature
- ◆ Bias supply voltage range: 2.3V to 5.5V
- ◆ Adjustable output voltage range down to 0.4V
- ◆ Logic-level enable input
- ◆ UVLO on both supply voltages
- ◆ High bandwidth - very fast transient response
- ◆ Low shutdown current: 0.1 μ A typical
- ◆ Thermally enhanced 2mm x 2mm Thin DFN package
- ◆ Junction temperature range of -40°C to +125°C



MIC5270

μ Cap Negative Low-Dropout Regulator

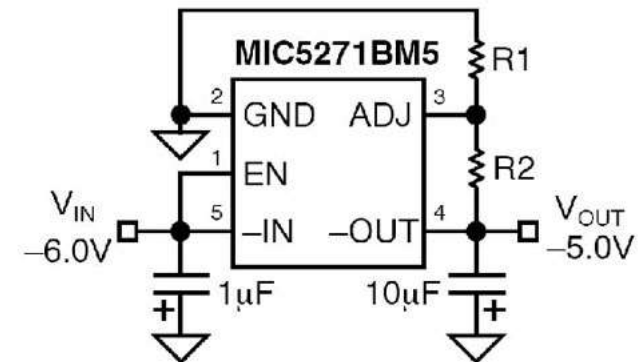
- ◆ Stable with ceramic or tantalum capacitor
- ◆ Low dropout voltage: 500mV at 100mA
- ◆ Tight initial accuracy: $\pm 2\%$
- ◆ Tight load and line regulation
- ◆ Low ground current: 35 μ A at load equals 100 μ A
- ◆ Thermal shutdown
- ◆ Current limiting
- ◆ IttyBitty® SOT-23-5 packaging



MIC5271

µCap Negative Low-Dropout Regulator

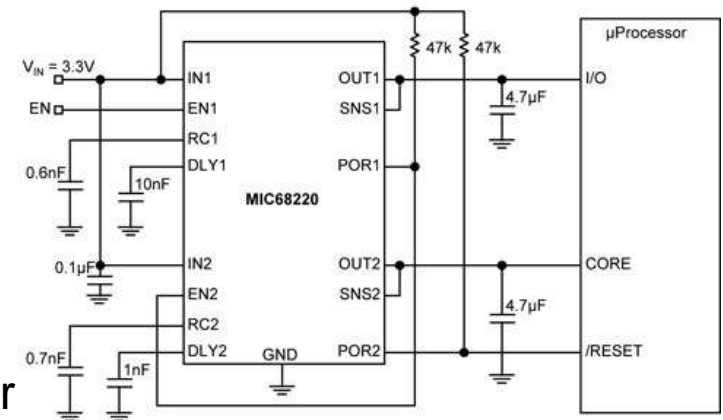
- ◆ Stable with ceramic or tantalum capacitor
- ◆ Positive and negative enable thresholds
- ◆ Low dropout voltage: 500mV at 100mA
- ◆ Low ground current: 35µA at load equals 100µA
- ◆ Tight initial accuracy: ±2%
- ◆ Tight load and line regulation
- ◆ Thermal shutdown
- ◆ Current limiting
- ◆ IttyBitty® SOT-23-5 packaging
- ◆ Zero off-mode current



MIC68220

Dual 2A LDO Regulator

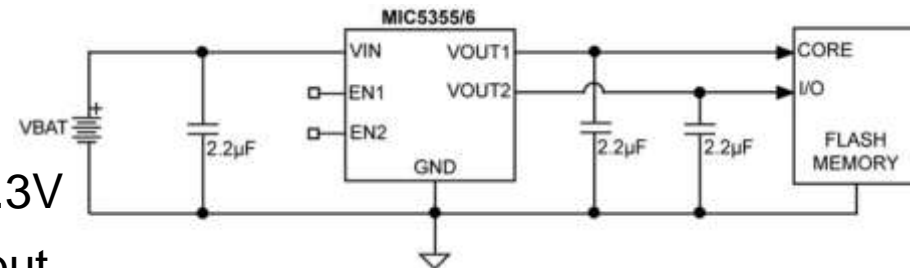
- ◆ Stable with 4.7 μ F ceramic output capacitor
- ◆ Input voltage range: 1.65V to 5.5V
- ◆ $\pm 1.0\%$ initial output tolerance
- ◆ 2A maximum output current - peak start up
- ◆ 1A Continuous operating current
- ◆ Programmable Ramp Control™ for in-rush current of the output voltage on Turn-On and Turn-Off
- ◆ Power-on Reset (POR) supervisor with programmable delay time
- ◆ Single Master can control multiple Slave regulators with tracking output voltages
- ◆ Tiny 4mm x 5mm MLF® package
- ◆ Maximum dropout ($V_{IN} - V_{OUT}$) of 500mV over temperature at 1A output current
- ◆ Fixed and adjustable output voltages
- ◆ Thermal shutdown and current limit protection



MIC5355

Dual 500mA μ Cap Low Dropout, Micropower Linear Regulator

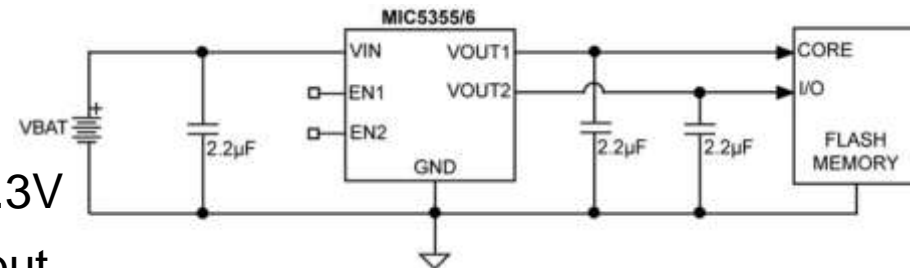
- ◆ 2.5V to 5.5V input voltage range
- ◆ 2% initial output accuracy
- ◆ Wide output voltage range: 1.0V to 3.3V
- ◆ Low quiescent current: 38 μ A per output
- ◆ Very low quiescent current in shutdown: <1 μ A typical
- ◆ μ Cap stable with 2.2 μ F ceramic capacitor
- ◆ Low dropout voltage: 350mV at 500mA
- ◆ Excellent load/line transient response
- ◆ Independent logic controlled enable pins
- ◆ Output discharge circuit (MIC5356)
- ◆ Current and thermal limit protection
- ◆ Power 8-pin ePad MSOP package



MIC5356

Dual 500mA μ Cap Low Dropout, Micropower Linear Regulator

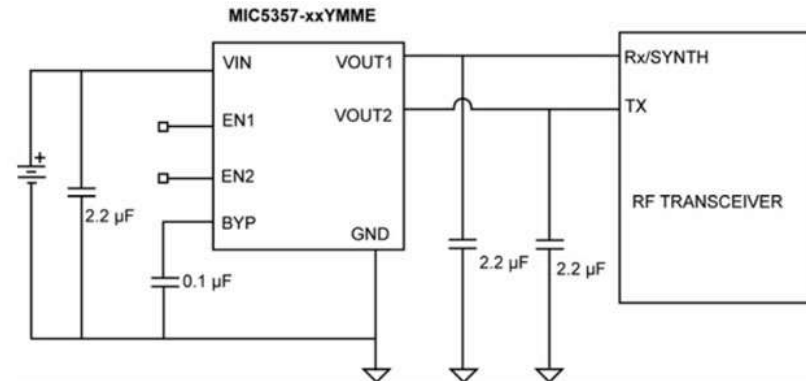
- ◆ 2.5V to 5.5V input voltage range
- ◆ 2% initial output accuracy
- ◆ Wide output voltage range: 1.0V to 3.3V
- ◆ Low quiescent current: 38 μ A per output
- ◆ Very low quiescent current in shutdown: <1 μ A typical
- ◆ μ Cap stable with 2.2 μ F ceramic capacitor
- ◆ Low dropout voltage: 350mV at 500mA
- ◆ Excellent load/line transient response
- ◆ Independent logic controlled enable pins
- ◆ Output discharge circuit (MIC5356)
- ◆ Current and thermal limit protection
- ◆ Power 8-pin ePad MSOP package



MIC5357

High Performance, Low Noise Dual 500mA ULDO

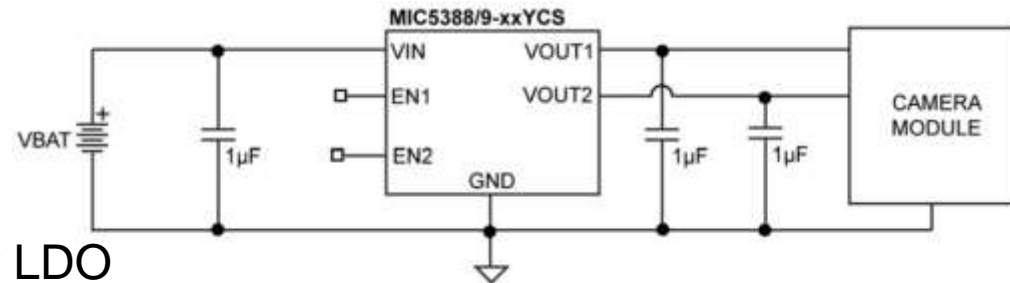
- ◆ 2.6V to 5.5V input voltage range
- ◆ Ultra-low output noise: $51\mu\text{V}_{\text{rms}}$
- ◆ $\pm 2\%$ initial output accuracy
- ◆ Small 8-pin ePad MSOP package
- ◆ Excellent Load/Line transient response
- ◆ Ultra-low dropout voltage: 130mV @ 500mA
- ◆ Fast start up time: 38 μs
- ◆ μCap stable with 2.2 μF ceramic capacitors
- ◆ Thermal shutdown protection
- ◆ Low quiescent current: 160 μA with both outputs at maximum load



MIC5388/9

Dual 200mA Peak LDO in Wafer Level Chip Scale Package

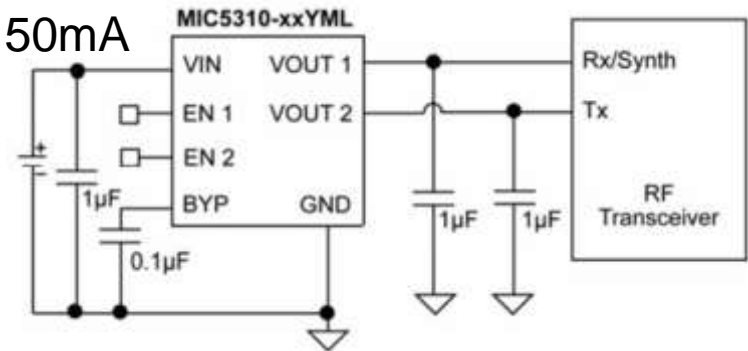
- ◆ 2.5V to 5.5V input voltage range
- ◆ Independent enable pins
- ◆ High output accuracy: $\pm 2\%$
- ◆ Low quiescent current: 32 μ A per LDO
- ◆ Stable with 1 μ F ceramic output capacitors
- ◆ Two 200mA peak output current LDOs
- ◆ Low dropout voltage: 175mV at 150mA
- ◆ Output discharge circuit (MIC5389)
- ◆ Thermal shutdown protection
- ◆ Current limit protection
- ◆ 6-bump 1.5mm x 1.0mm WLCSP package



MIC5310

Dual, 150mA μ Cap in 2mm x 2mm MLF[®]

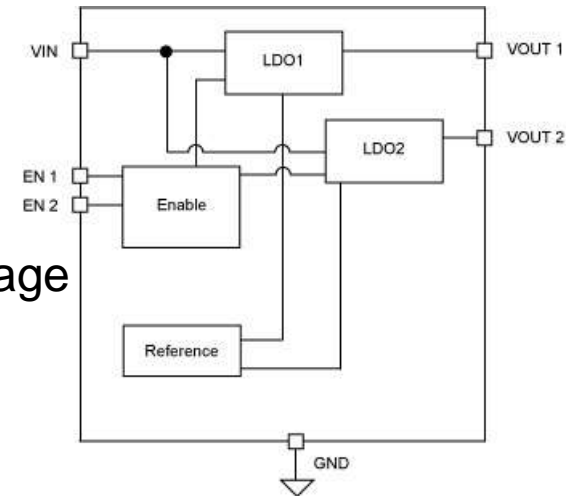
- ◆ Ultra-low dropout voltage ULDO 35mV @ 150mA
- ◆ High PSRR: >70dB @ 1KHz
- ◆ Ultra-low output noise: $30\mu\text{V}_{\text{rms}}$
- ◆ $\pm 2\%$ initial output accuracy
- ◆ 2.3V to 5.5V input voltage range
- ◆ Tiny 8-pin 2mm x 2mm MLF[®] leadless package
- ◆ Excellent load/line transient response
- ◆ Fast start-up time: 30 μs
- ◆ μ Cap stable with 1 μF ceramic capacitor
- ◆ Thermal shutdown protection
- ◆ Low quiescent current: 75 μA per output
- ◆ Current limit protection



MIC5320

Dual, High Performance 150mA μ Cap ULDO

- ◆ 2.3V to 5.5V input voltage range
- ◆ Ultra-low dropout voltage ULDO: 35mV @ 150mA
- ◆ Independent enable pins
- ◆ Tiny 6-pin 1.6mm x 1.6mm Thin MLF[®] leadless package
- ◆ Low cost TSOT-23-6 package
- ◆ PSRR: >65dB on each LDO
- ◆ 150mA output current per LDO
- ◆ μ Cap stable with 1 μ F ceramic capacitor
- ◆ Low quiescent current: 85 μ A per output
- ◆ Fast turn-on time: 30 μ s
- ◆ Thermal shutdown protection
- ◆ Current limit protection

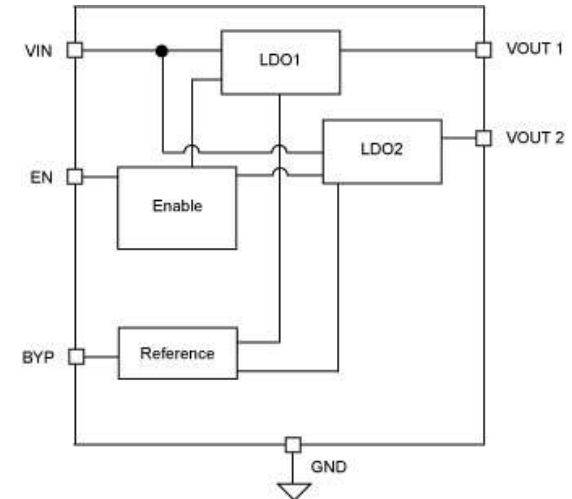




MIC5321

Dual, High Performance 150mA μ Cap ULDO

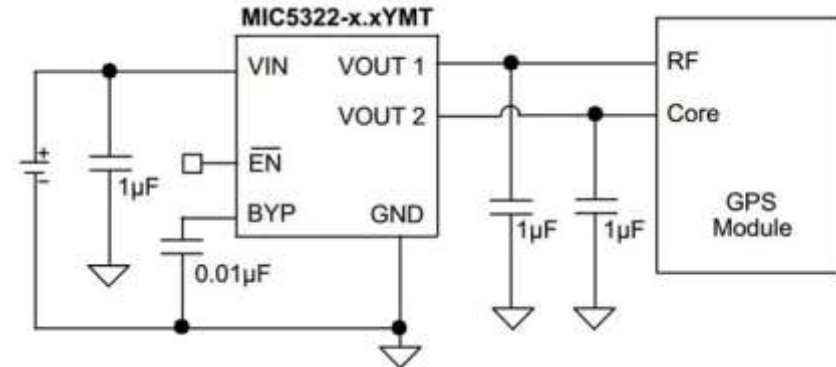
- ◆ 2.3V to 5.5V input voltage range
- ◆ Ultra-low dropout voltage ULDO: 35mV @ 150mA
- ◆ Tiny 6-pin 1.6mm x 1.6mm MLF[®] leadless package
- ◆ Low cost TSOT-23-6 package
- ◆ Bypass pin for improved noise performance
- ◆ High PSRR: >75dB on each LDO
- ◆ Ultra low noise output: > 30 μ V_{rms}
- ◆ Dual 150mA outputs
- ◆ μ Cap stable with 1 μ F ceramic capacitor
- ◆ Low quiescent current: 150 μ A per output
- ◆ Fast turn-on time: 45 μ s
- ◆ Thermal shutdown protection
- ◆ Current limit protection



MIC5322

Dual, High Performance 150mA μ Cap ULDO

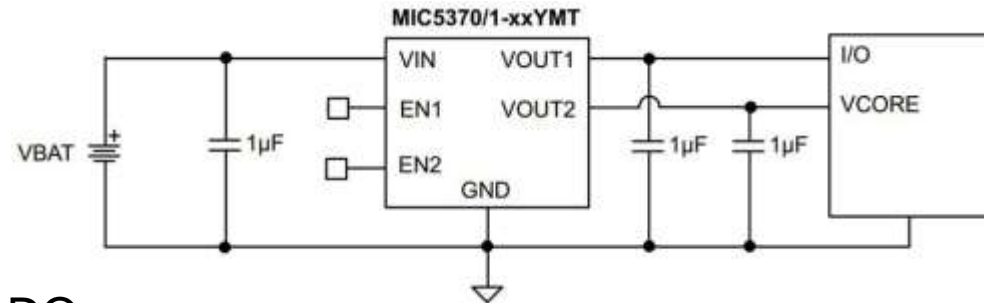
- ◆ 2.3V to 5.5V input voltage range
- ◆ Dual 150mA outputs
- ◆ μ Cap stable with 1 μ F ceramic capacitor
- ◆ Low quiescent current: 150 μ A
- ◆ Fast turn-on time: 45 μ s
- ◆ Ultra-low dropout voltage ULDO: 35mV @ 150mA
- ◆ Tiny 6-pin 1.6mm x 1.6mm Thin MLF[®] leadless package
- ◆ Bypass pin for improved noise performance
- ◆ High PSRR: >75dB on each LDO
- ◆ Ultra-low noise output: > 30 μ V_{rms}
- ◆ Thermal shutdown protection
- ◆ Current limit protection



MIC5370/1

High-Performance Dual 150mA LDO 1.6mm x 1.6mm Thin MLF®

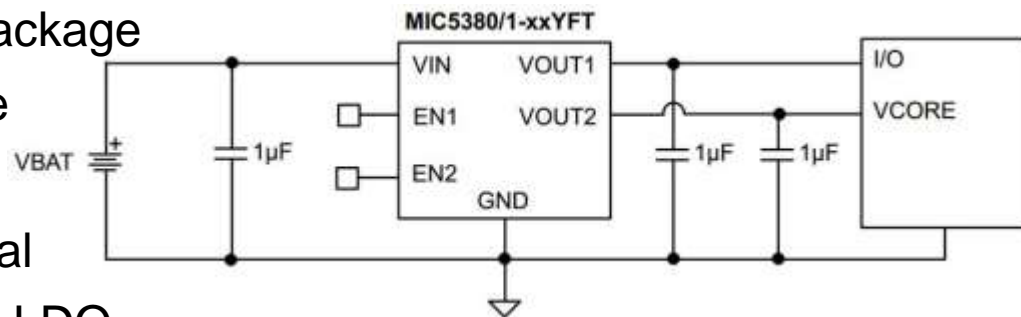
- ◆ 2.5V to 5.5V input voltage range
- ◆ Two 150mA output current LDOs
- ◆ High output accuracy
 - $\pm 2\%$ initial accuracy
- ◆ Low quiescent current 32 μ A per LDO
- ◆ Stable with 1 μ F ceramic output capacitors
- ◆ Independent enable pins
- ◆ Low dropout voltage: 155mV at 150mA
- ◆ Thermal shutdown protection
- ◆ Current limit protection
- ◆ Output discharge circuit (MIC5371)
- ◆ 6-pin 1.6mm x 1.6mm Thin MLF® package



MIC5380/1

High Performance Dual 150mA LDO 1mm x 1mm Thin MLF®

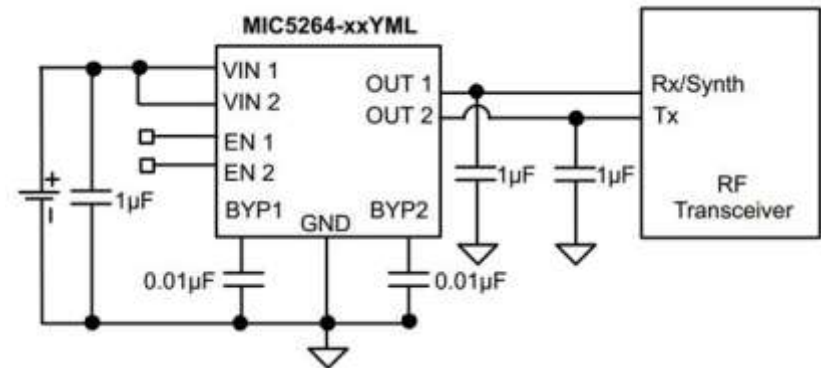
- ◆ 6-pin 1mm x 1mm Thin MLF® package
- ◆ 2.5V to 5.5V input voltage range
- ◆ 150mA output current per LDO
- ◆ High output accuracy $\pm 1\%$ typical
- ◆ Low quiescent current 32 μ A per LDO
- ◆ Stable with 0402 1 μ F ceramic output capacitors
- ◆ Low dropout voltage: 155mV at 150mA
- ◆ Output discharge circuit (MIC5381)
- ◆ Independent enable pins
- ◆ Thermal shutdown protection
- ◆ Current limit protection



MIC5264

150mA μ Cap Dual LDO Regulator

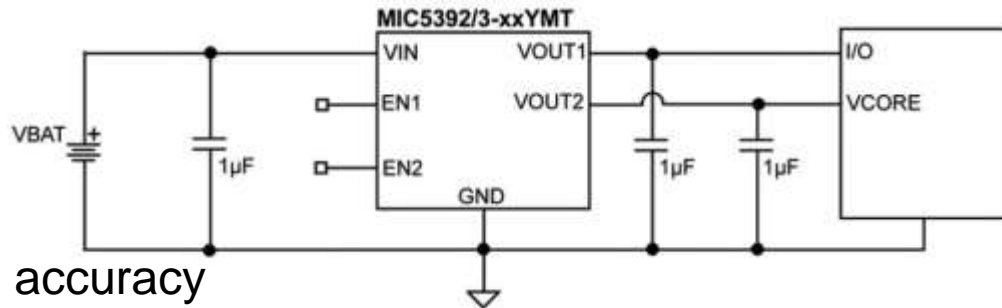
- ◆ 2.7V to 5.5V supply voltage
- ◆ Low 90 μ A quiescent current per LDO
- ◆ Tiny 2.5mm x 2.5mm MLF[®] package
- ◆ Low noise: 57 μ V_{rms}
- ◆ High PSRR: 70dB at 1kHz
- ◆ Low dropout voltage: 210mV at 150mA
- ◆ Stable with ceramic output capacitors
- ◆ Independent enable pins
- ◆ Fast transient response
- ◆ Active shutdown on both outputs



MIC5392/3

High-Performance Dual 150mA LDO

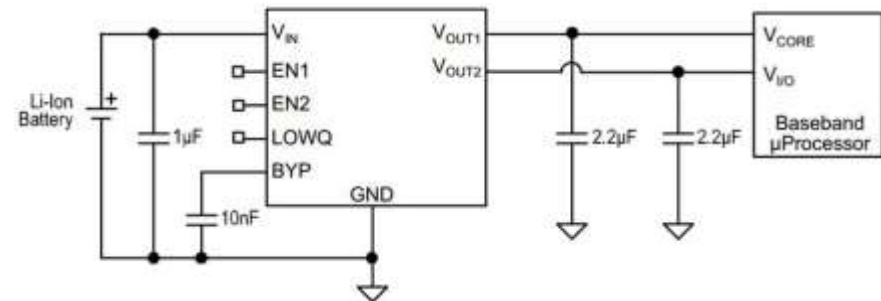
- ◆ 2.5V to 5.5V input voltage range
- ◆ Two 150mA output current LDOs
- ◆ Independent enable pins
- ◆ High output accuracy: $\pm 2\%$ initial accuracy
- ◆ Low quiescent current (32 μ A per LDO)
- ◆ Stable with 1 μ F ceramic output capacitors
- ◆ Low dropout voltage (155mV at 150mA)
- ◆ Thermal-shutdown protection
- ◆ Current-limit protection
- ◆ Internal 25 Ω output discharge circuit (MIC5393)
- ◆ Tiny 6-pin 1.2mm x 1.2mm Thin DFN package



MIC5311

LowQ® Dual μ Cap LDO in 3mm x 3mm MLF®

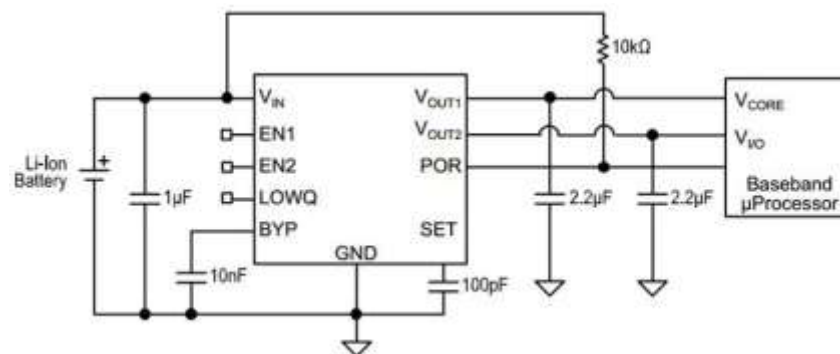
- ◆ Input voltage range: 2.25V to 5.5V
- ◆ LowQ® Mode
 - 7 μ A total quiescent current
 - 10mA output current capable LowQ® mode
 - Logic level control with external pin
- ◆ Stable with ceramic output capacitor
- ◆ 2 LDO outputs: 300mA each
- ◆ Tiny 10-pin 3mm x 3mm MLF® package
- ◆ Low dropout voltage of 60mV @ 150mA
- ◆ Ultra-low quiescent current of 28 μ A total in full current mode
- ◆ High output accuracy
 - $\pm 1.0\%$ initial accuracy
 - $\pm 2.0\%$ over temperature
- ◆ Thermal shutdown protection
- ◆ Current limit protection



MIC5312

LowQ® Dual μ Cap LDO w/Integrated POR in 3mm x 3mm MLF®

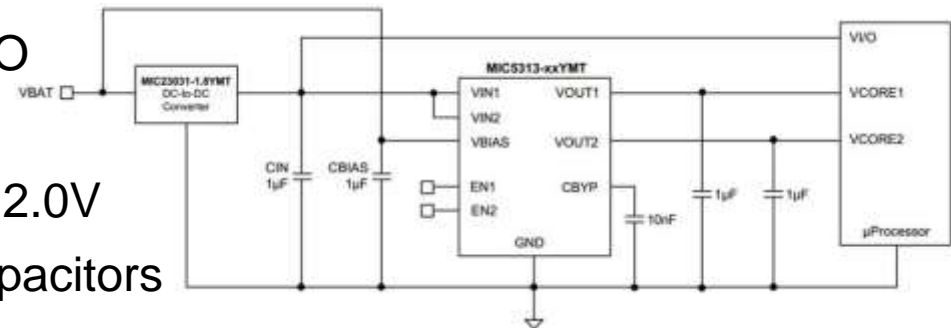
- ◆ Input voltage range: 2.25V to 5.5V
- ◆ LowQ® Mode
 - 7 μ A total quiescent current
 - 10mA output current capable LowQ® mode
 - Logic level control with external pin
- ◆ Stable with ceramic output capacitor
- ◆ 2 LDO outputs: 300mA each
- ◆ Integrated power-on reset (POR) with adjustable delay time
- ◆ Tiny 3mm x 3mm MLF®-10 package
- ◆ Low dropout voltage of 60mV @ 150mA
- ◆ Ultra-low quiescent current of 28 μ A total in full current mode
- ◆ High output accuracy
 - $\pm 1.0\%$ initial accuracy
 - $\pm 2.0\%$ over temperature
- ◆ Thermal shutdown protection



MIC5313

Low Voltage Dual 300mA LDO

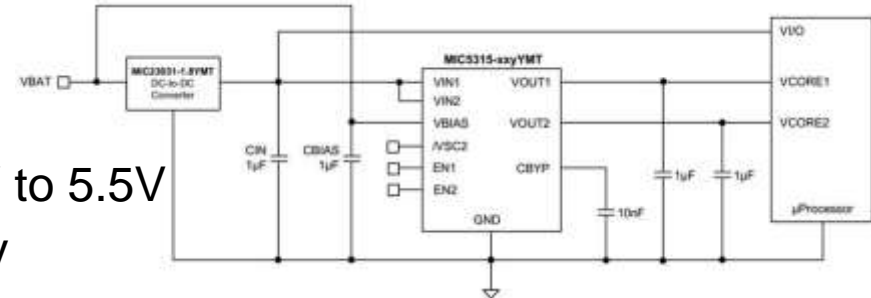
- ◆ 300mA output current for each LDO
- ◆ Very fast transient response
- ◆ Low output voltage range: 0.8V to 2.0V
- ◆ Stable with 1 μ F ceramic output capacitors
- ◆ Dual low voltage regulator inputs: 1.7V to 5.5V
- ◆ Ultra-low dropout voltage of 85mV @ 300mA
- ◆ Thermal shutdown and current limit protection
- ◆ Tiny 10-pin 2mm x 2mm Thin MLF[®] package



MIC5315

Low Voltage Dual 300mA LDO with Voltage Select

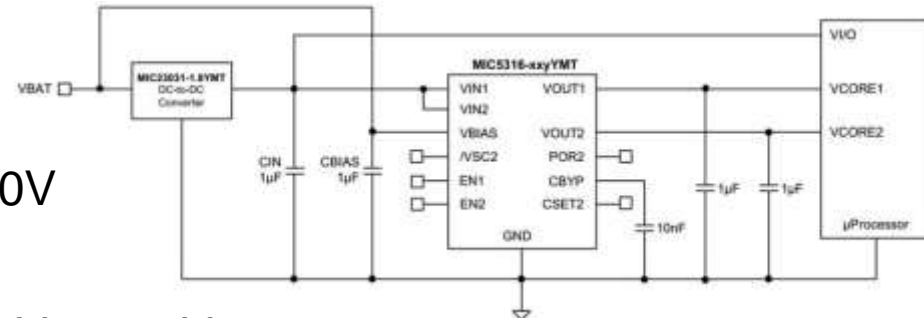
- ◆ 300mA output current for each LDO
- ◆ Voltage select function
- ◆ Dual low voltage regulator inputs: 1.7V to 5.5V
- ◆ Low output voltage range: 0.8V to 2.0V
- ◆ Ultra-low dropout voltage of 85mV @ 300mA
- ◆ Stable with 1 μ F ceramic output capacitors
- ◆ Very fast transient response
- ◆ Thermal shutdown and current limit protection
- ◆ Tiny 10-pin 2mm x 2mm Thin MLF[®] package



MIC5316

Low Voltage Dual 300mA LDO with Power on Reset and Voltage Select

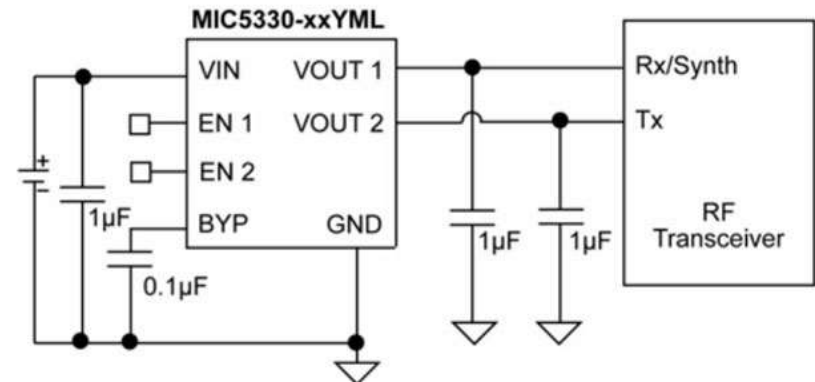
- ◆ 300mA output current for each LDO
- ◆ Voltage select function
- ◆ Low output voltage range: 0.8V to 2.0V
- ◆ Very fast transient response
- ◆ Dual low voltage regulator inputs: 1.7V to 5.5V
- ◆ Ultra-low dropout voltage of 85mV @ 300mA
- ◆ Power on Reset output with adjustable delay
- ◆ Stable with 1 μ F ceramic output capacitors
- ◆ Thermal shutdown and current limit protection
- ◆ Tiny 12-pin 2.5mm x 2.5mm Thin MLF[®] package



MIC5330

Dual, 300mA μ Cap in 2mm x 2mm MLF®

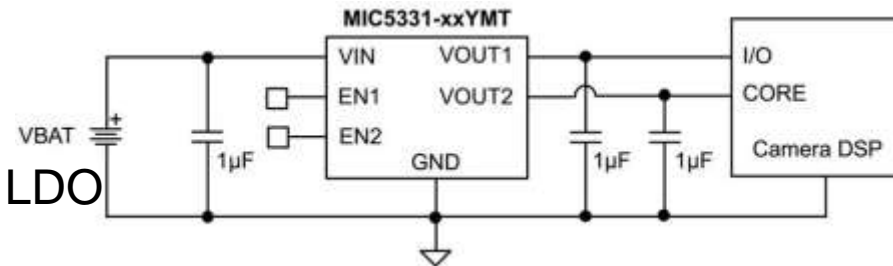
- ◆ 2.3V to 5.5V input voltage range
- ◆ High PSRR: >70dB @ 1KHz
- ◆ Ultra-low output noise: $30\mu\text{V}_{\text{rms}}$
- ◆ $\pm 2\%$ initial output accuracy
- ◆ Fast start-up time: $30\mu\text{s}$
- ◆ Tiny 8-pin 2mm x 2mm MLF® leadless package
- ◆ Excellent Load/Line transient response
- ◆ Ultra-low dropout voltage ULDO 75mV @ 300mA
- ◆ 300mA output current per LDO
- ◆ Thermal shutdown protection
- ◆ Low quiescent current: $75\mu\text{A}$ per output
- ◆ Current limit protection



MIC5331

Micro-Power High Performance Dual 300mA ULDO

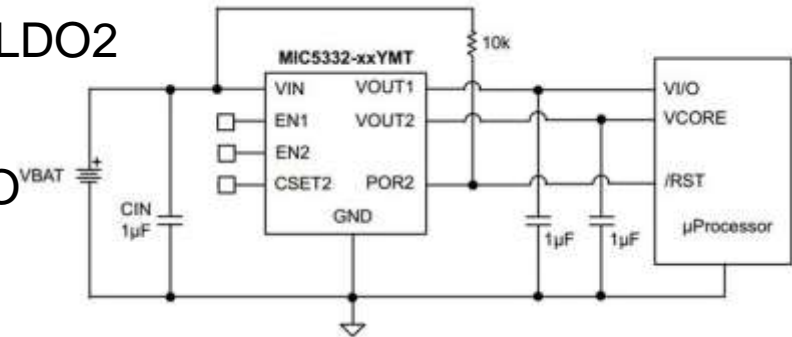
- ◆ 2.3V to 5.5V input voltage range
- ◆ 300mA output current per LDO
- ◆ Very low quiescent current: 25 μ A per LDO
- ◆ High PSRR: >65dB on each LDO
- ◆ Stable with 1 μ F ceramic output capacitors
- ◆ Tiny 8-pin 2mm x 2mm Thin MLF[®] package
- ◆ Ultra-low dropout voltage: 120mV @ 300mA
- ◆ Low output voltage noise: 50 μ V_{rms}
- ◆ Thermal shutdown protection
- ◆ Current limit protection



MIC5332

Micro-Power High Performance Dual 300mA ULDO

- ◆ POR output with programmable delay on LDO2
- ◆ 300mA output current per LDO
- ◆ Very low quiescent current: 25 μ A per LDO
- ◆ High PSRR: >65dB on each LDO
- ◆ 2.3V to 5.5V input voltage range
- ◆ Stable with 1 μ F ceramic output capacitors
- ◆ Tiny 8-pin 2mm x 2mm Thin MLF[®] package
- ◆ Ultra-low dropout voltage: 120mV @ 300mA
- ◆ Low output voltage noise: 50 μ V_{rms}
- ◆ Thermal shutdown protection
- ◆ Current limit protection

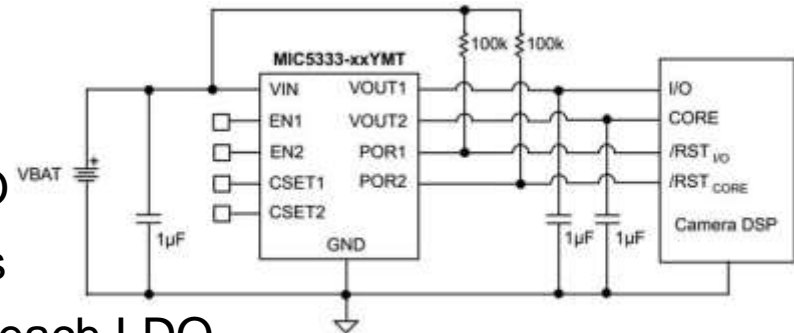




MIC5333

Micro-Power High Performance Dual 300mA ULDO with Dual POR

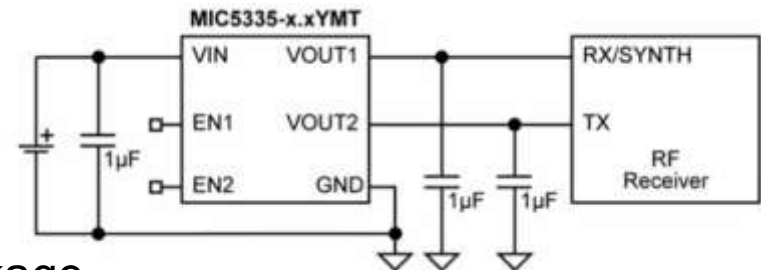
- ◆ 2.3V to 5.5V input voltage range
- ◆ 300mA output current per LDO
- ◆ Very low quiescent current: 25 μ A per LDO
- ◆ Stable with 1 μ F ceramic output capacitors
- ◆ POR output with programmable delay for each LDO
- ◆ High PSRR: >65dB on each LDO
- ◆ Tiny 10-pin 2.5mm x 2.5mm Thin MLF[®] package
- ◆ Ultra-low dropout voltage: 120mV @ 300mA
- ◆ Low output voltage noise: 50 μ V_{rms}
- ◆ Thermal shutdown protection
- ◆ Current limit protection



MIC5335

Dual, High Performance 300mA μ Cap ULDO

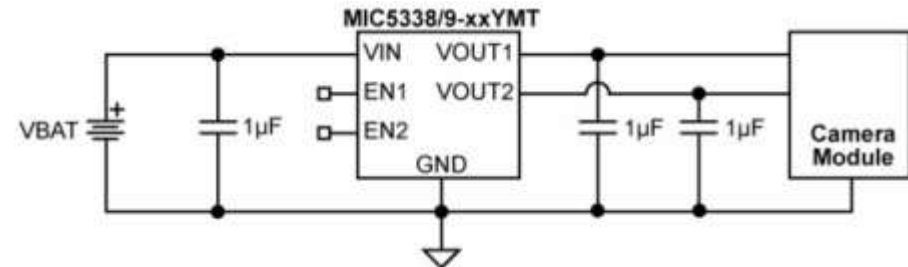
- ◆ 2.3V to 5.5V input voltage range
- ◆ Ultra-low dropout voltage: 75mV at 300mA
- ◆ Independent enable pins
- ◆ Ultra Thin 1.6mm x 1.6mm 6-pin MLF[®] package
- ◆ High PSRR: >65dB
- ◆ 300mA output current per LDO
- ◆ μ Cap Stable with 1 μ F ceramic capacitor
- ◆ Low quiescent current: 90 μ A/LDO
- ◆ Fast turn-on time: 30 μ s
- ◆ Low output voltage noise: 24 μ V_{rms}
- ◆ Thermal shutdown protection
- ◆ Current limit protection



MIC5338/9

Dual 300mA μ Cap LDO in 1.6mm x 1.6mm Thin MLF®

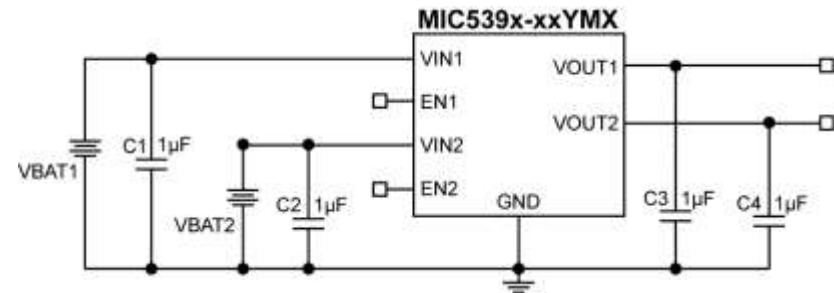
- ◆ 2.5V to 5.5V input voltage range
- ◆ Two 300mA outputs
- ◆ High output accuracy: 2%
- ◆ Low quiescent current: 70 μ A total
- ◆ Stable with ceramic output capacitors
- ◆ Independent enable pins
- ◆ Low dropout voltage: 220mV at 300mA
- ◆ Low output noise
- ◆ Thermal shutdown protection
- ◆ Current limit protection
- ◆ Output discharge circuit (MIC5339)
- ◆ 6-pin 1.6mm x 1.6mm Thin MLF® package



MIC5396/7/8/9

Low-Power Dual 300mA LDO in 1.2mm x 1.6mm Extra Thin DFN

- ◆ 2.5V to 5.5V input voltage range
- ◆ Independent power inputs
- ◆ Output voltage range from 1V to 3.3V
- ◆ Two 300mA outputs
- ◆ High output accuracy ($\pm 2\%$)
- ◆ Low quiescent current: 37 μ A typical/LDO
- ◆ Stable with 1 μ F ceramic output capacitors
- ◆ Low dropout voltage (160mV at 300mA)
- ◆ Internal enable pull-down (MIC5398, MIC5399)
- ◆ Output discharge circuit (MIC5397, MIC5399)
- ◆ Thermal-shutdown protection
- ◆ Current-limit protection
- ◆ 8-pin 1.2mm x 1.6mm Extra Thin DFN package

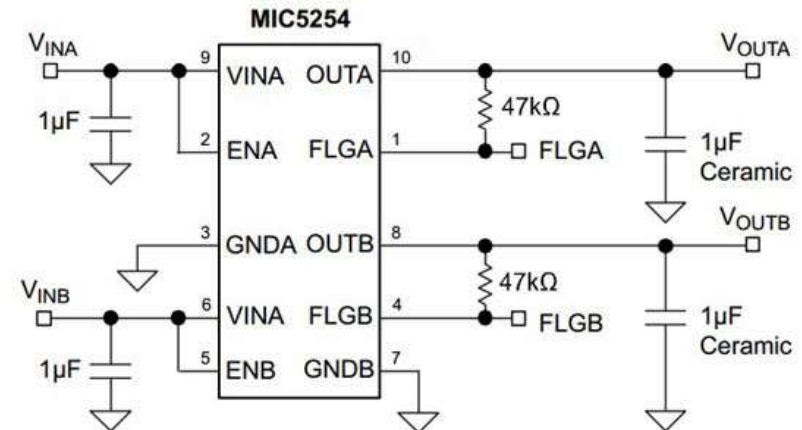




MIC5254

Dual 150mA μ Cap LDO with Error Flag Outputs

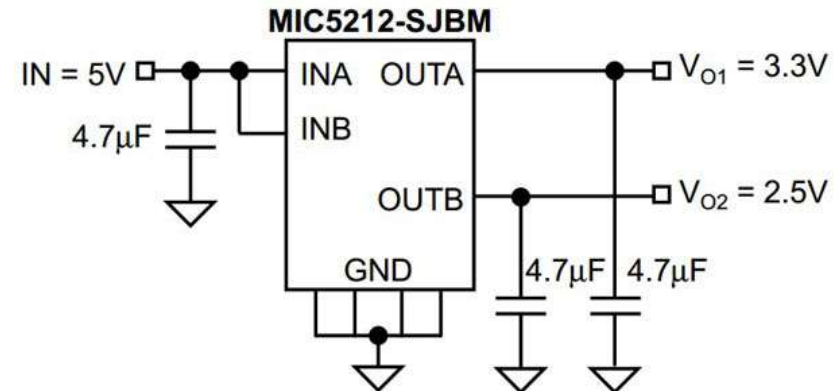
- ◆ Input voltage range: 2.7V to 6.0V
- ◆ Dual, independent 150mA LDOs
- ◆ Error flags indicate fault condition
- ◆ Stable with ceramic output capacitor
- ◆ Ultra-low dropout: 135mV @ 150mA
- ◆ High output accuracy:
 - 1.0% initial accuracy
 - 2.0% over temperature
- ◆ Low quiescent current: 90 μ A each LDO
- ◆ Tight load and line regulation
- ◆ Thermal shutdown and current limit protection
- ◆ Zero off-mode current
- ◆ TTL logic-controlled enable input
- ◆ MSOP-10 package



MIC5212

Dual 500mA LDO Regulator

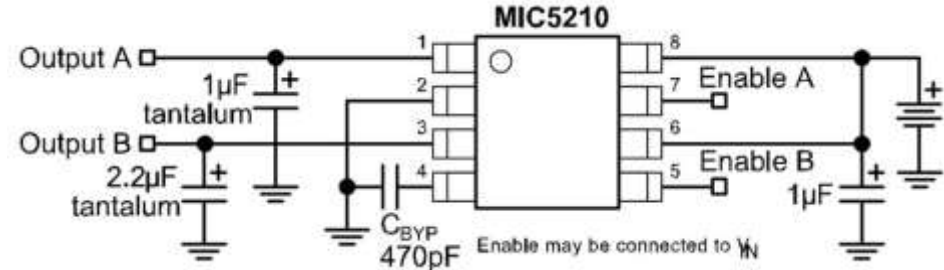
- ◆ Fused lead frame SOIC-8
- ◆ Up to 500mA per regulator output
- ◆ Low quiescent current
- ◆ Low dropout voltage
- ◆ Tight load and line regulation
- ◆ Low temperature coefficient
- ◆ Current and thermal limiting
- ◆ Reversed input polarity protection



MIC5210

Dual 150mA LDO Regulator

- ◆ Micrel Mini 8[®]; MSOP package
- ◆ Up to 150mA per regulator output
- ◆ Low quiescent current
- ◆ Low dropout voltage
- ◆ Wide selection of output voltages
- ◆ Tight load and line regulation
- ◆ Low temperature coefficient
- ◆ Current and thermal limiting
- ◆ Reversed input polarity protection
- ◆ Zero off-mode current
- ◆ Logic-controlled electronic enable

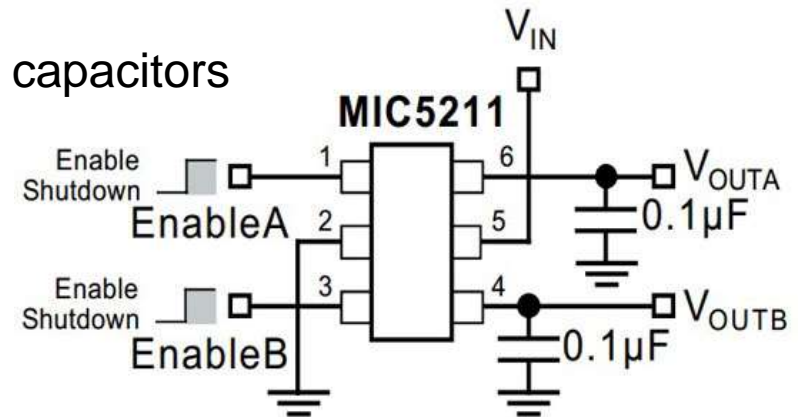




MIC5211

Dual μ Cap 80mA LDO Regulator

- ◆ Stable with low-value ceramic or tantalum capacitors
- ◆ Independent logic controls
- ◆ Low quiescent current
- ◆ Low dropout voltage
- ◆ Mixed voltages available
- ◆ Tight load and line regulation
- ◆ Low temperature coefficient
- ◆ Current and thermal limiting
- ◆ Reversed input polarity protection
- ◆ Zero off-mode current
- ◆ Dual regulator in tiny SOT-23 package
- ◆ 2.5V to 16V input range

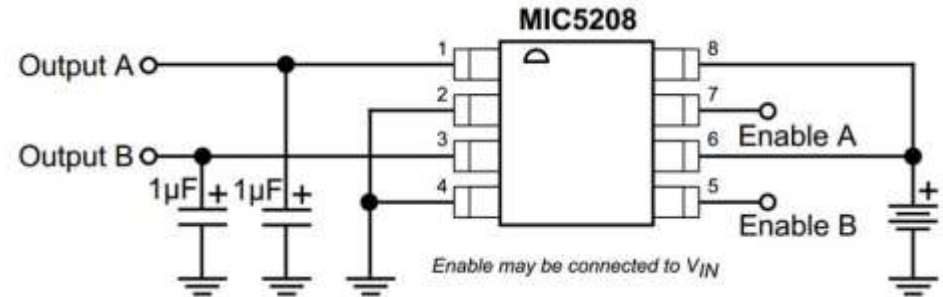




MIC5208

Dual 50mA LDO Regulator

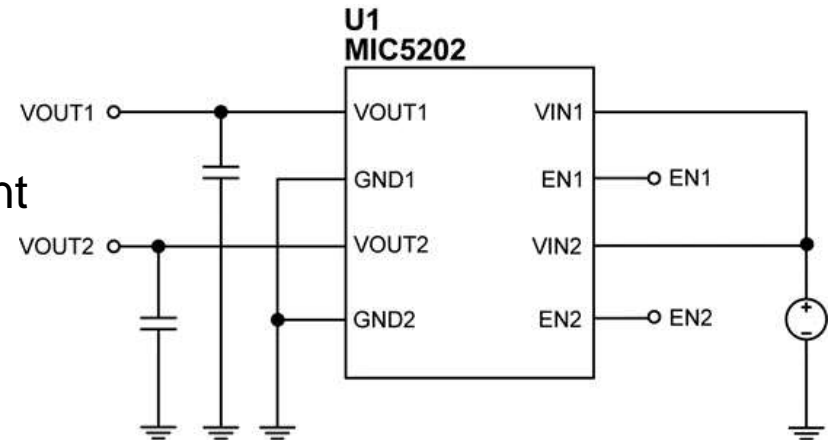
- ◆ Micrel Mini 8[®] MSOP package
- ◆ Guaranteed 50mA output
- ◆ Low quiescent current
- ◆ Low dropout voltage
- ◆ Wide selection of output voltages
- ◆ Tight load and line regulation
- ◆ Low temperature coefficient
- ◆ Current and thermal limiting
- ◆ Reversed input polarity protection
- ◆ Zero off-mode current
- ◆ Logic-controlled electronic enable



MIC5202

Dual 100mA Low-Dropout Regulator

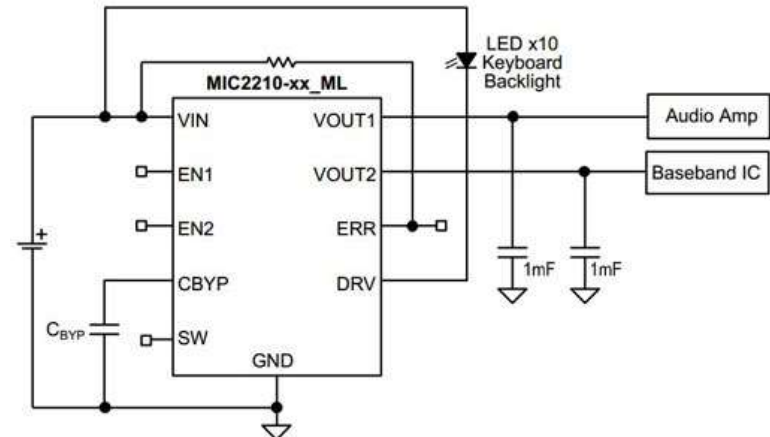
- ◆ High output voltage accuracy
- ◆ Variety of output voltages
- ◆ Up to 100mA of continuous output current
- ◆ Low ground current
- ◆ Low dropout voltage
- ◆ Excellent line and load regulations
- ◆ Extremely low temperature coefficient
- ◆ Current and thermal limit protections
- ◆ Reverse-battery protection
- ◆ Zero off-mode current
- ◆ Logic-controlled electronic shutdown
- ◆ 8-pin SOIC package



MIC2210

Dual μ Cap LDO with Open-Drain Driver

- ◆ Input voltage range: 2.25V to 5.5V
- ◆ Stable with ceramic output capacitor
- ◆ 2 LDO outputs
- ◆ Output 1: 150mA output current
- ◆ Output 2: 300mA output current
- ◆ 1 Open-drain driver
- ◆ Low dropout voltage of 80mV @ 100mA
- ◆ Ultra-low quiescent current of 48 μ A
- ◆ High output accuracy:
 - $\pm 1.0\%$ initial accuracy
 - $\pm 2.0\%$ over temperature
- ◆ Thermal shutdown protection
- ◆ Current limit protection
- ◆ Tiny 10-pin 3mm x 3mm MLF[®] package

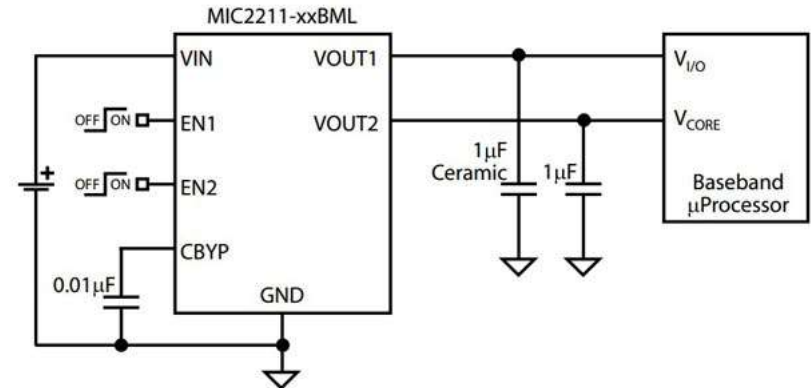




MIC2211

Dual μ Cap LDO in 3mm x 3mm MLF[®]

- ◆ Input voltage range: 2.25V to 5.5V
- ◆ Stable with ceramic output capacitor
- ◆ 2 LDO outputs
 - Output 1: 150mA output current
 - Output 2: 300mA output current
- ◆ Low dropout voltage of 80mV @ 100mA
- ◆ Ultra-low quiescent current of 48 μ A total (24 μ A/LDO)
- ◆ High output accuracy:
 - $\pm 1.0\%$ initial accuracy
 - $\pm 2.0\%$ over temperature
- ◆ Thermal shutdown protection
- ◆ Current limit protection
- ◆ Tiny 10-pin 3mm x 3mm MLF[®] package

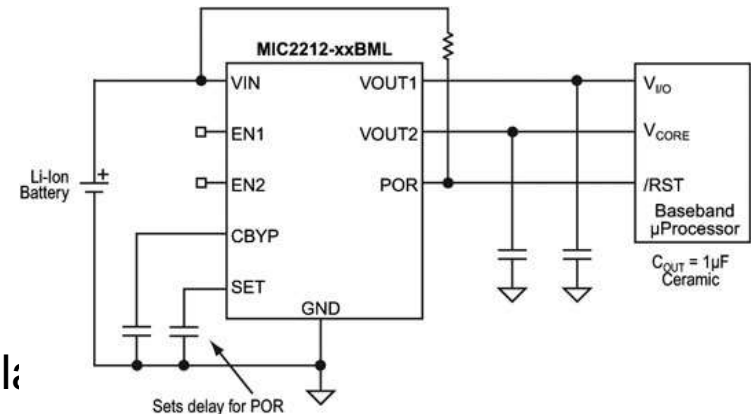




MIC2212

Dual μ Cap LDO and Power-On Reset

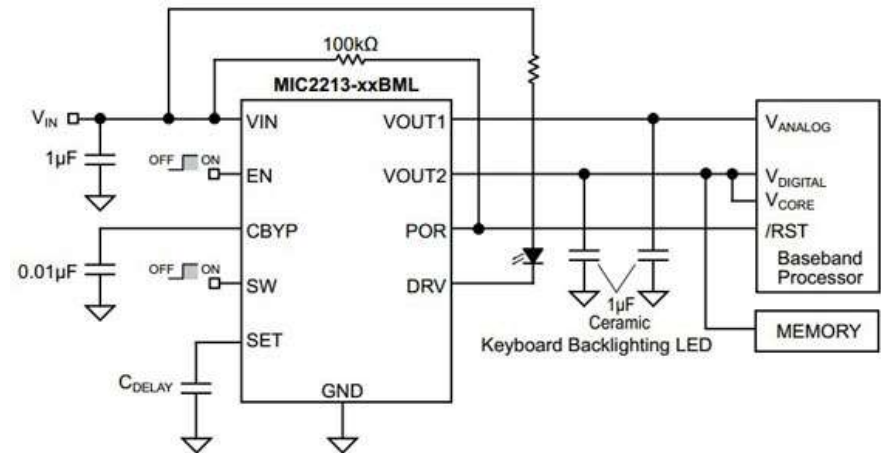
- ◆ Input voltage range: 2.25V to 5.5V
- ◆ Stable with ceramic output capacitor
- ◆ 2 LDO outputs
 - Output 1: 150mA output current
 - Output 2: 300mA output current
- ◆ Power-on reset function with adjustable delay
- ◆ Low dropout voltage of 80mV @ 100mA
- ◆ Ultra-low quiescent current of 48 μ A
- ◆ High output accuracy:
 - $\pm 1.0\%$ initial accuracy
 - $\pm 2.0\%$ over temperature
- ◆ Thermal shutdown protection
- ◆ Current limit protection
- ◆ Tiny 10-pin 3mm x 3mm MLF[®] package



MIC2213

Sequenced Portable Power Management IC

- ◆ 2 LDO outputs
 - Output 1: 150mA output current
 - Output 2: 300mA output current
- ◆ 1 Open-drain driver
- ◆ Sequencing between outputs 1 and 2
- ◆ Input voltage range: 2.25V to 5.5V
- ◆ Stable with ceramic output capacitor
- ◆ Power-on reset function with adjustable delay time
- ◆ Low dropout voltage of 80mV @ 100mA
- ◆ Ultra-low quiescent current of 48μA
- ◆ High output accuracy:
 - ±1.0% initial accuracy
 - ±2.0% over temperature
- ◆ Thermal shutdown protection
- ◆ Tiny 3mm x 3mm MLF[®]-10 package

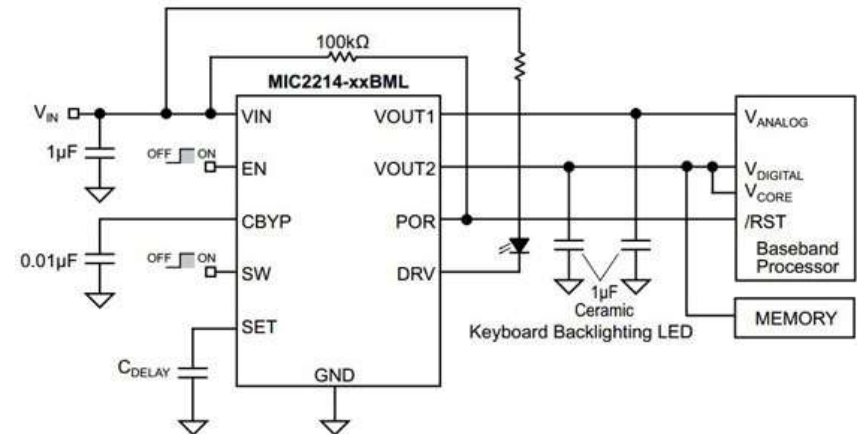


MIC2214

Portable Power Management IC



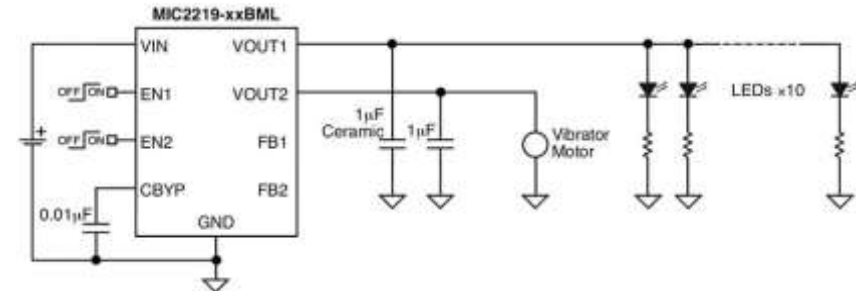
- ◆ Input voltage range: 2.25V to 5.5V
- ◆ Stable with ceramic output capacitor
- ◆ 2 LDO outputs
 - Output 1: 150mA output current
 - Output 2: 300mA output current
- ◆ 1 Open-drain driver
- ◆ Power-on reset function with adjustable delay time
- ◆ Low dropout voltage of 80mV @ 100mA
- ◆ Ultra-low quiescent current of 48μA
- ◆ High output accuracy:
 - ±1.0% initial accuracy
 - ±2.0% over temperature
- ◆ Thermal shutdown protection
- ◆ Current limit protection
- ◆ Tiny 3mm x 3mm MLF[®]-10 package



MIC2219

Dynamically Adjustable Dual μ Cap LDO

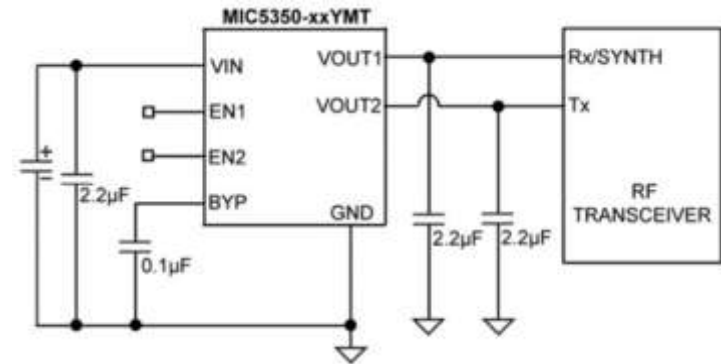
- ◆ Input voltage range: 2.25V to 5.5V
- ◆ Stable with ceramic output capacitor
- ◆ 2 LDO outputs
 - Output 1: 150mA output current
 - Output 2: 300mA output current
- ◆ Feedback pins externally accessible
- ◆ Low dropout voltage of 80mV @ 100mA
- ◆ Ultra-low quiescent current of 48 μ A total (24 μ A/LDO)
- ◆ High output accuracy:
 - $\pm 1.0\%$ initial accuracy
 - $\pm 2.0\%$ over temperature
- ◆ Thermal shutdown protection
- ◆ Current limit protection
- ◆ Tiny 10-pin 3mm x 3mm MLF[®] package



MIC5350

Dual 300mA/500mA LDO in 2mm x 2mm Thin MLF®

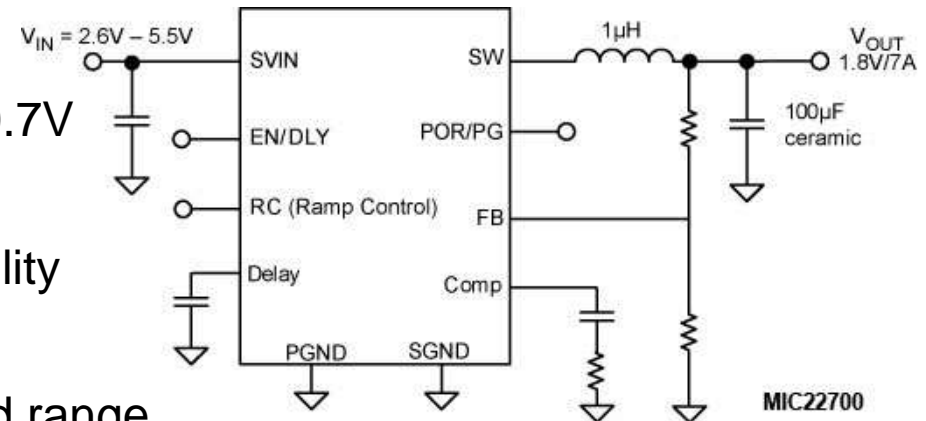
- ◆ 2.6V to 5.5V input voltage range
- ◆ Ultra-low output noise: $30\mu\text{V}_{\text{rms}}$
- ◆ $\pm 2\%$ initial output accuracy
- ◆ Excellent Load/Line transient response
- ◆ Fast start-up time: $30\mu\text{s}$
- ◆ Tiny 8-pin 2mm x 2mm Thin MLF® leadless package
- ◆ Ultra-low dropout voltage: 75mV @ 300mA and 125mV @ 500mA
- ◆ μCap stable with 2.2 μF ceramic capacitors
- ◆ Thermal shutdown protection
- ◆ Low quiescent current: 130 μA with both outputs at maximum load
- ◆ Current limit protection



MIC22700

1MHz 7A Integrated Switch High Efficiency Synchronous Buck Regulator

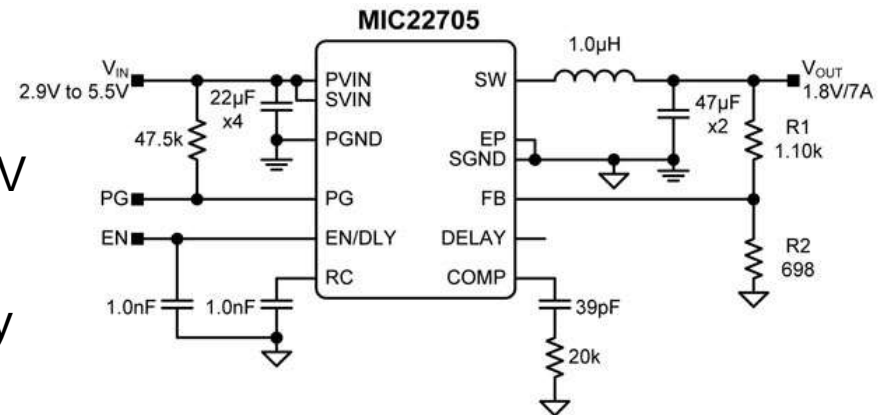
- ◆ Input voltage range: 2.6V to 5.5V
- ◆ Output voltage adjustable down to 0.7V
- ◆ Output current up to 7A
- ◆ Full sequencing and tracking capability
- ◆ Power on Reset/Power Good
- ◆ Efficiency >95% across a broad load range
- ◆ Easy RC compensation
- ◆ 100% maximum duty cycle
- ◆ Fully integrated MOSFET switches
- ◆ Micropower shutdown
- ◆ Thermal shutdown and current limit protection
- ◆ 24-pin 4mm x 4mm MLF[®]
- ◆ -40°C to +125°C junction temperature range



MIC22705

1MHz, 7A Integrated Switch High-Efficiency Synchronous Buck Regulator

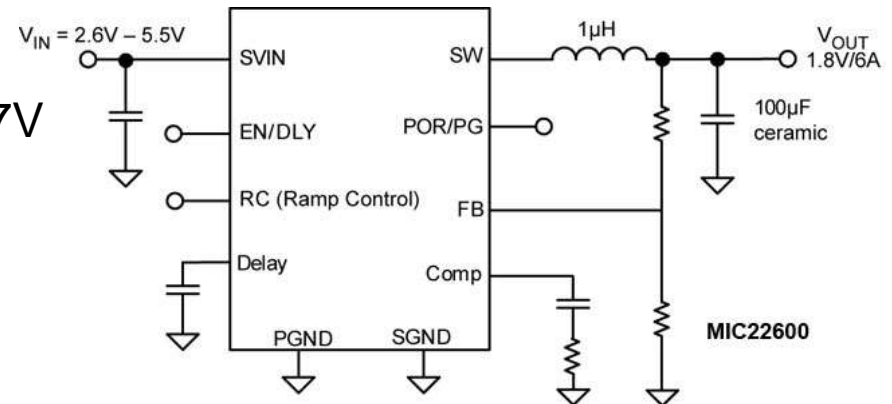
- ◆ Input voltage range: 2.9V to 5.5V
- ◆ Output load current up to 7A
- ◆ Output voltage adjustable down to 0.7V
- ◆ Safe start-up into a pre-biased load
- ◆ Full sequencing and tracking capability
- ◆ Power Good output
- ◆ Efficiency >95% across a broad load range
- ◆ Ultra-fast transient response
- ◆ Easy RC compensation
- ◆ 100% maximum duty cycle
- ◆ Fully-integrated MOSFET switches
- ◆ Thermal-shutdown and current-limit protection
- ◆ 24-pin 4mm x 4mm MLF[®]
- ◆ -40°C to +125°C junction temperature range



MIC22600

1MHz 6A Integrated Switch Synchronous Buck Regulator

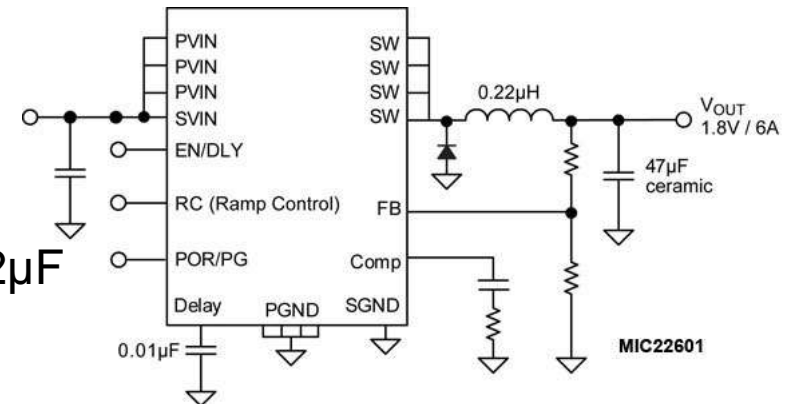
- ◆ Input voltage range: 2.6V to 5.5V
- ◆ Output voltage adjustable down to 0.7V
- ◆ Output current up to 6A
- ◆ Full sequencing and tracking ability
- ◆ Power on Reset/Power Good
- ◆ Efficiency >90% across a broad load range
- ◆ Ultra fast transient response, easy RC compensation
- ◆ 100% maximum duty cycle
- ◆ Fully integrated MOSFET switches
- ◆ Micropower shutdown
- ◆ Thermal-shutdown and current-limit protection
- ◆ 24-pin 4mm x 4mm MLF[®]
- ◆ 24-pin ePad TSSOP
- ◆ -40°C to +125°C junction temperature range



MIC22601

4MHz, 6A Integrated Switch Synchronous Buck Regulator

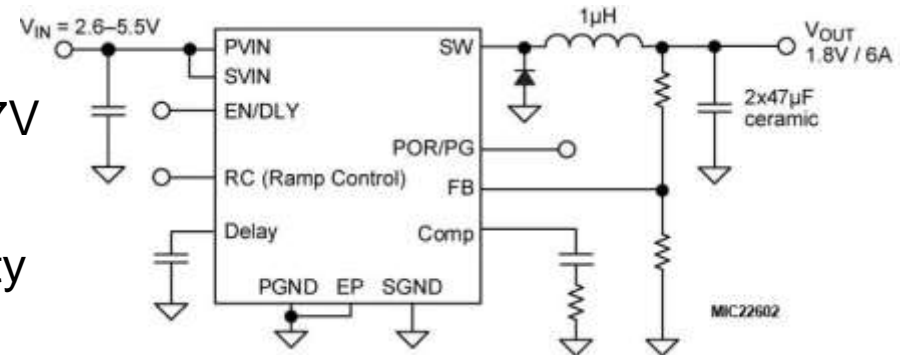
- ◆ Input voltage range: 2.6V to 5.5V
- ◆ 4MHz PWM frequency
- ◆ Output current to 6A
- ◆ Small Passive components: 0.22μH and 22μF
- ◆ Full sequence and tracking ability
- ◆ Power On Reset/Power Good
- ◆ Adjustable output voltage option down to 0.7V
- ◆ Ultra fast transient response
 - Easy RC compensation
- ◆ 100% maximum duty cycle
- ◆ Fully integrated MOSFET switches
- ◆ Thermal shutdown and current limit protection
- ◆ 24-pin 4mmx4mm MLF[®] package
- ◆ -40°C to +125°C junction temperature range



MIC22602

1MHz, 6A Integrated Switch High Efficiency Synchronous Buck Regulator

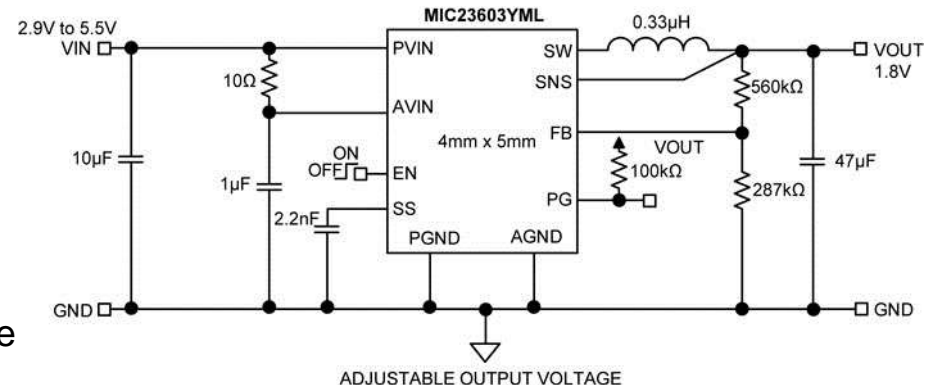
- ◆ Input voltage range: 2.6V to 5.5V
- ◆ Output voltage adjustable down to 0.7V
- ◆ Output load current up to 6A
- ◆ Full sequencing and tracking capability
- ◆ Power on Reset/Power Good output
- ◆ Efficiency >95% across a broad load range
- ◆ Ultra fast transient response-Easy RC compensation
- ◆ 100% maximum duty cycle
- ◆ Fully integrated MOSFET switches
- ◆ Hiccup mode current limiting
- ◆ Micropower shutdown
- ◆ Thermal shutdown and current limit protection
- ◆ 24-pin 4mm x 4mm MLF[®]
- ◆ -40°C to +125°C junction temperature range



MIC23603

4MHz PWM 6A Buck Regulator with HyperLight Load®

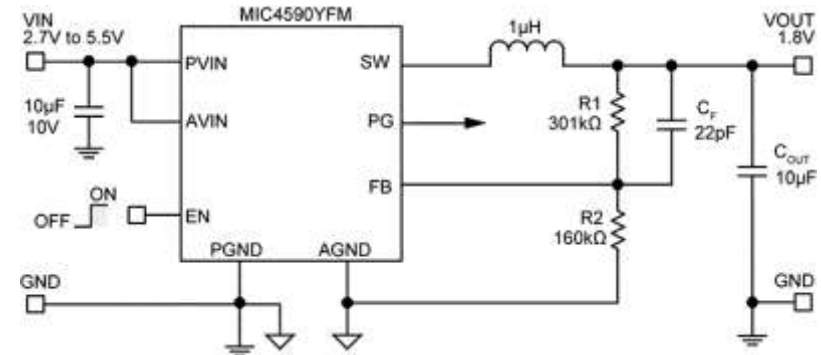
- ◆ Input voltage: 2.7V to 5.5V
- ◆ 6A output current
- ◆ Up to 93% efficiency and 81% at 1mA
- ◆ 24µA typical quiescent current
- ◆ 4MHz PWM operation in continuous mode
- ◆ Ultra-fast transient response
- ◆ Power Good
- ◆ Programmable soft-start
- ◆ Low voltage output ripple
 - 14mVpp ripple in HyperLight Load® mode
 - 5mV output voltage ripple in full PWM mode
- ◆ Fully integrated MOSFET switches
- ◆ 0.01µA shutdown current
- ◆ Thermal shutdown and current limit protection
- ◆ Output voltage as low as 0.65V
- ◆ 20-pin 4mm x 5mm DFN



MIC4950

Hyper Speed Control™ 5A Buck Regulator

- ◆ Input voltage: 2.7V to 5.5V
- ◆ 5A output current
- ◆ Up to 95% efficiency
- ◆ Up to 3.3MHz operation
- ◆ Safe start-up into a pre-biased output
- ◆ Power Good output
- ◆ Ultra-fast transient response
- ◆ Low output voltage ripple
- ◆ Low $R_{DS(ON)}$ integrated MOSFET switches
- ◆ 0.01 μ A shutdown current
- ◆ Thermal shutdown and current limit protection
- ◆ Output voltage as low as 0.7V
- ◆ 8-pin SOIC and 3mm \times 4mm DFN-10L
- ◆ -40°C to $+125^{\circ}\text{C}$ junction temperature range

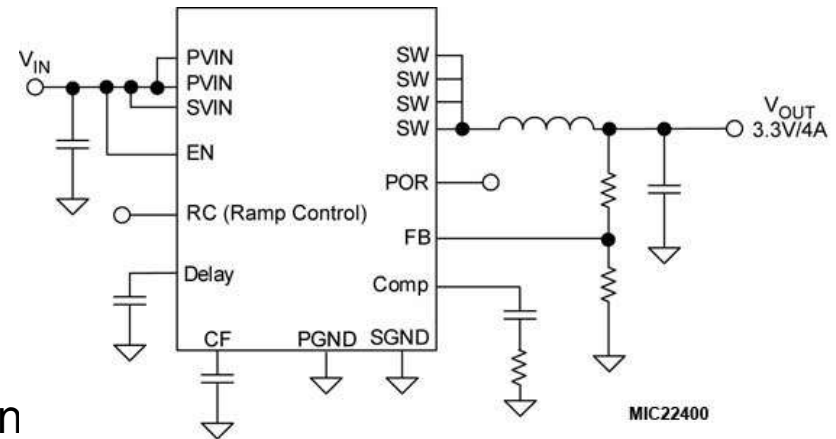




MIC22400

4A Integrated Switch Synchr Buck Regulator with Frequency Programmable up to 4MHz

- ◆ Input voltage range: 2.6V to 5.5V
- ◆ Output voltage adjustable down to 0.7V
- ◆ Output current up to 4A
- ◆ Full sequencing and tracking ability
- ◆ Power-On-Reset (POR)
- ◆ Efficiency > 90% across a broad load range
- ◆ Programmable frequency 300kHz to 4MHz
- ◆ Easy Ramp Control™ (RC) compensation
- ◆ 100% maximum duty cycle
- ◆ Fully-integrated MOSFET switches
- ◆ Thermal-shutdown and current limit protection
- ◆ 20-pin 3mm x 4mm MLF®
- ◆ 20-pin ePad TSSOP
- ◆ -40°C to +125°C junction temperature range



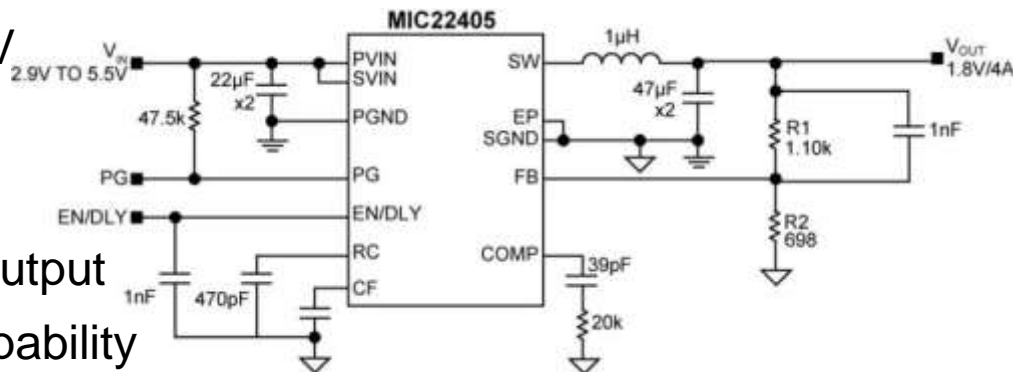
MIC22405

 [Datasheet](#)



4A Integrated Switch High-Efficiency Synchronous Buck Regulator with Frequency Programmable up to 4MHz

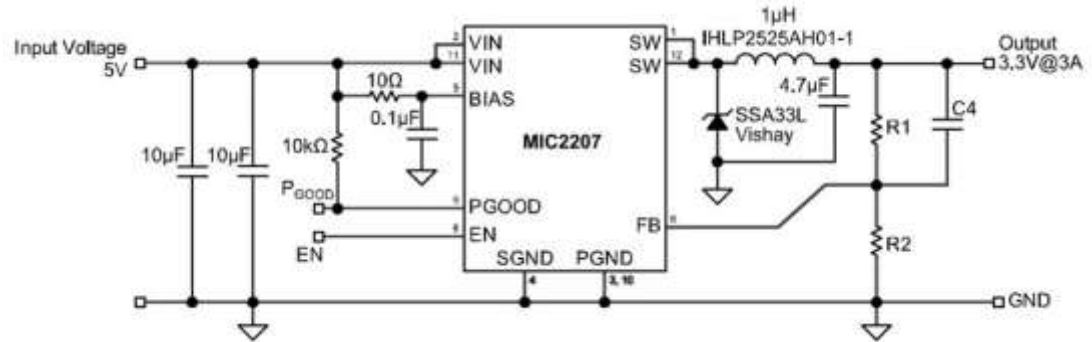
- ◆ Input voltage range: 2.9V to 5.5V
- ◆ Ultra-fast transient response
- ◆ Output load current up to 4A
- ◆ Safe start-up into a pre-biased output
- ◆ Full sequencing and tracking capability
- ◆ Efficiency > 95% across a broad load range
- ◆ Programmable frequency 300kHz to 4MHz
- ◆ Easy RC compensation
- ◆ 100% maximum duty cycle
- ◆ Fully-integrated MOSFET switches
- ◆ Thermal shutdown and current-limit protection
- ◆ 20-pin 3mm x 4mm MLF[®]
- ◆ -40°C to +125°C junction temperature range
- ◆ Output voltage adjustable down to 0.7V



MIC2207

3mm x 3mm 2MHz 3A Buck Regulator

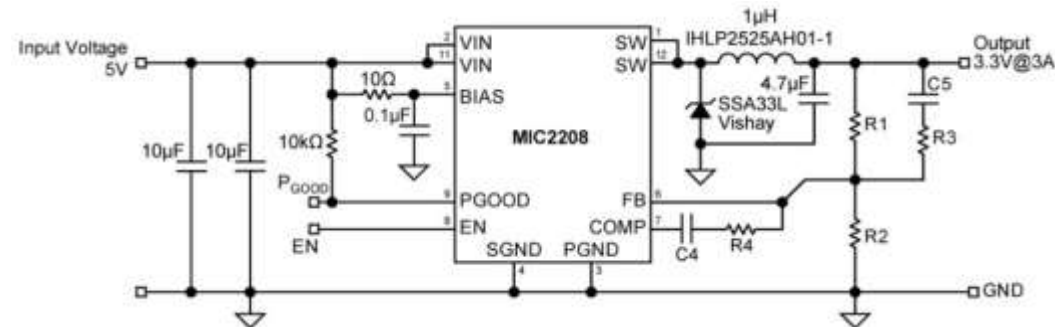
- ◆ 2.7V to 5.5V supply voltage
- ◆ 2MHz PWM mode
- ◆ Output current to 3A
- ◆ >94% efficiency
- ◆ 100% maximum duty cycle
- ◆ Adjustable output voltage option down to 1V
- ◆ Ultra-fast transient response
- ◆ Ultra-small external components stable with a 1 μ H inductor and a 4.7 μ F output capacitor
- ◆ Fully integrated 3A MOSFET switch
- ◆ Micropower shutdown
- ◆ Thermal shutdown and current limit protection
- ◆ Pb-free 12-pin 3mm x 3mm MLF[®] package
- ◆ -40°C to +125°C junction temperature range



MIC2208

3mm x 3mm 1MHz 3A PWM Buck Regulator

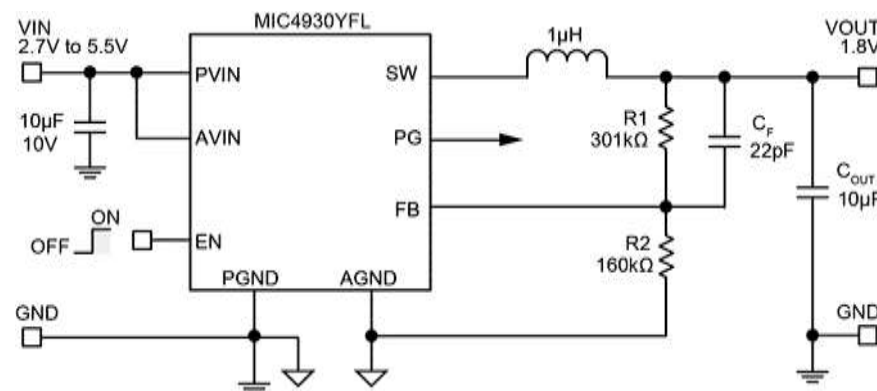
- ◆ 2.7V to 5.5V supply voltage
- ◆ 1MHz PWM mode
- ◆ Output current to 3A
- ◆ >90% efficiency
- ◆ Adjustable output voltage option down to 1V
- ◆ Ultra-fast transient response
- ◆ External Compensation
- ◆ Stable with a wide range of output capacitance
- ◆ Fully integrated 5A MOSFET switch
- ◆ Micropower shutdown
- ◆ Thermal shutdown and current limit protection
- ◆ Pb-free 12-pin 3mm x 3mm MFL[®] package
- ◆ -40°C to +125°C junction temperature range



MIC4930

Hyper Speed Control™ 3A Buck Regulator

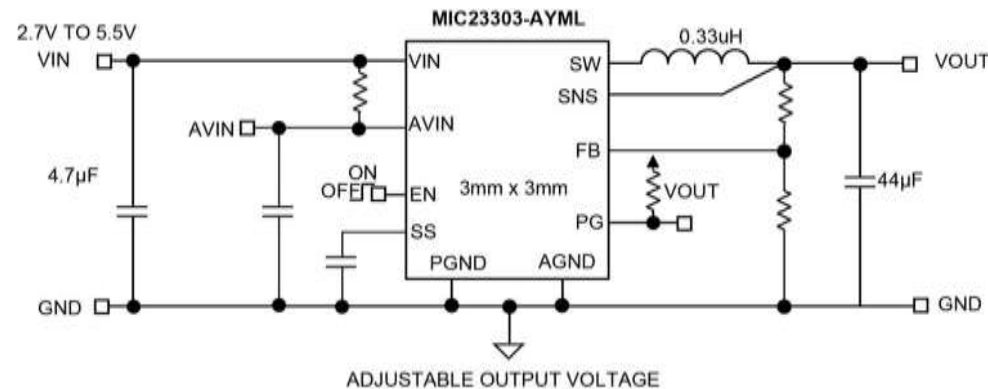
- ◆ Input voltage: 2.7V to 5.5V
- ◆ 3A output current
- ◆ Up to 95% efficiency
- ◆ Up to 3.3MHz operation
- ◆ Safe start-up into a pre-biased output
- ◆ Power Good output
- ◆ Ultra-fast transient response
- ◆ Low output voltage ripple
- ◆ Low $R_{DS(ON)}$ integrated MOSFET switches
- ◆ 0.01 μ A shutdown current
- ◆ Thermal shutdown and current limit protection
- ◆ Output voltage as low as 0.7V
- ◆ 3mm × 4mm DFN-10L
- ◆ -40°C to +125°C junction temperature range



MIC23303

4MHz PWM 3A Buck Regulator with HyperLight Load® and Power Good

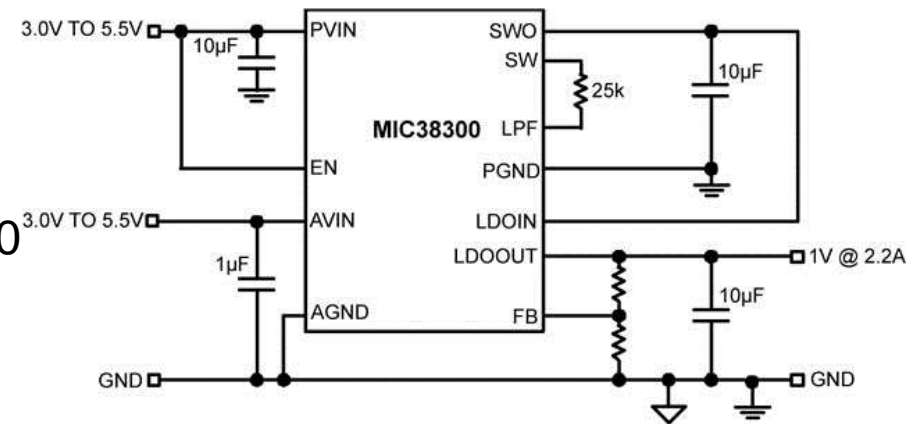
- ◆ Input voltage: 2.7V to 5.5V
- ◆ Output voltage: down to 0.65V
- ◆ Up to 3A output current
- ◆ Up to 93% peak efficiency
- ◆ 80% typical efficiency at 1mA
- ◆ 24μA typical quiescent current
- ◆ 4MHz PWM operation in continuous mode
- ◆ 35mV_{pp} ripple in HyperLight Load® mode
- ◆ 5mV output voltage ripple in full PWM mode
- ◆ Fully integrated MOSFET switches
- ◆ 0.01μA shutdown current
- ◆ Thermal-shutdown and current-limit protection
- ◆ 12-pin 3mm x 3mm DFN
- ◆ -40°C to +125°C junction temperature range



MIC38300

HELDO® 3A High Efficiency Low Dropout Regulator

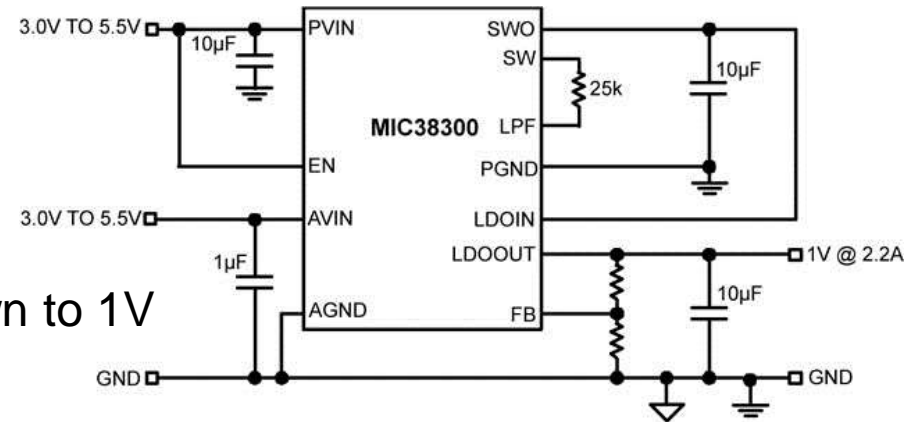
- ◆ 3A peak output current
- ◆ 2.2A continuous operating current
- ◆ Input voltage range: 3.0V to 5.5V
- ◆ Adjustable output voltage down to 1.0V
- ◆ Output noise less than 5mV
- ◆ Ultra fast transient performance
- ◆ Unique switcher plus LDO architecture
- ◆ Fully integrated MOSFET switches
- ◆ Micro-power shutdown
- ◆ Easy upgrade from LDO as power dissipation becomes an issue
- ◆ Thermal shutdown and current limit protection
- ◆ 4mm x 6mm x 0.9mm MLF® package



MIC4722

3mm x 3mm 2.7MHz 3A PWM Buck

- ◆ 2.7V to 5.5V supply voltage
- ◆ 2.7MHz PWM mode
- ◆ Output current to 3A
- ◆ >92% efficiency
- ◆ Adjustable output voltage option down to 1V
- ◆ 100% maximum duty cycle
- ◆ Ultra-fast transient response
- ◆ Ultra-small external components Stable with a 0.47 μ H inductor and a 4.7 μ F output capacitor
- ◆ Fully integrated 3A MOSFET switch
- ◆ Micropower shutdown
- ◆ Thermal shutdown and current limit protection
- ◆ Pb-free 12-pin 3mm x 3mm MFL[®] package
- ◆ -40°C to +125°C junction temperature range

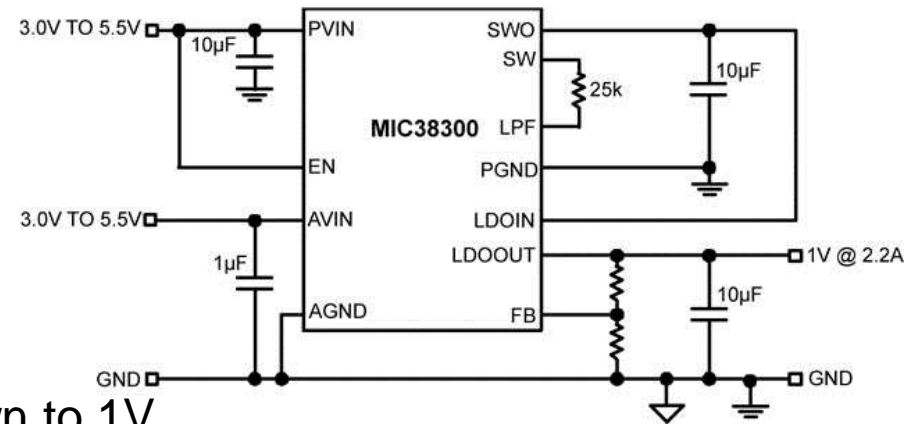




MIC4723

3A 2MHz Integrated Switch Buck Regulator

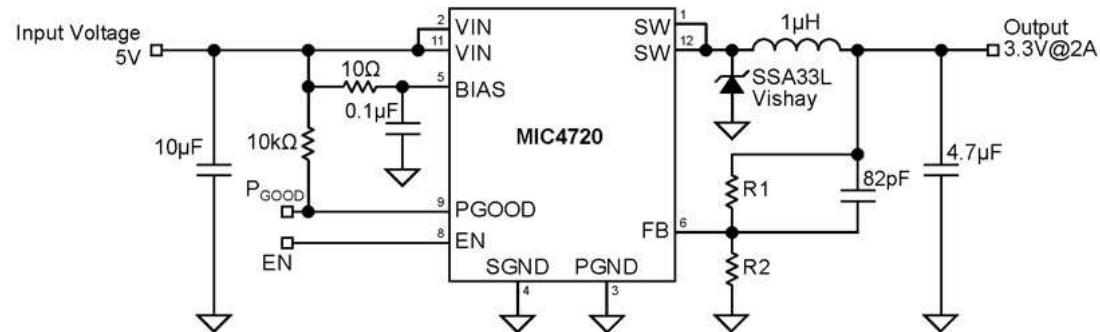
- ◆ 2.7/3.0V to 5.5V supply voltage
- ◆ 2.0MHz PWM mode
- ◆ Output current to 3A
- ◆ Up to 94% efficiency
- ◆ 100% maximum duty cycle
- ◆ Adjustable output voltage option down to 1V
- ◆ Ultra-fast transient response
- ◆ Ultra-small external components stable with a 1 μ H inductor and a 4.7 μ F output capacitor
- ◆ Fully integrated 3A MOSFET switch
- ◆ Thermal shutdown and current limit protection
- ◆ Pb-free 12-pin 3mm x 3mm MLF[®] package
- ◆ Pb-free 10-pin ePAD MSOP package
- ◆ -40°C to +125°C junction temperature range



MIC4720

3mm x 3mm 2.0MHz 2A Integrated Switch Buck Regulator

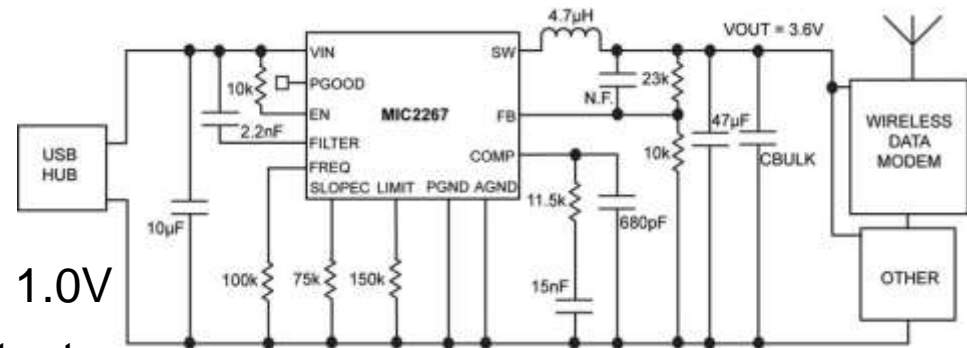
- ◆ 2.7V to 5.5V supply voltage
- ◆ 2.0MHz PWM mode
- ◆ Output current to 2A
- ◆ Up to 94% efficiency
- ◆ 100% maximum duty cycle
- ◆ Adjustable output voltage option down to 1V
- ◆ Ultra-fast transient response
- ◆ Ultra-small external components Stable with a 1μH inductor and a 4.7μF output capacitor
- ◆ Fully integrated 2A MOSFET switch
- ◆ Thermal shutdown and current limit protection
- ◆ Pb-free 12-pin 3mm x 3mm MLF[®] package
- ◆ -40°C to +125°C junction temperature range
- ◆ Pb-free 10-pin ePad MSOP package



MIC2267

Input Current Limiting Synchronous Buck Regulator

- ◆ Input voltage range: 3.0V to 5.5V
- ◆ Micropower shutdown
- ◆ Fast transient response
- ◆ Output voltage adjustable down to 1.0V
- ◆ Up to 96% efficiency at 500mA output
- ◆ Efficiency <90% across a broad load range
- ◆ Adjustable frequency from 400kHz to 1.5MHz
- ◆ Adjustable input current limiting 100mA to over 1A
- ◆ 100% maximum duty cycle
- ◆ Fully integrated MOSFET switches
- ◆ Thermal shutdown and output current limit protection
- ◆ 12-pin 3mm x 3mm MLF[®]
- ◆ Junction temperature range: -40°C to +125°C

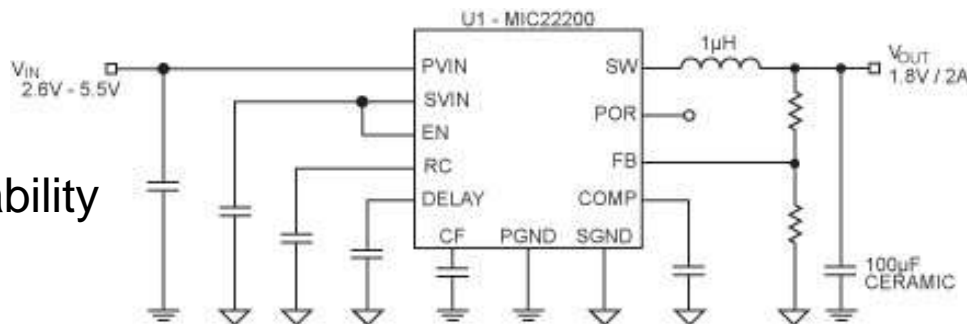


MIC22200



2A Integrated Switch Synchronous Buck Regulator with Frequency Programmable from 800kHz to 4MHz

- ◆ Input voltage range: 2.6V to 5.5V
- ◆ Output current to 2A
- ◆ Full sequencing and tracking capability
- ◆ Easy RC compensation
- ◆ Power On Reset (POR) output
- ◆ Adjustable output voltage option down to 0.7V
- ◆ Efficiency >90% across a broad load range
- ◆ Operating frequency: Programmable from 800 kHz up to 4MHz
- ◆ Ultra fast transient response
- ◆ 100% maximum duty cycle
- ◆ Fully integrated MOSFET switches
- ◆ Thermal shutdown and current limit protection
- ◆ Available in Pb-free 3mm x 3mm 12-pin MLF[®] package
- ◆ -40°C to +125°C junction temperature range

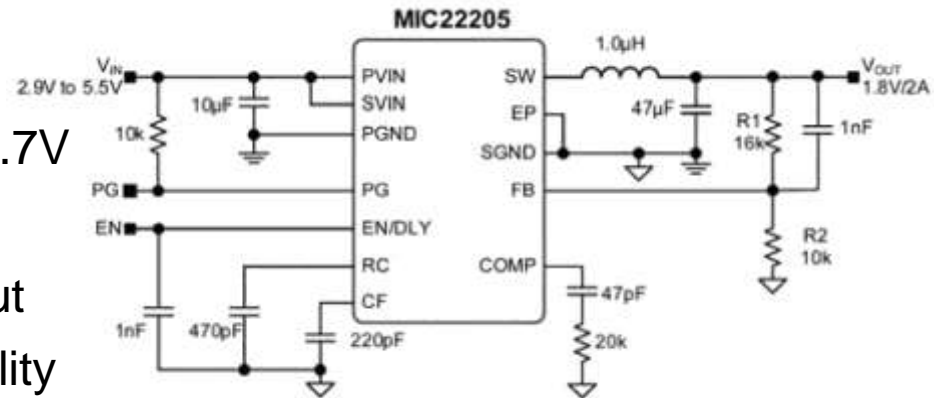


MIC22205



2A, Integrated, Switch, High-Efficiency, Synchronous Buck Regulator with Frequency Programmable up to 4MHz

- ◆ Input voltage range: 2.9V to 5.5V
- ◆ Output voltage adjustable down to 0.7V
- ◆ Output load current up to 2A
- ◆ Safe start-up into a pre-biased output
- ◆ Full sequencing and tracking capability
- ◆ Power Good (PG) output
- ◆ Efficiency >95% across a broad load range
- ◆ Programmable frequency 300kHz to 4MHz
- ◆ Easy RC compensation
- ◆ 100% maximum duty cycle
- ◆ Fully-integrated MOSFET switches
- ◆ Thermal-shutdown and current-limit protection
- ◆ 12-pin 3mm x 3mm MLF[®]
- ◆ -40°C to +125°C junction temperature range

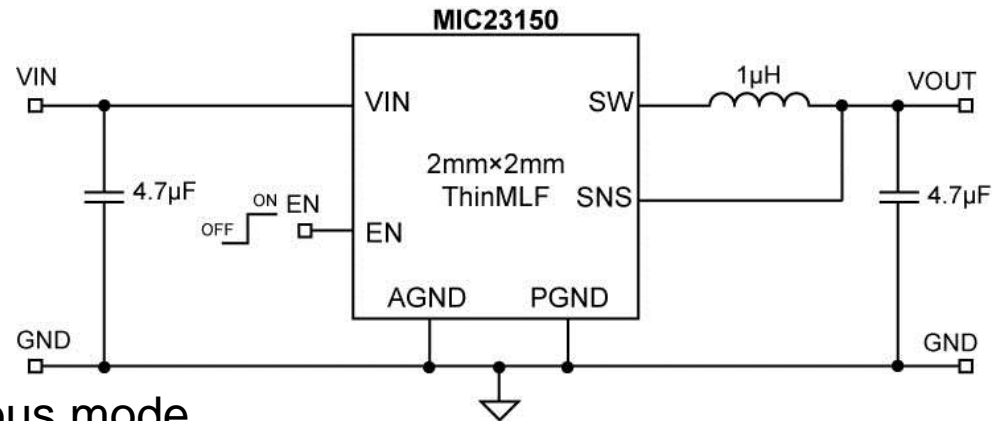




MIC23150

4MHz PWM 2.0A Buck Regulator with HyperLight Load®

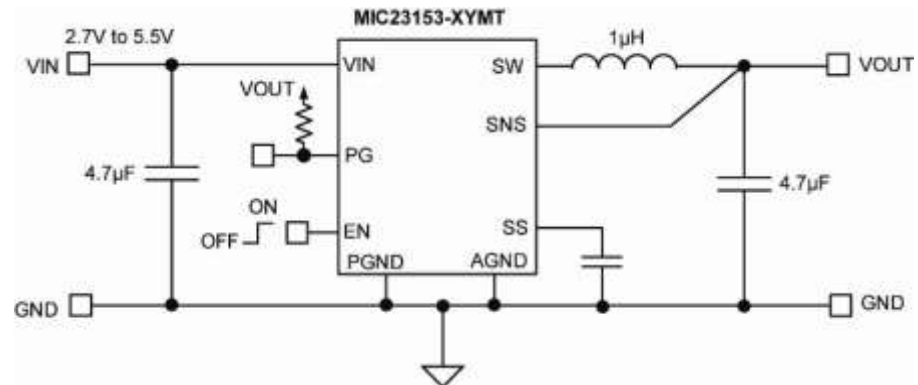
- ◆ Input voltage: 2.7V to 5.5V
- ◆ 2.0A output current
- ◆ Up to 93% peak efficiency
- ◆ 87% typical efficiency at 1mA
- ◆ 23µA typical quiescent current
- ◆ 4MHz PWM operation in continuous mode
- ◆ Low ripple output voltage
 - 14mV_{pp} ripple in HyperLight Load® mode
 - 5mV output voltage ripple in full PWM mode
- ◆ Fully integrated MOSFET switches
- ◆ 0.01µA shutdown current
- ◆ Output Voltage as low as 0.95V
- ◆ 8-pin 2mm x 2mm Thin MLF®
- ◆ -40°C to +125°C junction temperature range



MIC23153

4MHz PWM 2A Buck Regulator with HyperLight Load® and Power Good

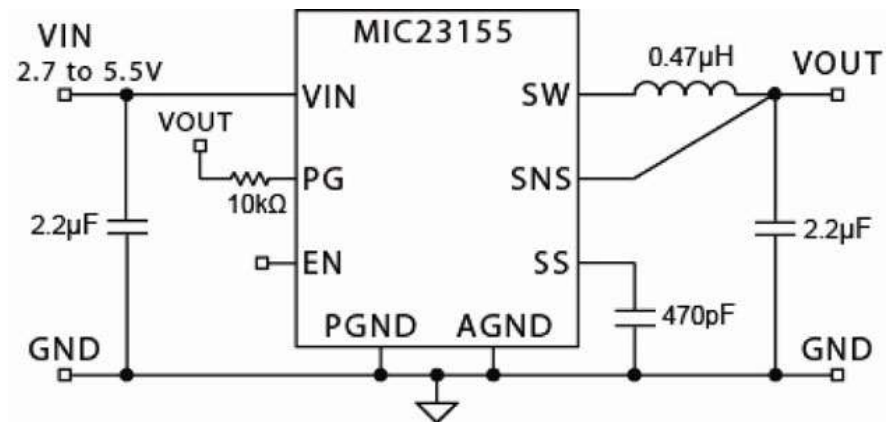
- ◆ Input voltage: 2.7V to 5.5V
- ◆ Up to 2A output current
- ◆ Up to 93% peak efficiency
- ◆ 85% typical efficiency at 1mA
- ◆ 22μA typical quiescent current
- ◆ Output voltage: fixed or adjustable (0.62V to 3.6V)
- ◆ 4MHz PWM operation in continuous mode
- ◆ Low ripple output voltage
 - 35mV_{pp} ripple in HyperLight Load® mode
 - 5mV output voltage ripple in full PWM mode
- ◆ Fully integrated MOSFET switches
- ◆ 0.01μA shutdown current
- ◆ 10-pin 2.5mm x 2.5mm Thin MLF®
- ◆ -40°C to +125°C junction temperature range



MIC23155

3MHz PWM 2A Buck Regulator with HyperLight Load® and Power Good

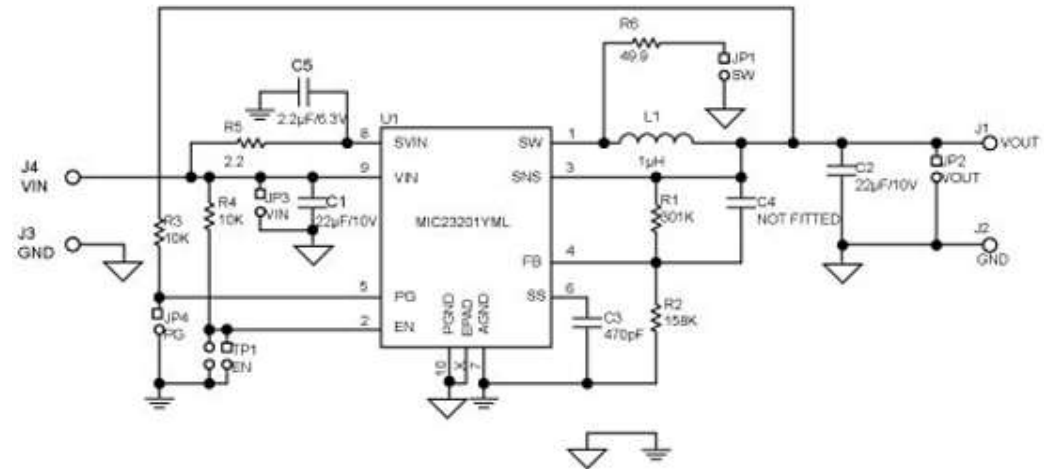
- ◆ Input voltage: 2.7V to 5.5V
- ◆ Up to 2A output current
- ◆ Up to 94% peak efficiency
- ◆ 85% typical efficiency at 1mA
- ◆ Programmable soft-start
- ◆ 22μA typical quiescent current
- ◆ Output voltage: fixed or adjustable (down to 0.7V)
- ◆ 3MHz PWM operation in continuous conduction mode
- ◆ Active output discharge when disabled
- ◆ Fully integrated MOSFET switches
- ◆ 0.01μA shutdown current
- ◆ Thermal shutdown and current limit protection
- ◆ 10-pin 2.5mm x 2.5mm Thin MLF®
- ◆ -40°C to +125°C junction temperature range



MIC23201

2MHz PWM 2A Buck Regulator with Hyper Speed Control™

- ◆ Input voltage: 2.7V to 5.5V
- ◆ 2A output current
- ◆ Up to 90% peak efficiency
- ◆ Programmable Soft-Start
- ◆ Power Good Indicator
- ◆ 2MHz switching frequency
- ◆ Safe for pre-biased output
- ◆ Ultra fast transient response
- ◆ Low voltage output ripple, 16mV at full load
- ◆ Fully integrated MOSFET switches
- ◆ 0.01μA shutdown current
- ◆ Output Voltage as low as 0.95V
- ◆ 10-pin 3mm x 3mm MLF®
- ◆ -40°C to +125°C junction temperature range

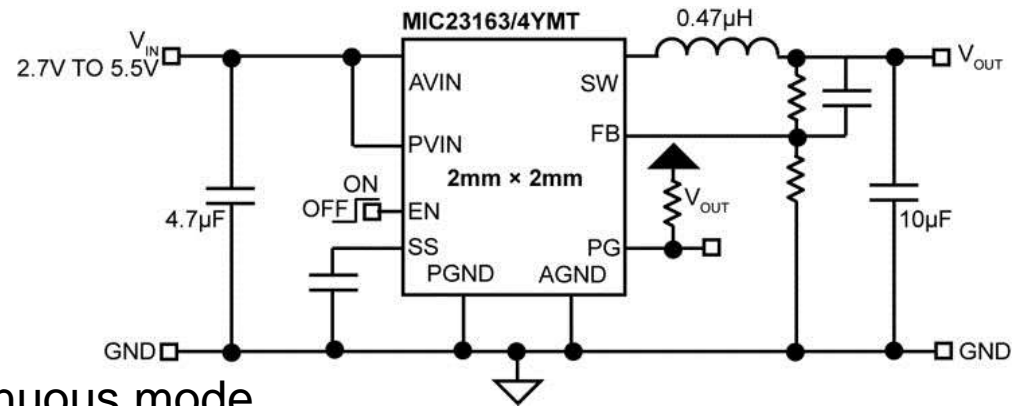




MIC23163/4

4MHz, PWM, 2A Buck Regulator with HyperLight Load® and Power Good

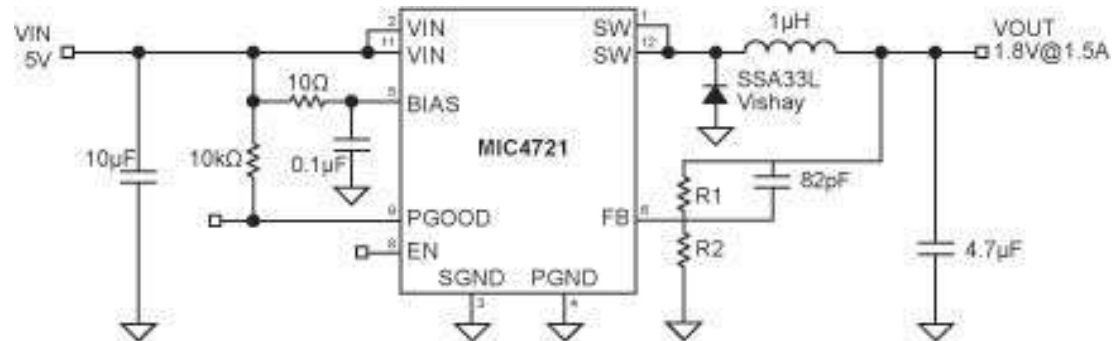
- ◆ Input voltage: 2.7V to 5.5V
- ◆ 100% duty cycle
- ◆ 2A output current
- ◆ Up to 93% peak efficiency
- ◆ 85% typical efficiency at 1mA
- ◆ 4MHz PWM operation in continuous mode
- ◆ Low ripple output voltage
- ◆ Adjustable output voltage from 0.6V to 5.5V Programmable soft-start with pre-bias start-up capability
- ◆ Fully-integrated MOSFET switches
- ◆ 0.1μA shutdown current
- ◆ 10-pin 2.0mm × 2.0mm Thin DFN
- ◆ -40°C to +125°C junction temperature range
- ◆ Disable pull down 180Ω (MIC23164 only)



MIC4721

1.5A 2MHz Integrated Switch Buck Regulator

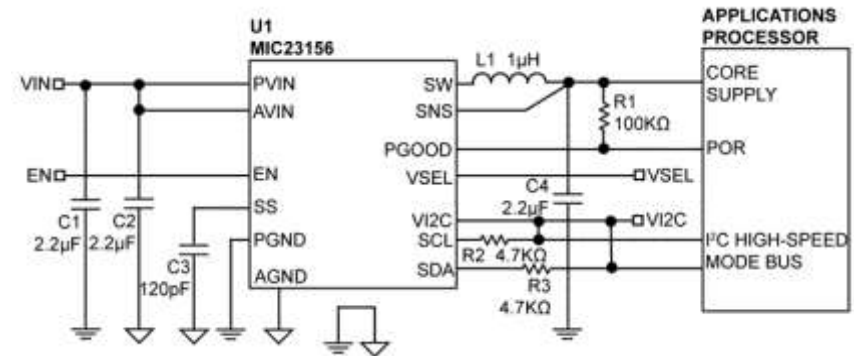
- ◆ 2.7V to 5.5V supply voltage
- ◆ 2MHz PWM mode
- ◆ Output current to 1.5A
- ◆ Up to 94% efficiency
- ◆ 100% maximum duty cycle
- ◆ Adjustable output voltage option down to 1V
- ◆ Ultra-fast transient response
- ◆ Stable with a 1μH inductor and a 4.7μF output capacitor
- ◆ Fully integrated 1.5A MOSFET switch
- ◆ Micropower shutdown
- ◆ Power Good pin
- ◆ Thermal shutdown and current limit protection
- ◆ Pb-free 10-pin MSOP package
- ◆ -40°C to +125°C junction temperature range





1.5A, 3MHz Synchronous Buck Regulator with HyperLight Load® and I2C Control for Dynamic Voltage Scaling

- ◆ Input voltage: 2.7V to 5.5V
- ◆ Up to 1.5A output current
- ◆ Safe startup in to pre-biased output
- ◆ Up to 93% peak efficiency
- ◆ Fast pin-selectable output voltage
- ◆ 1MHz I²C-controlled adjustable output: $V_{OUT} = 0.7$ to $2.4V$ in 10mV steps
- ◆ High output voltage accuracy ($\pm 1.5\%$ over temperature)
- ◆ Programmable soft-start using external capacitor
- ◆ Ultra-low quiescent current of 30 μA when not switching
- ◆ Thermal-shutdown and current-limit protection
- ◆ Stable with 1 μH output inductor and 2.2 μF ceramic capacitor
- ◆ Junction temperature range of $-40^{\circ}C$ to $+125^{\circ}C$

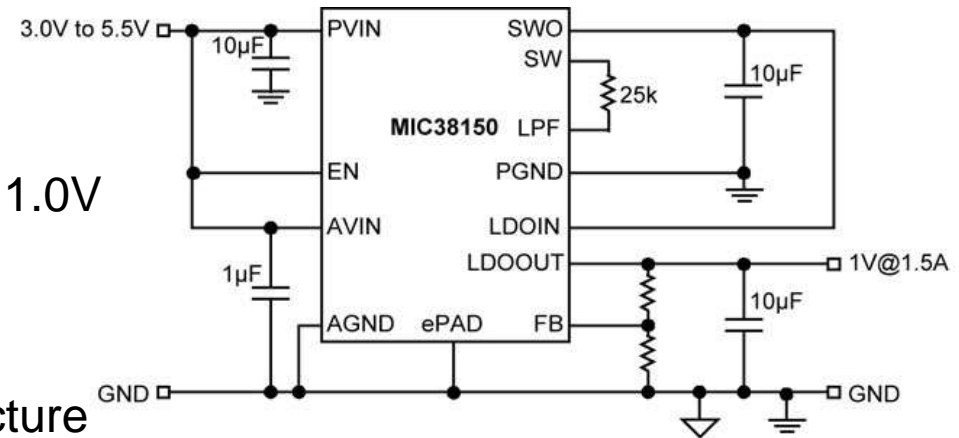




MIC38150

HELDO® 1.5A High Efficiency Low Dropout Regulator

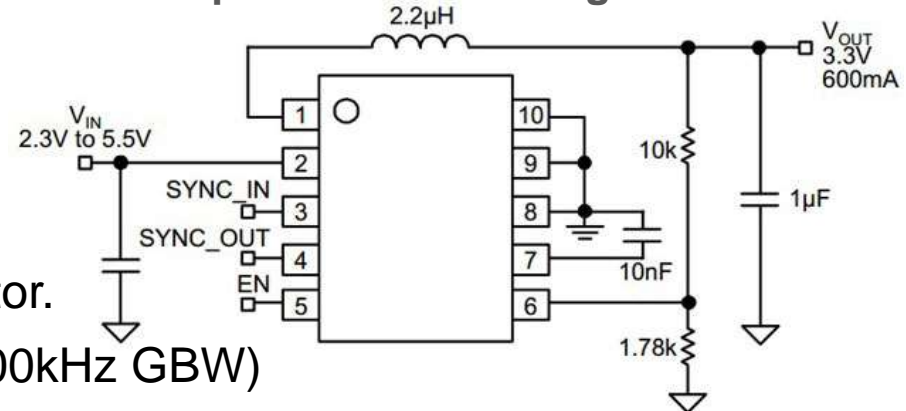
- ◆ Output current up to 1.5A
- ◆ Input voltage range: 3.0V to 5.5V
- ◆ Adjustable output voltage down to 1.0V
- ◆ Output noise less than 5mV
- ◆ Ultra fast transient performance
- ◆ Unique switcher plus LDO architecture
- ◆ Fully integrated MOSFET switches
- ◆ Micro-power shutdown
- ◆ Easy upgrade from LDO as power dissipation becomes an issue
- ◆ Thermal shutdown and current limit protection
- ◆ 4mm x 6mm x 0.9mm MLF® package



MIC2202

High Efficiency 2MHz Synchronous Buck Converter 1 μ F Stable PWM Regulator

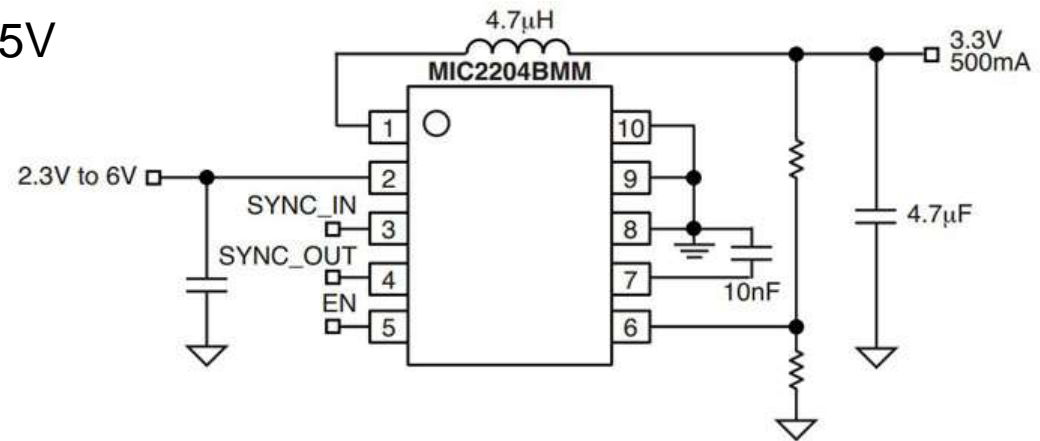
- ◆ Input voltage range: 2.3V to 5.5V
- ◆ Output down to 0.5V @ 600mA
- ◆ 2MHz PWM operation
- ◆ Stable with 1 μ F ceramic output capacitor.
- ◆ Ultra-fast transient response (up to 500kHz GBW)
- ◆ All ceramic capacitors
- ◆ >95% efficiency
- ◆ Fully integrated MOSFET switches
- ◆ Easily synchronized to external clock
- ◆ SYNCLOCK feature to daisy chain multiple 2202s
- ◆ Requires only 4 external components
- ◆ 1% line and load regulation
- ◆ 10-pin MSOP and 3mm x 3mm MLF[®]-10L package options
- ◆ -40°C to +125°C junction temperature range



MIC2204

High Efficiency 2MHz Synchronous Buck Converter

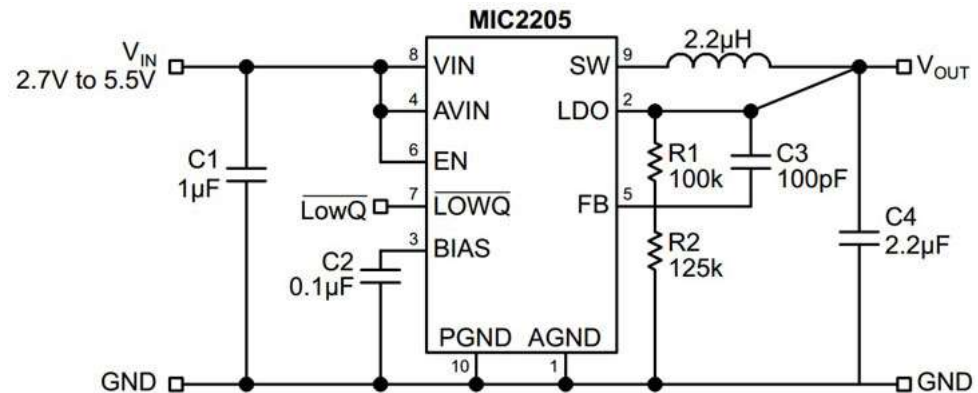
- ◆ Input voltage range: 2.3V to 5.5V
- ◆ Output down to 1V @ 600mA
- ◆ 2MHz PWM operation
- ◆ Internal compensation
- ◆ All ceramic capacitors
- ◆ >95% efficiency
- ◆ Ultra-fast transient response (typical 200kHz GBW)
- ◆ Fully integrated MOSFET switches
- ◆ Easily synchronized to external clock
- ◆ SYNCLOCK feature to daisy chain multiple 2204s
- ◆ <340μA quiescent current
- ◆ Logic controlled micropower shutdown
- ◆ 10-pin MSOP and 3mm x 3mm MLF[®]-10L
- ◆ -40°C to +125°C junction temperature range



MIC2205

2MHz PWM Synchronous Buck Regulator with LDO Standby Mode

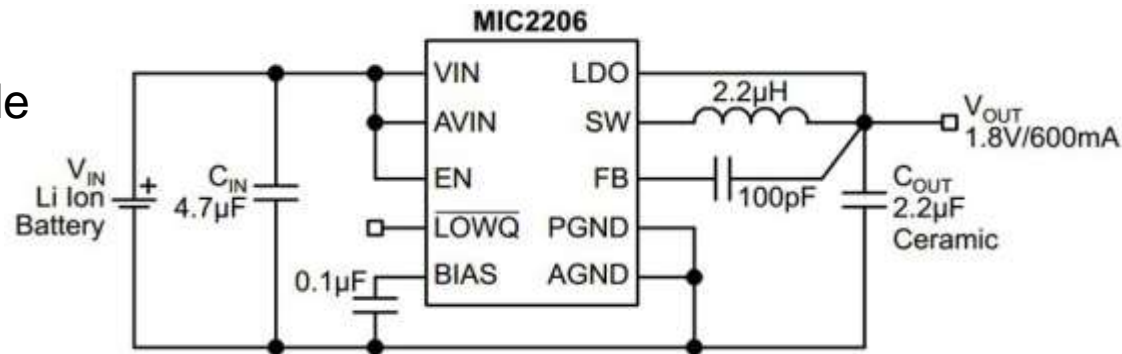
- ◆ 2.7V to 5.5V supply voltage
- ◆ Light load LowQ[®] LDO mode
 - 18μA quiescent current
 - Low noise, 75mV_{rms}
- ◆ 2MHz PWM mode
 - Output current to 600mA
 - >95% efficiency
 - 100% maximum duty cycle
- ◆ Adjustable output voltage option down to 1V
 - Fixed output voltage option available
- ◆ Ultra-fast transient response
- ◆ Stable with 1μF ceramic output capacitor
- ◆ Fully integrated MOSFET switches
- ◆ Pb-free 3mm x 3mm MLF[®]-10L package
- ◆ -40°C to +125°C junction temperature range



MIC2206

2MHz PWM Synchronous Buck Regulator with LowQ® Mode and Voltage Scaling

- ◆ 2.7V to 5.5V supply voltage
- ◆ Light load LowQ® LDO mode
 - 18 μ A quiescent current
 - Low noise, 75 μ V_{rms}
- ◆ 2MHz PWM mode
- ◆ Output current to 600mA
 - >95% efficiency
 - 100% maximum duty cycle
- ◆ Output Voltage Scaling (1V output in LowQ® Mode)
- ◆ Stable with 1mF ceramic output capacitor
- ◆ Fully integrated MOSFET switches
- ◆ Thermal shutdown and current limit protection
- ◆ Pb-free 3mm x 3mm MLF®-10L package
- ◆ -40°C to +125°C junction temperature range



MIC2285A

8MHz PWM Synchronous Buck Regulator with LDO Standby Mode

◆ Light load LowQ[®] LDO mode

- 20 μ A quiescent current
- Low noise, 75 μ V_{rms}

◆ 8MHz PWM mode

- Output current to 600mA
- >90% efficiency
- 100% maximum duty cycle

◆ Adjustable output voltage option down to 1V

- Fixed output voltage options available

◆ Requires only a 0.47 μ H inductor

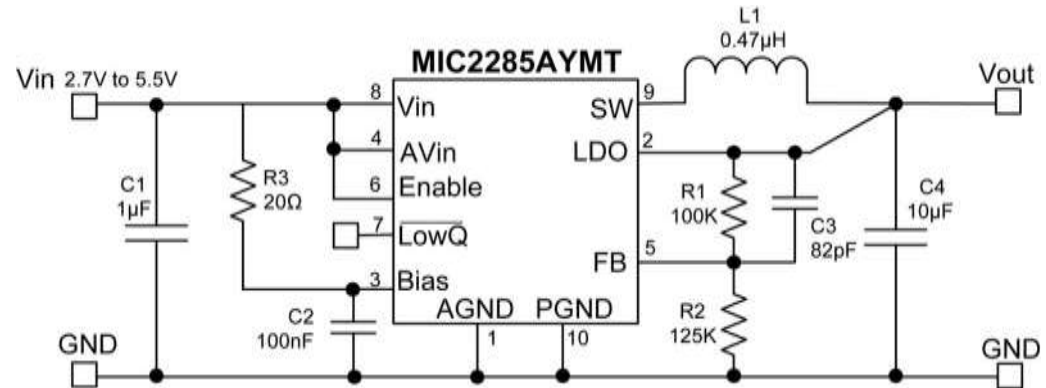
◆ Enables sub 0.55mm profile solution

◆ Fully integrated MOSFET switches

◆ Thermal shutdown and current limit protection

◆ 10-pin 2mm x 2mm x 0.55mm MLF[®] package

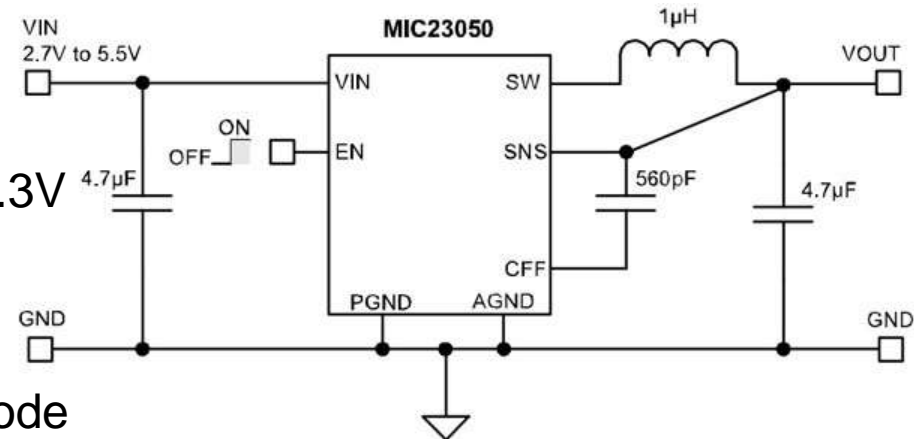
◆ -40°C to +125°C junction temperature range



MIC23050

4MHz PWM Buck Regulator with HyperLight Load®

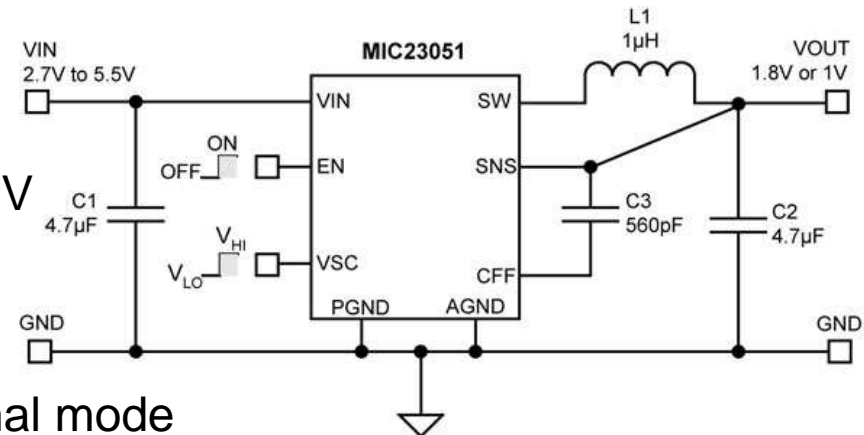
- ◆ Input voltage range: 2.7V to 5.5V
- ◆ 600mA output current
- ◆ Fixed output voltage from 0.72V to 3.3V
- ◆ Ultra fast transient response
- ◆ 20 μ A typical quiescent current
- ◆ 4MHz in PWM in constant current mode
- ◆ 0.47 μ H to 2.2 μ H inductor
- ◆ Low voltage output ripple
 - 25mV_{pp} in HyperLight Load® mode
 - 3mV output voltage ripple in full PWM mode
- ◆ >93% efficiency
- ◆ ~89% at 1mA
- ◆ Available in 8-pin 2mm x 2mm MLF®
- ◆ -40°C to +125°C junction temperature range



MIC23051

4MHz PWM Buck Regulator with HyperLight Load® and Voltage Scaling

- ◆ Input voltage range: 2.7V to 5.5V
- ◆ 600mA output current
- ◆ Fixed output voltage from 0.72V to 3.3V
- ◆ Output voltage scaling option
- ◆ 20 μ A typical quiescent current
- ◆ 4MHz in CCM PWM operation in normal mode
- ◆ 0.47 μ H to 2.2 μ H inductor
- ◆ Low voltage output ripple
 - 25mV_{pp} in HyperLight Load® mode
 - 3mV output voltage ripple in full PWM mode
- ◆ >93% efficiency
- ◆ ~85% at 1mA
- ◆ Available in 8-pin 2mm x 2mm MLF®
- ◆ -40°C to +125°C junction temperature range

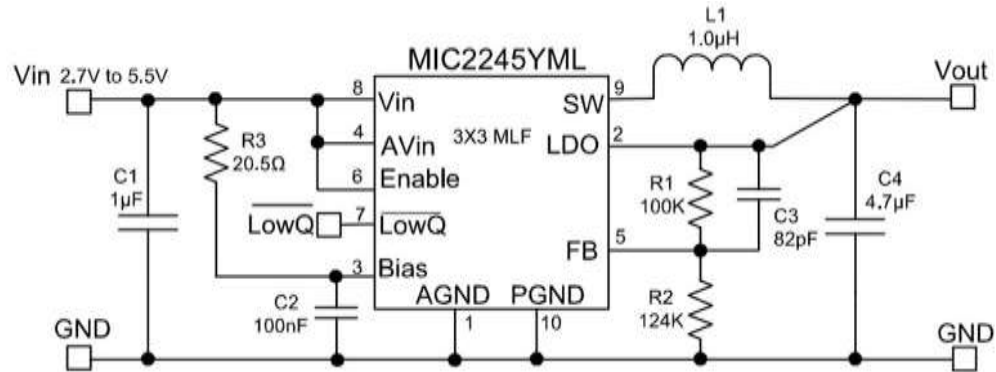




MIC2245

4MHz PWM Synchronous Buck Regulator with LDO Standby Mode

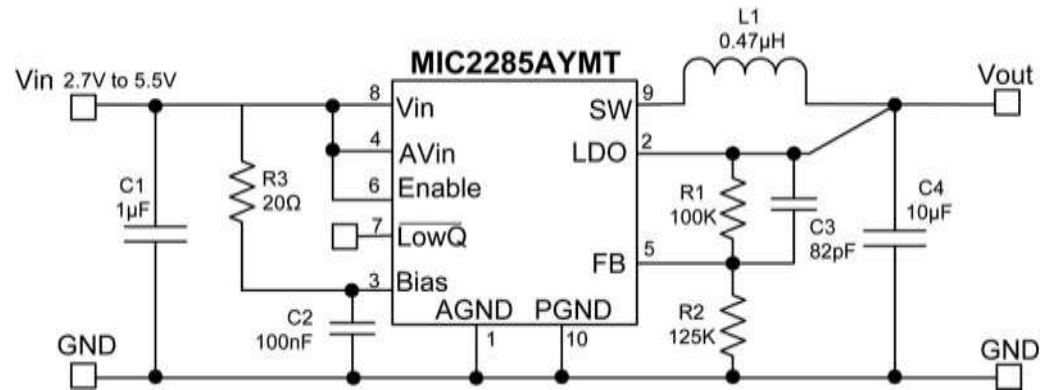
- ◆ 2.7V to 5.5V supply/input voltage
- ◆ Light load LowQ[®] LDO mode
 - 20 μ A quiescent current
 - Low noise, 75 μ V_{rms}
- ◆ 4MHz PWM mode
 - Output current to 500mA
 - >92% efficiency
 - 100% maximum duty cycle
- ◆ Adjustable output voltage option down to 1V
 - Fixed output voltage options available
- ◆ Uses a tiny 1 μ H inductor
- ◆ Fully integrated MOSFET switches
- ◆ Thermal shutdown and current limit protection
- ◆ Pb-free 10-pin 3mm x 3mm MFL[®] package
- ◆ -40°C to +125°C junction temperature range



MIC2285

8MHz PWM Synchronous Buck Regulator with LDO Standby Mode

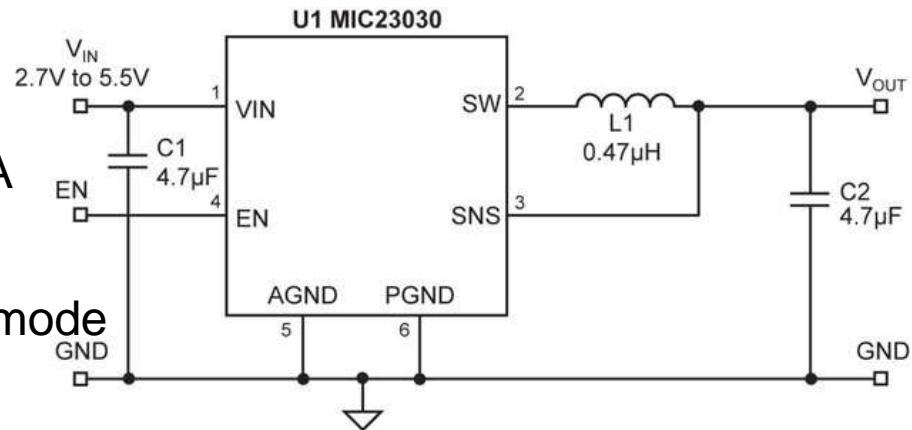
- ◆ 2.7 to 5.5V supply/input voltage
- ◆ Light load LowQ[®] LDO mode
 - 20 μ A quiescent current
 - Low noise, 75 μ V_{rms}
- ◆ 8MHz PWM mode
 - Output current to 500mA
 - >90% efficiency
 - 100% maximum duty cycle
- ◆ Adjustable output voltage option down to 1V
 - Fixed output voltage options available
- ◆ Ultra-fast transient response
- ◆ Uses a tiny 0.47 μ H inductor
- ◆ Enables sub 1mm profile solution
- ◆ Fully integrated MOSFET switches
- ◆ Pb-free 10-pin 3mm x 3mm MLF[®] package
- ◆ -40°C to +125°C junction temperature range



MIC23030

8MHz PWM 400mA Buck Regulator with HyperLight Load®

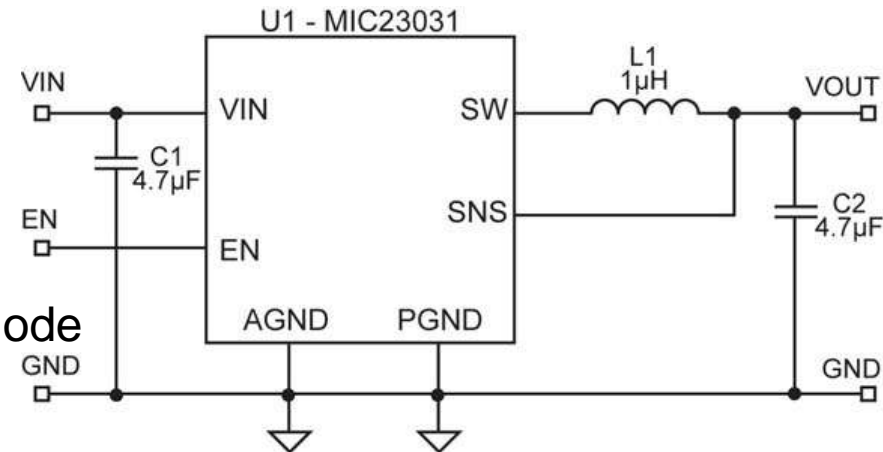
- ◆ Input voltage: 2.7V to 5.5V
- ◆ 400mA output current
- ◆ Up to 91% efficiency and 83% at 1mA
- ◆ 21 μ A typical quiescent current
- ◆ 8MHz PWM operation in continuous mode
- ◆ Ultra fast transient response
- ◆ Low voltage output ripple
 - 14mV_{pp} ripple in HyperLight Load® mode
 - 5mV output voltage ripple in full PWM mode
- ◆ Fully integrated MOSFET switches
- ◆ 0.01 μ A shutdown current
- ◆ Fixed and adjustable output voltage options available
- ◆ 6-pin 1.6mm x 1.6mm Thin MLF®
- ◆ -40 °C to +125 °C junction temperature range



MIC23031

4MHz PWM 400mA Buck Regulator with HyperLight Load®

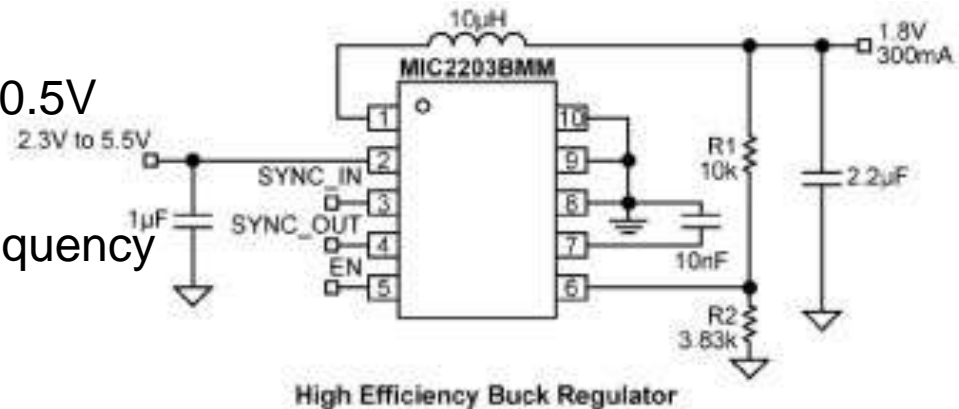
- ◆ Input voltage range: 2.7V to 5.5V
- ◆ 400mA output current
- ◆ Up to 93% efficiency and 88% at 1mA
- ◆ 21µA typical quiescent current
- ◆ 4MHz PWM operation in continuous mode
- ◆ Ultra fast transient response
- ◆ Low voltage output ripple
 - 20mV_{pp} ripple in HyperLight Load® mode
 - 3mV output voltage ripple in full PWM mode
- ◆ 0.01µA shutdown current
- ◆ Fixed and adjustable output voltage options available
- ◆ 6-pin 1.6mm x 1.6mm Thin MLF®
- ◆ -40°C to +125°C junction temperature range



MIC2203

High Efficiency 1MHz Synchronous Buck Regulator

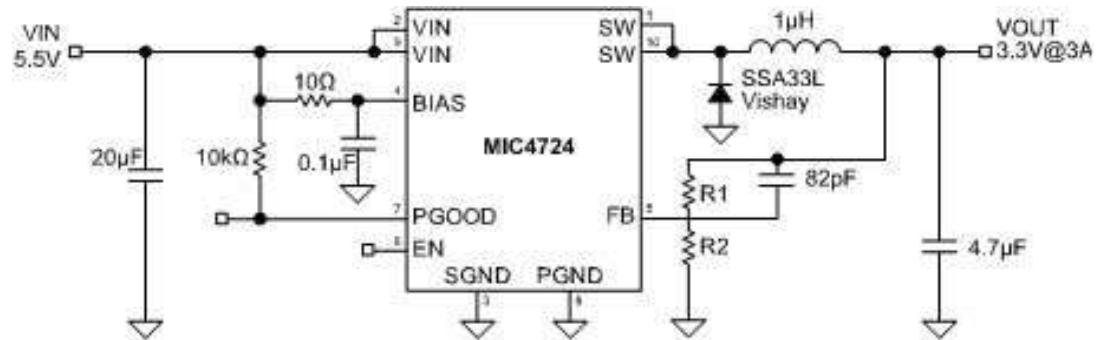
- ◆ Input voltage range: 2.3V to 5.5V
- ◆ Output voltage adjustable down to 0.5V
- ◆ 300mA output current
- ◆ Constant 1MHz PWM switching frequency
- ◆ > 95% efficiency
- ◆ < 1mA switching supply current
- ◆ < 350μA static quiescent current
- ◆ < 1μA shutdown current
- ◆ All-ceramic capacitors
- ◆ Easily synchronized to external clock
- ◆ SYNCLOCK feature to daisy chain multiple devices
- ◆ Thermal shutdown and current limit protection
- ◆ 10-pin MSOP, and 3mm x 3mm MLF[®]-10L package options
- ◆ -40°C to +125°C junction temperature range



MIC4724

3A 2MHz Integrated Switch Buck Regulator with 6Vmax Input

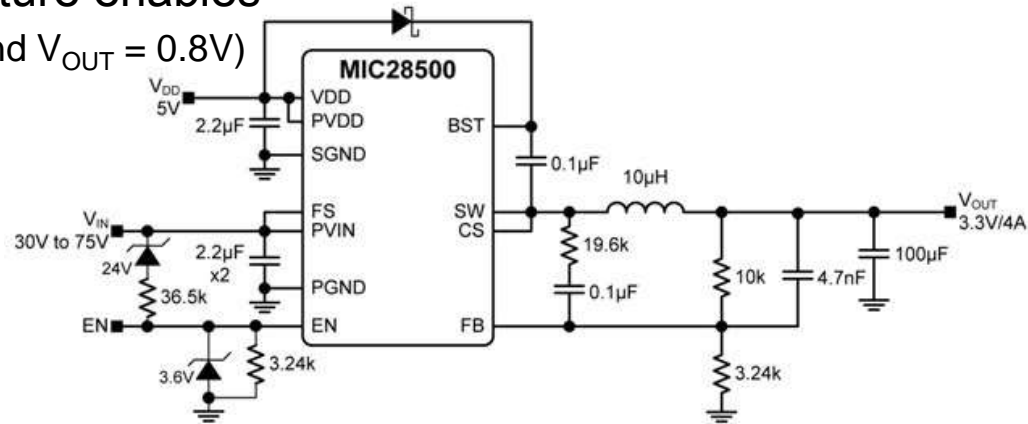
- ◆ 3.0 to 6.0V supply voltage
- ◆ 2.0MHz PWM mode
- ◆ Output current to 3A
- ◆ Up to 94% efficiency
- ◆ 100% maximum duty cycle
- ◆ Adjustable output voltage option down to 1V
- ◆ Ultra-fast transient response
- ◆ Ultra-small external components stable with a 1 μ H inductor and a 4.7 μ F output capacitor
- ◆ Fully integrated 3A MOSFET switch
- ◆ Micropower shutdown
- ◆ Thermal shutdown and current limit protection
- ◆ Pb-free 10-pin ePad MSOP package
- ◆ -40°C to +125°C junction temperature range



MIC28500

75V/4A Hyper Speed Control™ Synchronous DC-DC Buck Regulator

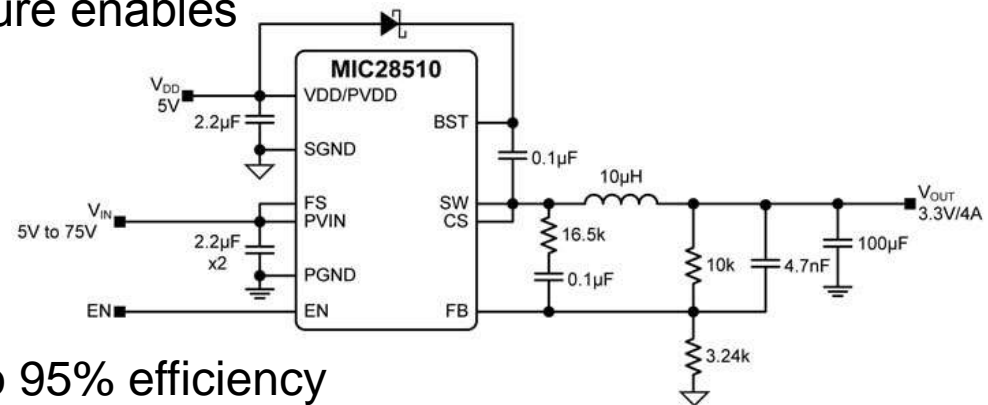
- ◆ Hyper Speed Control™ architecture enables
 - High delta V operation ($V_{IN} = 75V$ and $V_{OUT} = 0.8V$)
 - Small output capacitance
- ◆ 30V to 75V voltage input
- ◆ Adjustable output down to 0.8V
- ◆ $\leq 1\%$ FB accuracy
- ◆ Any Capacitor™ stable
 - Zero-ESR to high-ESR output capacitors
- ◆ 4A output current capability, up to 90% efficiency
- ◆ 100kHz to 500kHz switching frequency
- ◆ Foldback current-limit and "hiccup" mode short-circuit protection
- ◆ Supports safe startup into a pre-biased load
- ◆ $-40^{\circ}C$ to $+125^{\circ}C$ junction temperature range
- ◆ 28-pin 5mm x 6mm MLF® package



MIC28510

75V/4A Hyper Speed Control™ Synchronous DC/DC Buck Regulator

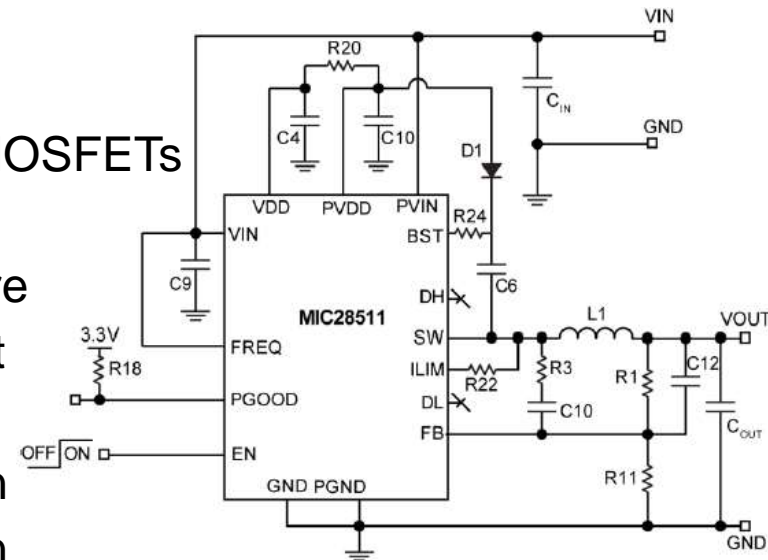
- ◆ Hyper Speed Control™ architecture enables
- ◆ Any Capacitor™ stable
- ◆ Small output capacitance
- ◆ 4.5V to 75V voltage input
- ◆ $\leq 1\%$ FB accuracy
- ◆ 4A output current capability, up to 95% efficiency
- ◆ Adjustable output voltage form 0.8V to 24V
- ◆ High delta V operation ($V_{IN} = 75V$ and $V_{OUT} = 0.8V$)
- ◆ Zero-ESR to high-ESR output capacitors
- ◆ 100kHz to 500kHz switching frequency
- ◆ Foldback current-limit and “hiccup” mode short-circuit protection
- ◆ Supports safe startup into a pre-biased load
- ◆ $-40^{\circ}C$ to $+125^{\circ}C$ junction temperature range
- ◆ 28-pin 5mm x 6mm MLF® package



MIC28511

60V 3A Synchronous Buck Regulator

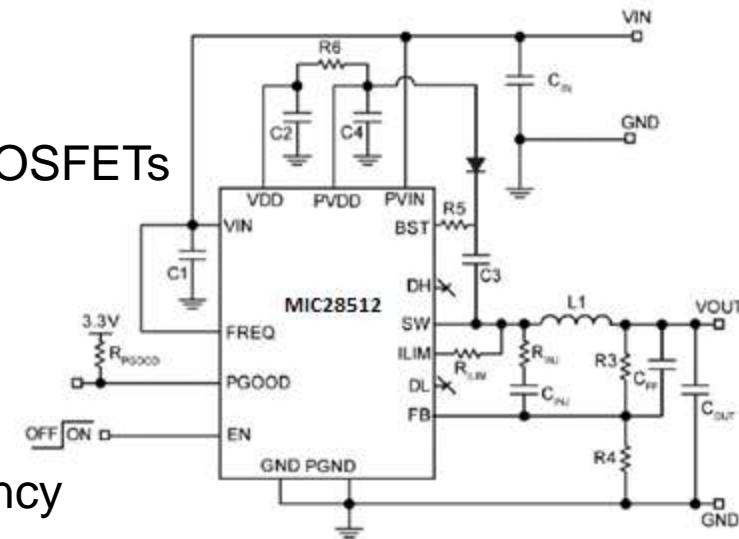
- ◆ 4.5V to 60V operating input voltage supply
- ◆ Up to 3A output current
- ◆ Integrated high-side and low-side N-channel MOSFETs
- ◆ HyperLight Load (MIC28511-1) architecture
- ◆ Hyper Speed Control (MIC28511-2) architecture
- ◆ Enable input and power good (PGOOD) output
- ◆ Programmable current limit
- ◆ Foldback “hiccup” mode short-circuit protection
- ◆ Built-in 5V regulator for single-supply operation
- ◆ Adjustable 200kHz to 600KHz switching frequency
- ◆ Fixed 5ms soft-start
- ◆ Internal compensation and thermal shutdown.
- ◆ Thermally-enhanced 24-pin 3mm × 4mm FCQFN package
- ◆ Junction temperature range of -40°C to $+125^{\circ}\text{C}$



MIC28512

70V 2A Synchronous Buck Regulator

- ◆ 4.5V to 70V operating input voltage supply
- ◆ Up to 2A output current
- ◆ Integrated high-side and low-side N-channel MOSFETs
- ◆ MIC28512-1: HyperLight Load architecture
- ◆ MIC28512-2: Hyper Speed Control architecture
- ◆ Enable input, Power Good output
- ◆ Built-in 5V regulator for single supply operation
- ◆ Adjustable 200kHz to 600kHz switching frequency
- ◆ Fixed 5ms soft-start
- ◆ Programmable current limit and foldback “hiccup” mode short circuit protection
- ◆ Internal compensation and thermal shutdown.
- ◆ Thermally enhanced 24-pin 3mm × 4mm FCQFN
- ◆ Junction temperature range of -40°C to $+125^{\circ}\text{C}$

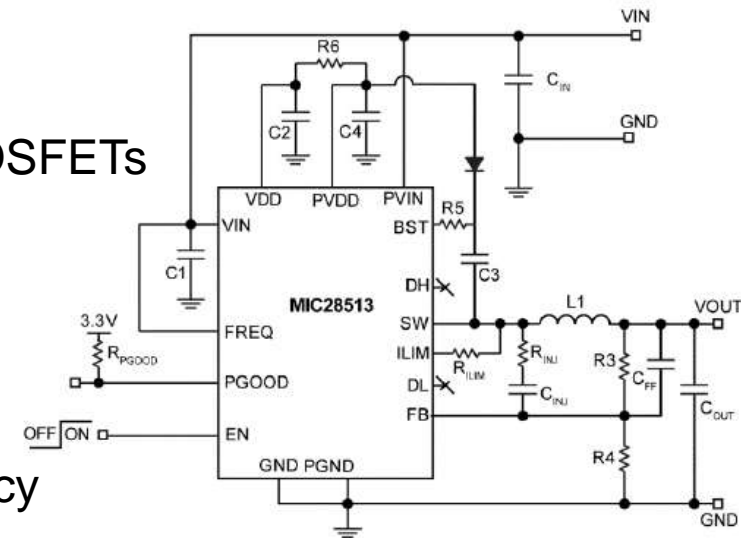




MIC28513

45V 4A Synchronous Buck Regulator

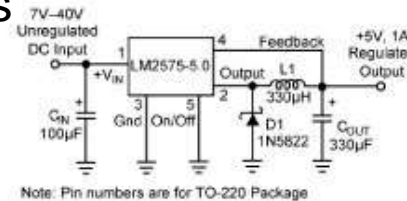
- ◆ 4.5V to 45V operating input voltage supply
- ◆ Up to 4A output current
- ◆ Integrated high-side and low-side N-channel MOSFETs
- ◆ MIC28513-1: HyperLight Load architecture
- ◆ MIC28513-2: Hyper Speed Control architecture
- ◆ Enable input, Power Good output
- ◆ Built-in 5V regulator for single supply operation
- ◆ Adjustable 200kHz to 600kHz switching frequency
- ◆ Fixed 5ms soft-start
- ◆ Programmable current limit and foldback “hiccup” mode short circuit protection
- ◆ Internal compensation and thermal shutdown.
- ◆ Thermally enhanced 24-pin 3mm × 4mm FCQFN
- ◆ Junction temperature range of -40°C to $+125^{\circ}\text{C}$



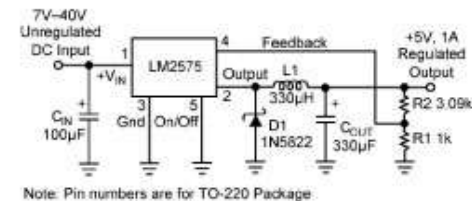
LM2576

52kHz Simple 3A Buck Regulator

- ◆ Requires only 4 external components
- ◆ Guaranteed 3A output current
- ◆ Wide input voltage range: 4V to 40V
- ◆ 3.3V, 5V, 12V, and adjustable output versions
- ◆ 100% electrical thermal limit burn-in
- ◆ Voltage over specified line and load conditions:
 - Fixed version: $\pm 3\%$ max. output voltage
 - Adjustable version: $\pm 2\%$ max. feedback voltage
- ◆ Wide output voltage range: 1.23V to 37V
- ◆ 52kHz fixed frequency internal oscillator
- ◆ Low power standby mode I_Q typically $< 200\mu A$
- ◆ 80% efficiency (adjustable version typically $> 80\%$)
- ◆ Uses readily available standard inductors
- ◆ Thermal shutdown and current limit protection



Fixed Regulator in Typical Application



Adjustable Regulator in Fixed Output Application

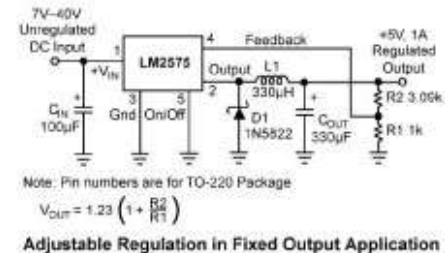
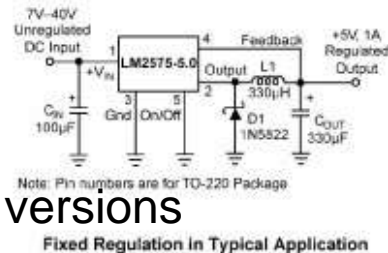
$$V_{OUT} = 1.23 \left(1 + \frac{R2}{R1} \right)$$



LM2575

52kHz Simple 1A Buck Regulator

- ◆ Guaranteed 1A output current
- ◆ 100% electrical thermal limit burn-in
- ◆ 3.3V, 5V, 12V, and adjustable output versions
- ◆ Voltage over specified line and load conditions:
 - Fixed version: $\pm 3\%$ max. output voltage
 - Adjustable version: $\pm 2\%$ max. feedback voltage
- ◆ Wide input voltage range: 4V to 40V
- ◆ Wide output voltage range: 1.23V to 37V
- ◆ Requires only 4 external components
- ◆ 52kHz fixed frequency internal oscillator
- ◆ Low power standby mode I_Q typically $< 200\mu A$
- ◆ 80% efficiency (adjustable version typically $> 80\%$)
- ◆ Uses readily available standard inductors
- ◆ Thermal shutdown and current limit protection

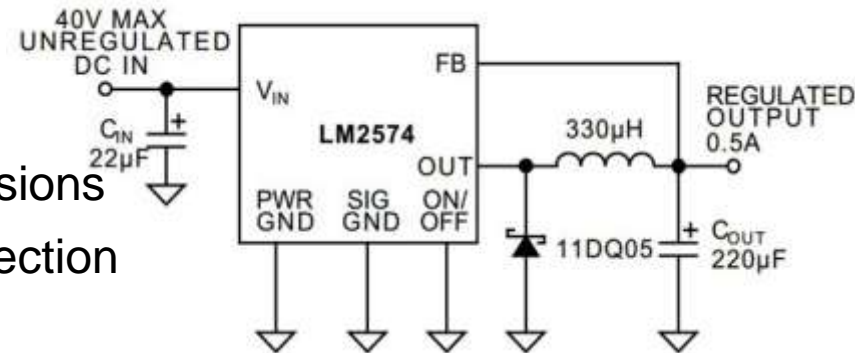




LM2574

52kHz Simple 0.5A Buck Regulator

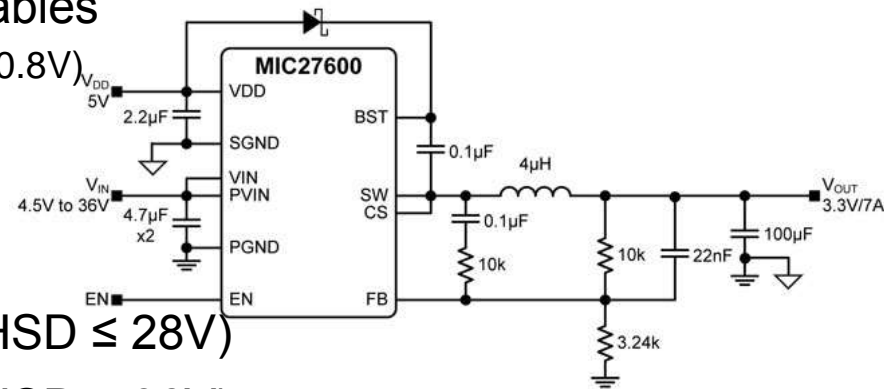
- ◆ Guaranteed 0.5A output current
- ◆ Wide input voltage, up to 40V
- ◆ 3.3V, 5V, 12V, and adjustable output versions
- ◆ Thermal shutdown and current limit protection
- ◆ Requires only 4 external components
- ◆ Adjustable version output 1.23V to 37V $\pm 4\%$ Max. over Line and Load conditions.
- ◆ Shutdown capability (standby mode)
- ◆ Low power standby mode < 200 μ A typical
- ◆ High efficiency
- ◆ 52kHz fixed frequency internal oscillator
- ◆ Uses standard inductors



MIC27600

36V, 7A Hyper Speed Control™ Synchronous DC-DC Buck Regulator

- ◆ Hyper Speed Control™ architecture enables
 - High delta V operation ($V_{IN} = 36V$ and $V_{OUT} = 0.8V$)
 - Small output capacitance
- ◆ 4.5V to 36V voltage input
- ◆ $\pm 1\%$ FB accuracy
- ◆ Adjustable output from 0.8V to 5.5V ($V_{HSD} \leq 28V$)
- ◆ Adjustable output from 0.8V to 3.6V ($V_{HSD} \leq 36V$)
- ◆ Any Capacitor™ Stable - Zero-ESR to high-ESR
- ◆ 7A output current capability, up to 95% efficiency
- ◆ 300kHz switching frequency
- ◆ Internal compensation, 6ms Internal soft-start
- ◆ Foldback current-limit and "hiccup" mode short-circuit protection
- ◆ $-40^{\circ}C$ to $+125^{\circ}C$ junction temperature range
- ◆ 28-pin 5mm - 6mm MLF® package

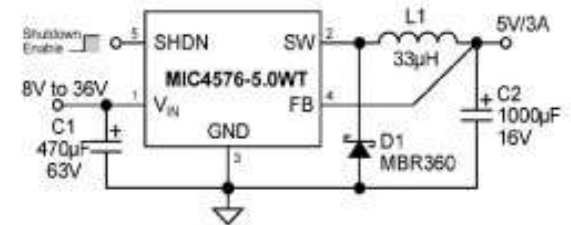




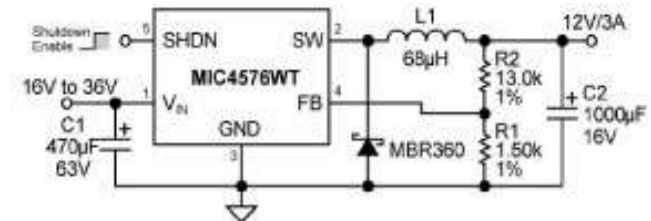
MIC4576

200kHz Simple 3A Buck Regulator

- ◆ Fixed 200kHz operation
- ◆ 3.3V, 5V, and adjustable output versions
- ◆ Voltage over specified line and load conditions:
 - Fixed version: $\pm 3\%$ max. output voltage
 - Adjustable version: $\pm 2\%$ max. feedback voltage
- ◆ Guaranteed 3A switch current
- ◆ Wide input voltage range: 4V to 36V
- ◆ Wide output voltage range: 1.23V to 33V
- ◆ Requires minimum external components
- ◆ $< 200\mu\text{A}$ typical shutdown mode
- ◆ 75% efficiency (adjustable version $> 75\%$ typical)
- ◆ Standard inductors are 25% of typical LM2576 values
- ◆ Thermal shutdown
- ◆ 100% electrical thermal limit burn-in



Fixed Regulator



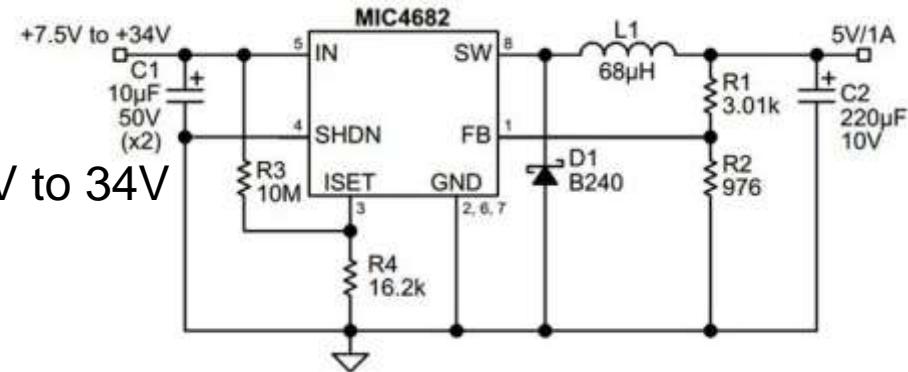
Adjustable Regulator



MIC4682

Precision Current Limit SO-8 SuperSwitcher™ Buck Regulator

- ◆ Programmable output current limit
 - 10% accuracy over temperature
- ◆ Wide operating input voltage range: 4V to 34V
- ◆ Fixed 200kHz PWM operation
- ◆ All surface mount solution
- ◆ Power SOIC-8 package allows 2A continuous output current
- ◆ Internally compensated
- ◆ Less than 1μA typical shutdown-mode current
- ◆ Thermal shutdown protection

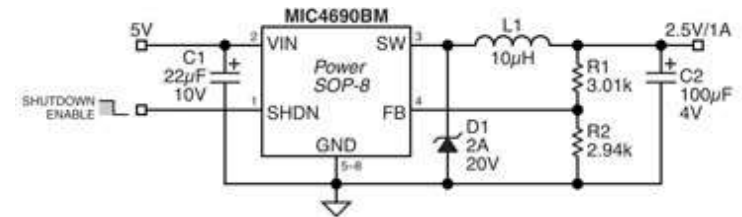




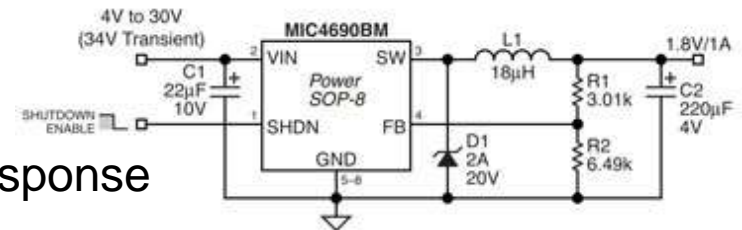
MIC4690

500kHz 1A SuperSwitcher™ Buck Regulator

- ◆ SO-8 package with over 1A output current
- ◆ Fixed 500kHz operation
- ◆ Wide 4V to 34V input voltage range
- ◆ Output voltage adjustable to 1.23V
- ◆ All surface mount solution
- ◆ Up to 85% efficiency
- ◆ Internally compensated with fast transient response
- ◆ Overcurrent protection
- ◆ Frequency foldback short-circuit protection
- ◆ Thermal shutdown



2.5V Adjustable Converter



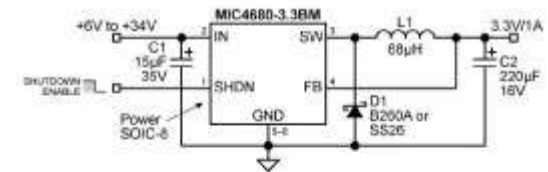
1.8V Adjustable Converter



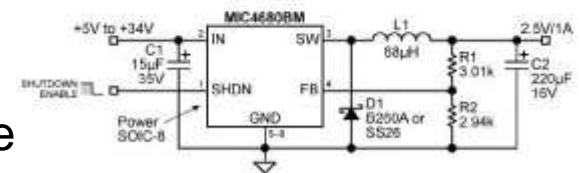
MIC4680

1A 200kHz SuperSwitcher™ Buck Regulator

- ◆ SOIC-8 package with up to 1.3A output current
- ◆ All surface mount solution
- ◆ Only 4 external components required
- ◆ Fixed 200kHz operation
- ◆ 3.3V, 5V, and adjustable output versions
- ◆ Internally compensated with fast transient response
- ◆ Wide operating input voltage range: 4V to 34V
- ◆ Less than 2μA typical shutdown-mode current
- ◆ Up to 90% efficiency
- ◆ Thermal shutdown
- ◆ Overcurrent protection



Fixed Regulator Circuit



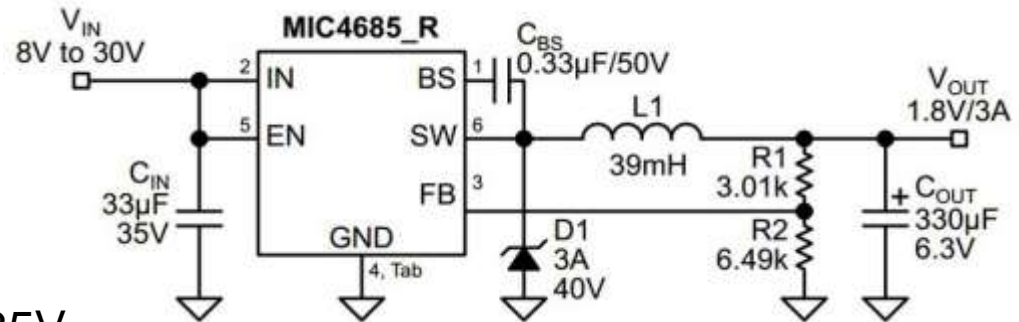
Adjustable Regulator Circuit



MIC4685

3A SPAK SuperSwitcher™ Buck Regulator

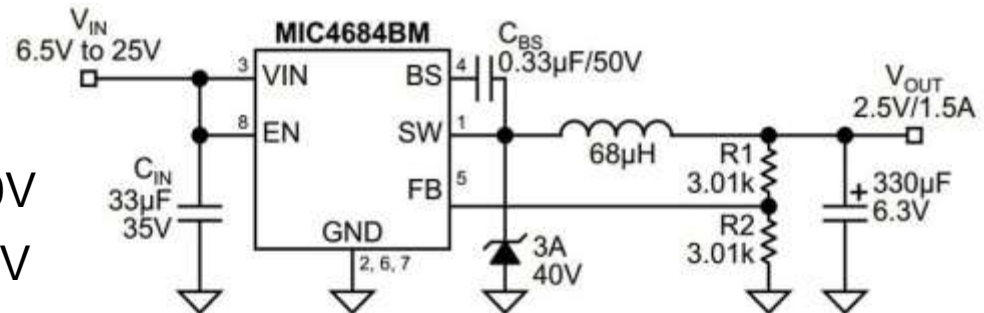
- ◆ Low 2mm profile SPAK package
- ◆ 3A continuous output current
- ◆ Fixed 200kHz PWM operation
- ◆ Over 85% efficiency
- ◆ Output voltage adjustable to 1.235V
- ◆ Wide input voltage range: 4V to 30V (34V transient)
- ◆ All surface mount solution
- ◆ Internally compensated with fast transient response
- ◆ Over-current protection
- ◆ Frequency foldback short-circuit protection
- ◆ Thermal shutdown



MIC4684

2A High-Efficiency Buck Regulator

- ◆ Over 85% efficiency
- ◆ Fixed 200kHz PWM operation
- ◆ Wide input voltage range: 4V to 30V
- ◆ Output voltage adjustable to 1.235V
- ◆ All surface mount solution
- ◆ SO-8 package with 2A continuous output current
- ◆ Internally compensated with fast transient response
- ◆ Over-current protection
- ◆ Frequency foldback short-circuit protection
- ◆ Thermal shutdown

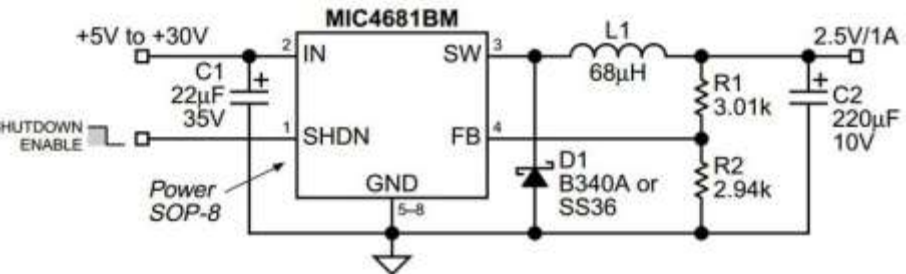




MIC4681

2A-peak Current SuperSwitcher™ Buck Regulator

- ◆ All surface mount solution
- ◆ Only 4 external components required
- ◆ Fixed 200kHz operation
- ◆ Output adjustable down to 1.25V
- ◆ Internally compensated with fast transient response
- ◆ SO-8 package with over 1A continuous output current
- ◆ Capable of 2A pulse charging for GSM applications
- ◆ Wide operating input voltage range: 4V to 30V
- ◆ Less than 6μA typical shutdown-mode current
- ◆ Up to 90% efficiency
- ◆ Thermal shutdown
- ◆ Overcurrent protection



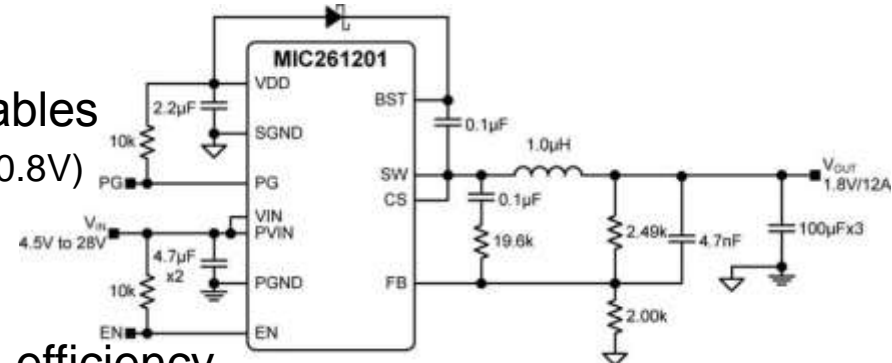
Adjustable Regulator Circuit



MIC261201

28V, 12A Hyper Speed Control™ Synchr DC/DC Buck Regulator SuperSwitcher II™

- ◆ Hyper Speed Control™ architecture enables
 - High delta V operation ($V_{IN} = 28V$ and $V_{OUT} = 0.8V$)
 - Small output capacitance
- ◆ 4.5V to 28V voltage input
- ◆ 12A output current capability, up to 95% efficiency
- ◆ Adjustable output from 0.8V to 5.5V
- ◆ $\pm 1\%$ feedback accuracy
- ◆ Any Capacitor® stable - zero-to-high ESR
- ◆ 600kHz switching frequency
- ◆ No external compensation
- ◆ Power Good (PG) output
- ◆ Foldback current-limit and "hiccup" mode short-circuit protection
- ◆ $-40^{\circ}C$ to $+125^{\circ}C$ junction temperature range
- ◆ 28-pin 5mm x 6mm MLF® package

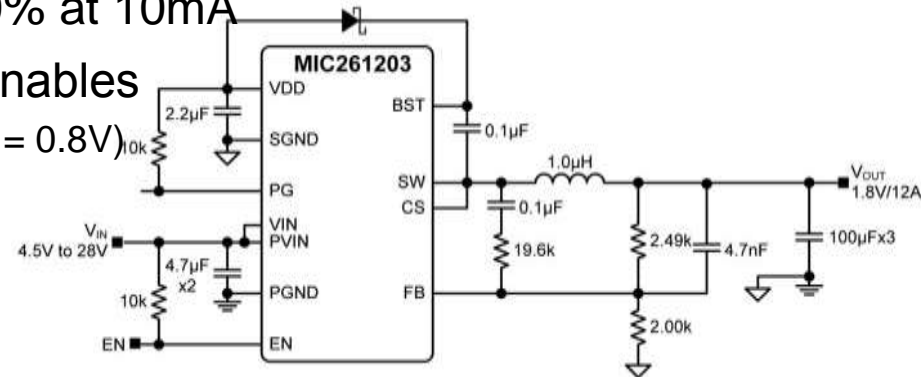




MIC261203

28V, 12A HyperLight Load® Synchronous DC/DC Buck Regulator SuperSwitcher IIG™

- ◆ HyperLight Load® efficiency - up to 80% at 10mA
- ◆ Hyper Speed Control™ architecture enables
 - High delta V operation ($V_{IN} = 28V$ and $V_{OUT} = 0.8V$)
 - Small output capacitance
 - Input voltage range: 4.5V to 28V
 - Output current up to 12A
 - Up to 95% efficiency
 - Adjustable output voltage from 0.8V to 5.5V
- ◆ $\pm 1\%$ FB accuracy
- ◆ Any Capacitor™ stable - zero-to-high ESR
- ◆ 600kHz switching frequency
- ◆ Power Good (PG) output
- ◆ Foldback current-limit and "hiccup" mode short-circuit protection
- ◆ 5mm x 6mm MLF® package
- ◆ $-40^{\circ}C$ to $+125^{\circ}C$ junction temperature range

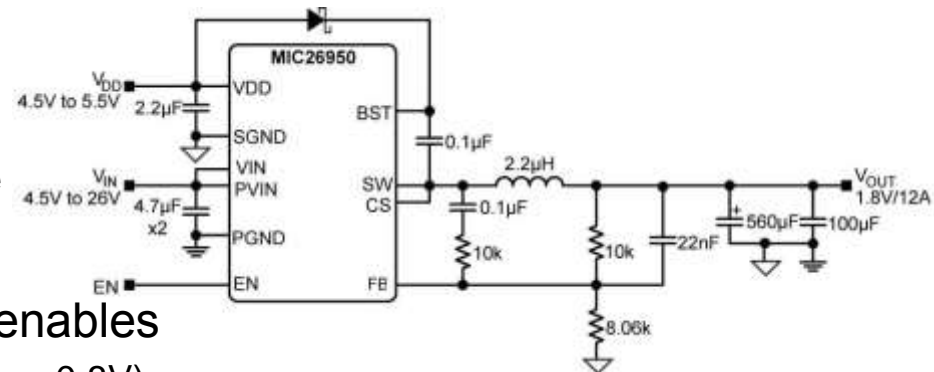




MIC26950

12A Hyper Speed Control™ Synchronous DC-DC Buck Regulator

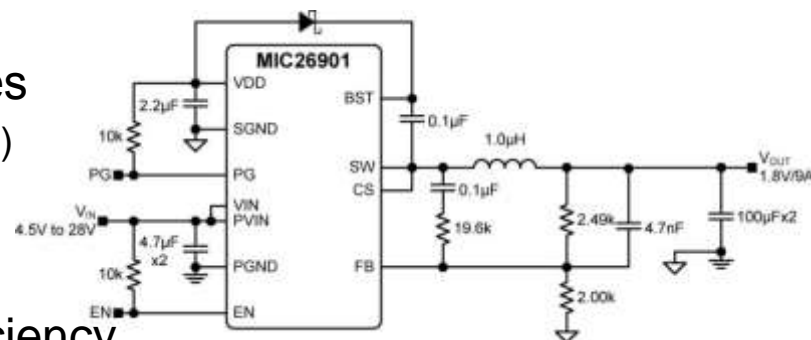
- ◆ 4.5V to 26V input voltage
- ◆ Any Capacitor™ Stable
 - Zero ESR to high-ESR output capacitance
- ◆ 12A output current capability
- ◆ Hyper Speed Control™ architecture enables
 - High delta V operation ($V_{IN} = 26V$ and $V_{OUT} = 0.8V$)
 - Small output capacitance
- ◆ 300kHz switching frequency
- ◆ Adjustable output from 0.8V to 5.5V ($\pm 1\%$ accuracy)
- ◆ Up to 95% efficiency
- ◆ 6ms Internal soft-start
- ◆ Foldback current-limit and "hiccup" mode short-circuit protection
- ◆ $-40^{\circ}C$ to $+125^{\circ}C$ junction temperature range
- ◆ 28-pin 5mm x 6mm MLF® package



MIC26901

28V, 9A Hyper Speed Control™ Synchronous DC/DC Buck Regulator SuperSwitcher II™

- ◆ Hyper Speed Control™ architecture enables
 - High delta V operation ($V_{IN} = 28V$ and $V_{OUT} = 0.8V$)
 - Small output capacitance
- ◆ 4.5V to 28V voltage input
- ◆ 9A output current capability, up to 95% efficiency
- ◆ Adjustable output from 0.8V to 5.5V
- ◆ $\pm 1\%$ feedback accuracy
- ◆ Any Capacitor™ stable -zero-to-high ESR
- ◆ 600kHz switching frequency
- ◆ No external compensation
- ◆ Foldback current-limit and "hiccup mode" short-circuit protection
- ◆ Supports safe startup into a pre-biased load
- ◆ $-40^{\circ}C$ to $+125^{\circ}C$ junction temperature range
- ◆ 28-pin 5mm x 6mm MLF® package

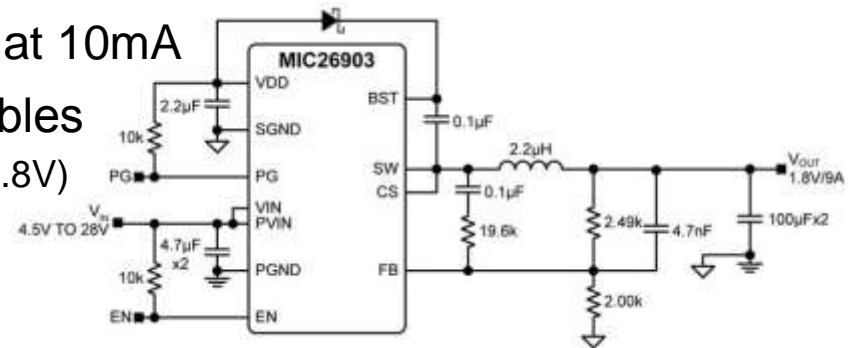




MIC26903

28V, 9A HyperLight Load® Synchronous DC/DC Buck Regulator SuperSwitcher IIG™

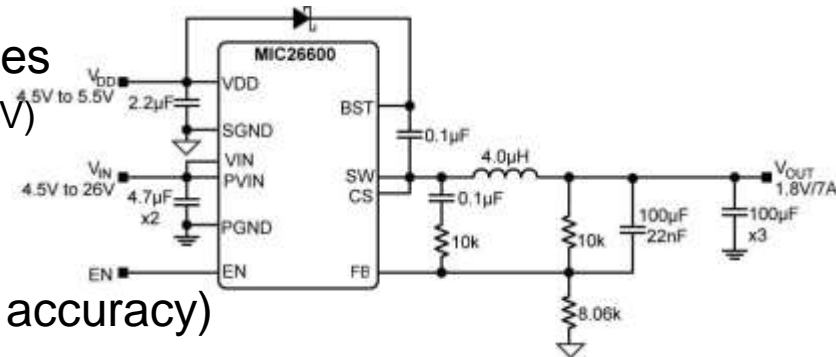
- ◆ HyperLight Load® efficiency - up to 80% at 10mA
- ◆ Hyper Speed Control™ architecture enables
 - High delta V operation ($V_{IN} = 28V$ and $V_{OUT} = 0.8V$)
 - Small output capacitance
 - Input voltage range: 4.5V to 28V
 - Output current up to 9A
 - Up to 95% efficiency
 - Adjustable output voltage from 0.8V to 5.5V
- ◆ $\pm 1\%$ FB accuracy
- ◆ Any Capacitor™ stable - zero-to-high ESR
- ◆ 600kHz switching frequency
- ◆ Power Good (PG) output
- ◆ Foldback current-limit and "hiccup" mode short-circuit protection
- ◆ 5mm x 6mm MLF® package
- ◆ $-40^{\circ}C$ to $+125^{\circ}C$ junction temperature range



MIC26600

7A Hyper Speed Control™ Synchronous DC-DC Buck Regulator SuperSwitcher II™

- ◆ Hyper Speed Control™ architecture enables
 - High delta V operation ($V_{IN} = 26V$ and $V_{OUT} = 0.8V$)
 - Small output capacitance
- ◆ 4.5V to 26V input voltage
- ◆ Adjustable output from 0.8V to 5.5V ($\pm 1\%$ accuracy)
- ◆ Any Capacitor™ Stable
 - Zero ESR to high ESR output capacitance
- ◆ 7A output current capability
- ◆ 300kHz switching frequency
- ◆ Up to 95% efficiency
- ◆ 6ms Internal soft-start
- ◆ Foldback current limit and "hiccup" mode short-circuit protection
- ◆ $-40^{\circ}C$ to $+125^{\circ}C$ junction temperature range
- ◆ 28-pin 5mm x 6mm MLF® package

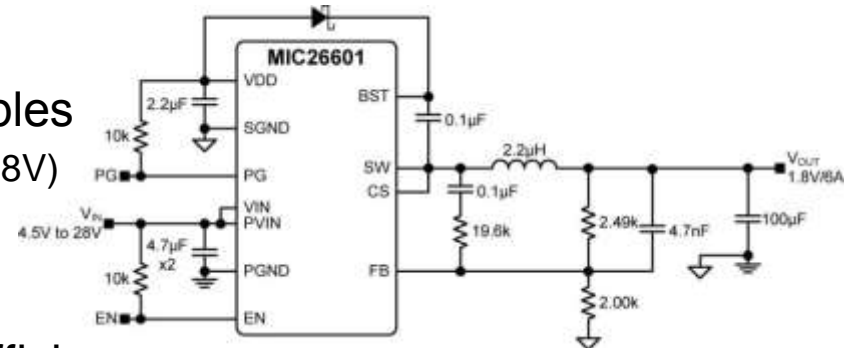




MIC26601

28V, 6A Hyper Speed Control™ Synchronous DC/DC Buck Regulator SuperSwitcher II™

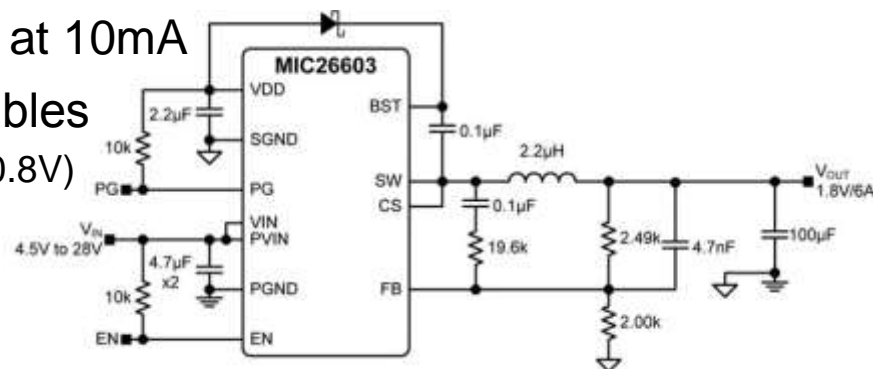
- ◆ Hyper Speed Control™ architecture enables
 - High delta V operation ($V_{IN} = 28V$ and $V_{OUT} = 0.8V$)
 - Small output capacitance
- ◆ 4.5V to 28V voltage input
- ◆ 6A output current capability, up to 95% efficiency
- ◆ Adjustable output from 0.8V to 5.5V
- ◆ $\pm 1\%$ feedback accuracy
- ◆ Any Capacitor™ stable - zero-to-high ESR
- ◆ 600kHz switching frequency
- ◆ No external compensation
- ◆ Power Good (PG) output
- ◆ Foldback current-limit and "hiccup mode" short-circuit protection
- ◆ $-40^{\circ}C$ to $+125^{\circ}C$ junction temperature range
- ◆ 28-pin 5mm x 6mm MLF® package



MIC26603

28V, 6A HyperLight Load® Synchronous DC/DC Buck Regulator SuperSwitcher IIG™

- ◆ HyperLight Load® efficiency - up to 80% at 10mA
- ◆ Hyper Speed Control™ architecture enables
 - High delta V operation ($V_{IN} = 28V$ and $V_{OUT} = 0.8V$)
 - Small output capacitance
 - Input voltage range: 4.5V to 28V
 - Output current up to 6A
 - Up to 95% efficiency
 - Adjustable output voltage from 0.8V to 5.5V
- ◆ $\pm 1\%$ FB accuracy
- ◆ Any Capacitor™ stable - zero-to-high ESR
- ◆ 600kHz switching frequency
- ◆ Foldback current-limit and "hiccup" mode short-circuit protection
- ◆ Safe start-up into pre-biased loads
- ◆ 5mm x 6mm MLF® package
- ◆ $-40^{\circ}C$ to $+125^{\circ}C$ junction temperature range

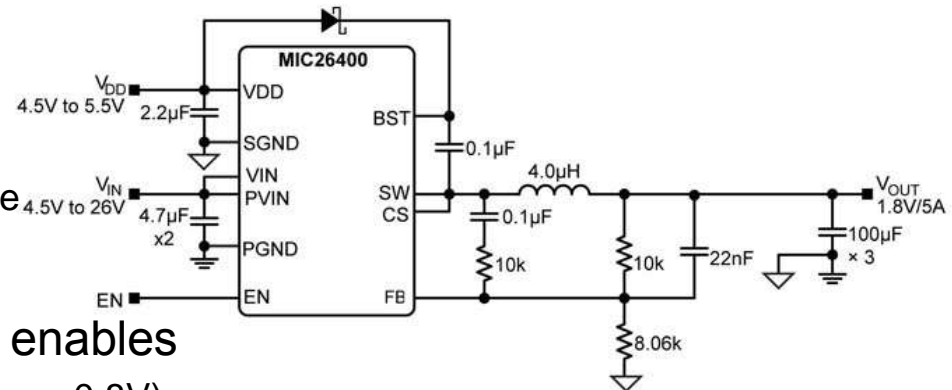




MIC26400

5A Hyper Speed Control™ Synchronous DC/DC Buck Regulator SuperSwitcher II™

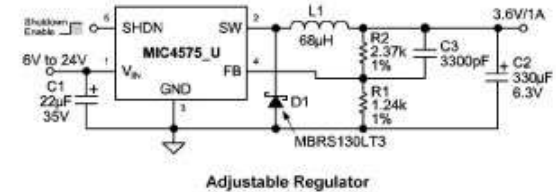
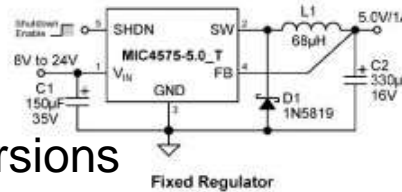
- ◆ 4.5V to 26V input voltage
- ◆ Any Capacitor™ Stable
 - Zero ESR to high-ESR output capacitance
- ◆ 5A output current capability
- ◆ Hyper Speed Control™ architecture enables
 - High delta V operation ($V_{IN} = 26V$ and $V_{OUT} = 0.8V$)
 - Small output capacitance
- ◆ Adjustable output from 0.8V to 5.5V ($\pm 1\%$ accuracy)
- ◆ 300kHz switching frequency
- ◆ Up to 95% efficiency
- ◆ 6ms Internal soft-start
- ◆ Foldback current limit and "hiccup" mode short-circuit protection
- ◆ $-40^{\circ}C$ to $+125^{\circ}C$ junction temperature range
- ◆ 28-pin 5mm X 6mm MLF® package



MIC4575

200kHz Simple 1A Buck Regulator

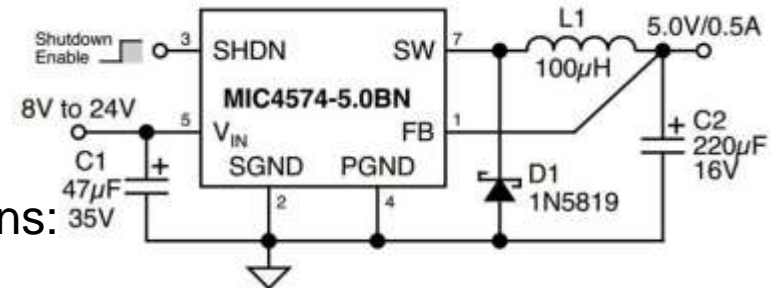
- ◆ Fixed 200kHz operation
- ◆ 3.3V, 5V, and adjustable output versions
- ◆ Voltage over specified line and load conditions:
- ◆ Fixed version: $\pm 3\%$ max. output voltage
- ◆ Adjustable version: $\pm 2\%$ max. feedback voltage
- ◆ Guaranteed 1A switch current
- ◆ Wide input voltage range: 4V to 24V
- ◆ Wide output voltage range: 1.23V to 20V
- ◆ Requires minimum external components
- ◆ $< 200\mu\text{A}$ typical shutdown mode
- ◆ 75% efficiency (adjustable version $> 75\%$ typical)
- ◆ Standard inductors and capacitors are 25% of typical LM2575 values.
- ◆ 100% electrical thermal limit burn-in



MIC4574

200kHz Simple 0.5A Buck Regulator

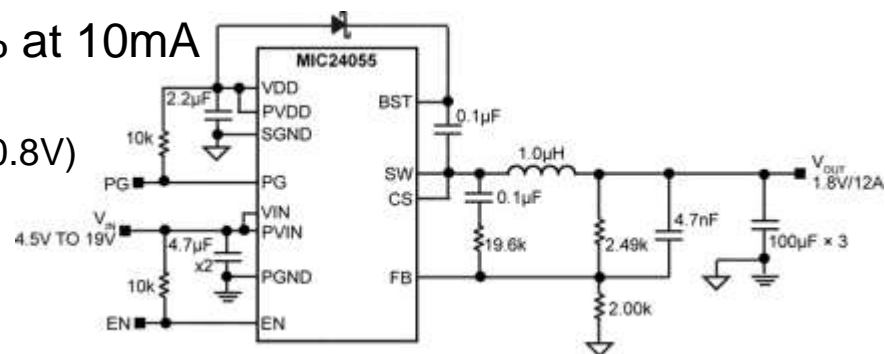
- ◆ Fixed 200kHz operation
- ◆ 3.3V, 5V, and adjustable output versions
- ◆ Voltage over specified line and load conditions:
 - Fixed version: $\pm 3\%$ max. output voltage
 - Adjustable version: $\pm 2\%$ max. feedback voltage
- ◆ Guaranteed 0.5A switch current
- ◆ Wide input voltage range: 4V to 24V
- ◆ Wide output voltage range: 1.23V to 20V
- ◆ Requires minimum external components
- ◆ $< 200\mu\text{A}$ typical shutdown mode
- ◆ 75% efficiency (adjustable version $> 75\%$ typ.)
- ◆ Standard inductors and capacitors are
- ◆ 25% of typical LM2574 values
- ◆ 100% electrical thermal limit burn-in



MIC24055/56

12V, 12A High-Efficiency Buck Regulator SuperSwitcher II™

- ◆ HyperLight Load® efficiency – up to 80% at 10mA
 - Hyper Speed Control™ architecture enables
 - High delta V operation ($V_{IN} = 19V$ and $V_{OUT} = 0.8V$)
- ◆ Small output capacitance
- ◆ Input voltage range: 4.5V to 19V
- ◆ Output current up to 12A
- ◆ Up to 95% efficiency
- ◆ Adjustable output voltage from 0.8V to 5.5V
- ◆ $\pm 1\%$ feedback accuracy
- ◆ Any Capacitor™ stable - zero-to-high ESR
- ◆ 600kHz switching frequency
- ◆ Foldback current-limit and "hiccup" mode short-circuit protection
- ◆ $-40^{\circ}C$ to $+125^{\circ}C$ junction temperature range
- ◆ Available in 28-pin 5mm x 6mm QFN package

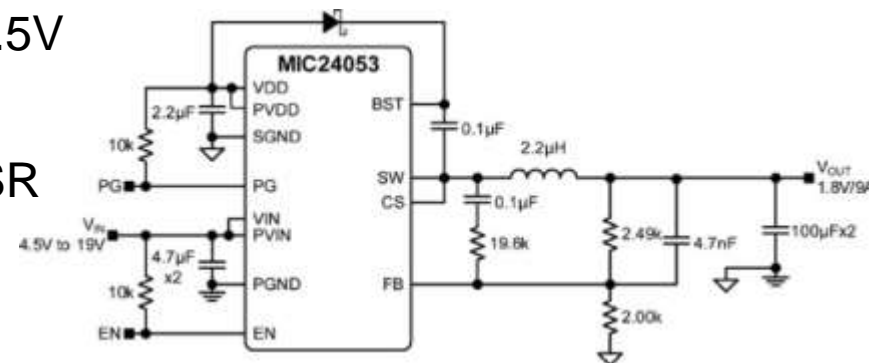




MIC24053/54

12V, 9A High-Efficiency Buck Regulator SuperSwitcher II™

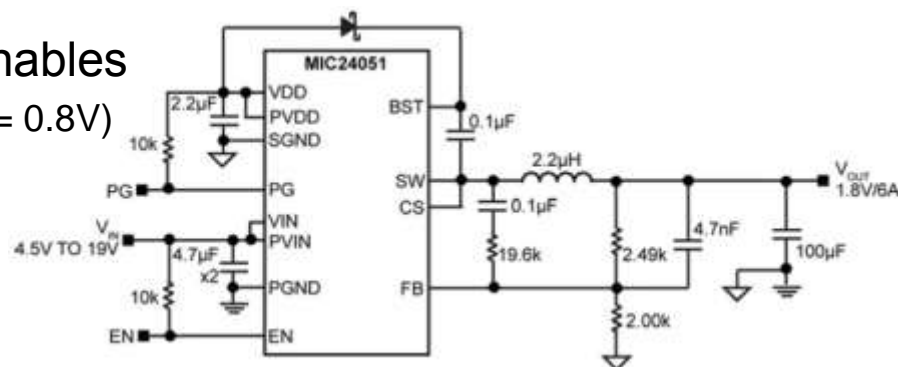
- ◆ HyperLight Load® efficiency - up to 80% at 10mA
- ◆ Hyper Speed Control™ architecture enables
 - High delta V operation ($V_{IN} = 19V$ and $V_{OUT} = 0.8V$)
 - Small output capacitance
- ◆ Input voltage range: 4.5V to 19V
- ◆ Output current up to 9A, up to 95% efficiency
- ◆ Adjustable output voltage from 0.8V to 5.5V
- ◆ $\pm 1\%$ feedback accuracy
- ◆ Any Capacitor™ stable - zero-to-high ESR
- ◆ 600kHz switching frequency
- ◆ No external compensation
- ◆ Foldback current-limit and "hiccup" mode short-circuit protection
- ◆ Supports safe start-up into pre-biased loads
- ◆ $-40^{\circ}C$ to $+125^{\circ}C$ junction temperature range
- ◆ Available in 28-pin 5mm x 6mm QFN package



MIC24051/52

12V, 6A High-Efficiency Buck Regulator SuperSwitcher II™

- ◆ Hyper Speed Control™ architecture enables
 - High delta V operation ($V_{IN} = 19V$ and $V_{OUT} = 0.8V$)
 - Small output capacitance
- ◆ 4.5V to 19V input voltage
- ◆ No external compensation
- ◆ Any Capacitor™ stable & Zero-to-high ESR
- ◆ 6A output current capability, up to 95% efficiency
- ◆ 600kHz switching frequency
- ◆ Adjustable output from 0.8V to 5.5V ($\pm 1\%$ accuracy)
- ◆ Power Good (PG) output
- ◆ Foldback current limit and "hiccup" mode short-circuit protection
- ◆ Supports safe start-up into a pre-biased load
- ◆ $-40^{\circ}C$ to $+125^{\circ}C$ junction temperature range
- ◆ Available in 28-pin 5mm X 6mm QFN package

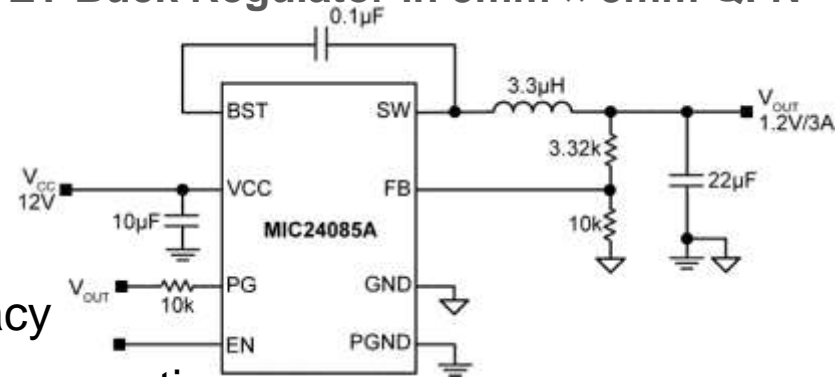




MIC24085

18V, 3A, 1MHz, High-Performance, Integrated FET Buck Regulator in 3mm × 3mm QFN

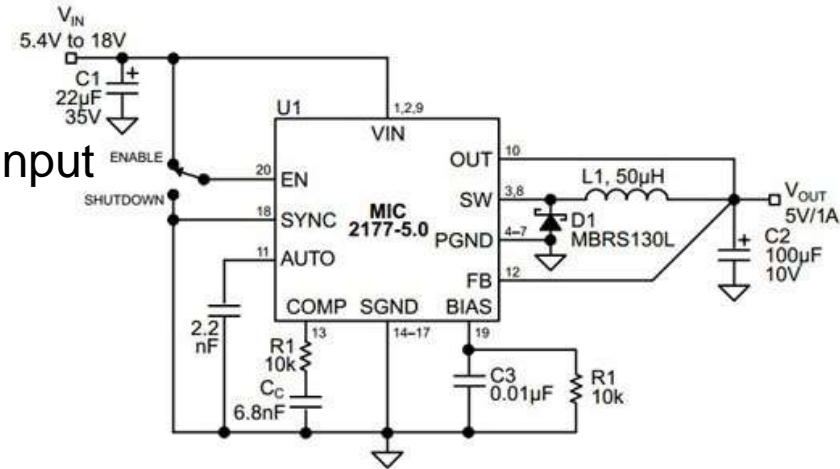
- ◆ Input voltage range 4.5V to 18V
- ◆ 3A output current
- ◆ 1MHz switching frequency
- ◆ 0.9V reference voltage with $\pm 1.5\%$ accuracy
- ◆ Peak current-mode PWM with internal compensation
- ◆ PFM mode for light load efficiency
- ◆ Fixed output voltages are available at: 1.5V, 1.8V, 2.5V, 3.3V, and 5V
- ◆ 10 μ A typical shutdown current
- ◆ 4ms internal soft start
- ◆ Cycle-by-cycle current limit with frequency foldback
- ◆ Enable input/power good (PG) output
- ◆ Thermal-shutdown protection
- ◆ -40°C to +125°C junction temperature range
- ◆ Available in 16-pin 3mm x 3mm QFN package



MIC2177

2.5A Synchronous Buck Regulator

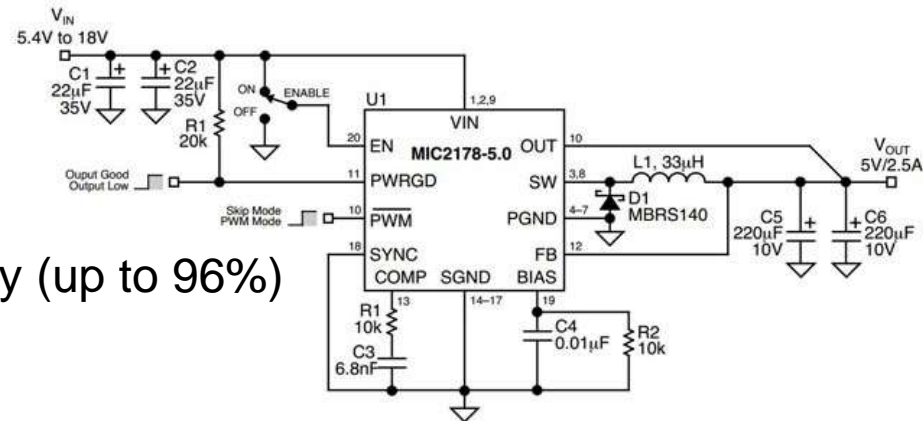
- ◆ 4.5V to 16.5V input voltage range
- ◆ 100 mΩ internal power MOSFETs at 12V input
- ◆ 200kHz preset switching frequency
- ◆ Low quiescent current
 - 1.0mA in PWM mode
 - 500μA in skip mode
 - < 5μA in shutdown mode
- ◆ 100% duty cycle for low dropout operation
- ◆ Dual-mode operation for high efficiency (up to 96%)
 - PWM mode for > 200mA load current
 - Skip mode for < 200mA load current
- ◆ Current-mode control
 - Simplified loop compensation
 - Superior line regulation
- ◆ Thermal shutdown
- ◆ Undervoltage lockout



MIC2178

2.5A Synchronous Buck Regulator

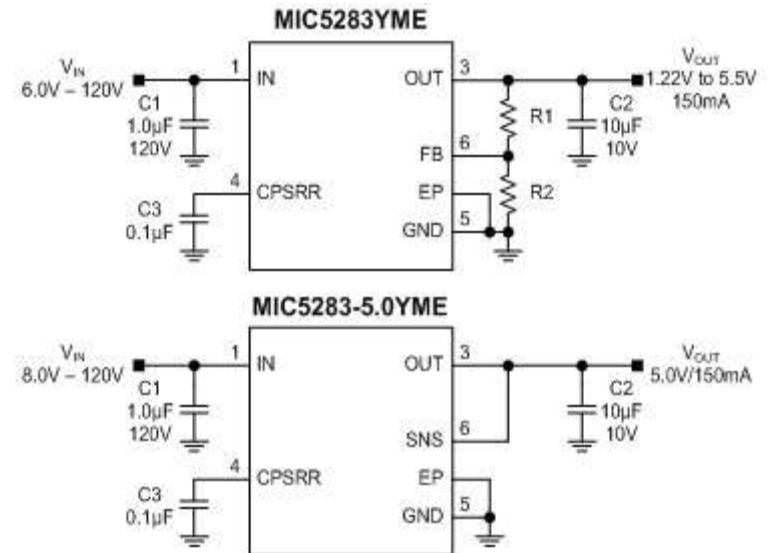
- ◆ 4.5V to 16.5V input voltage range
- ◆ Undervoltage lockout
- ◆ 200kHz preset switching frequency
- ◆ Dual-mode operation for high efficiency (up to 96%)
 - PWM mode for > 200mA load current
 - Skip mode for < 200mA load current
- ◆ Low quiescent current
 - 1.0mA in PWM mode
 - 600μA in skip mode
 - < 5μA in shutdown mode
- ◆ Current-mode control
 - Simplified loop compensation
 - Superior line regulation
- ◆ 100% duty cycle for low dropout operation
- ◆ Thermal shutdown
- ◆ 100mΩ internal power MOSFETs at 12V input



MIC5283

120VIN, 150mA, Ultra-Low IQ, High-PSRR Linear Regulator

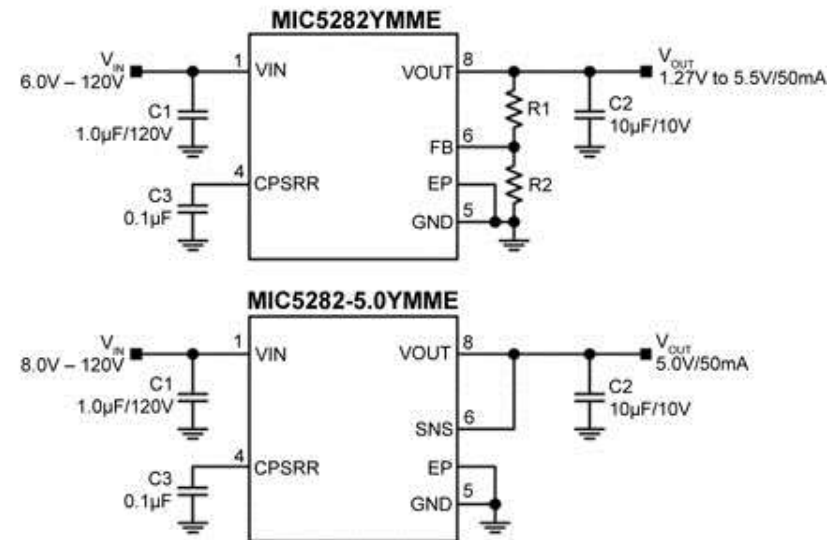
- ◆ Wide input voltage range: 6V to 120V DC
- ◆ Ultra-low quiescent current: 8 μ A
- ◆ 150mA guaranteed output current
- ◆ Adjustable output from 1.22V to 5.5V
- ◆ Stable with ceramic output capacitors
- ◆ Ultra-high PSRR (75dB at 10kHz)
- ◆ Ultra-high line rejection (load dump)
- ◆ High output accuracy:
 - $\pm 3\%$ initial accuracy
- ◆ Thermal shutdown and current limit protection
- ◆ Thermally efficient 8-pin ePad SOIC packages
- ◆ Very low profile 3mm x 3mm MLF[®] package



MIC5282

120VIN, 50mA, Ultra-Low IQ, High-PSRR Linear Regulator

- ◆ Wide input voltage range: 6V to 120V DC
- ◆ Ultra-low quiescent current: 6 μ A
- ◆ 50mA guaranteed output current
- ◆ Adjustable output from 1.27V to 5.5V
- ◆ Withstands up to +120V DC at the input
- ◆ Stable with ceramic output capacitors
- ◆ Ultra-high PSRR (80dB at 10kHz)
- ◆ Ultra-high line rejection (load dump)
- ◆ High output accuracy:
 - $\pm 3\%$ initial accuracy
- ◆ Thermal shutdown and current limit protection
- ◆ Thermally efficient, 8-pin MSOP and 8-pin ePad MSOP packages

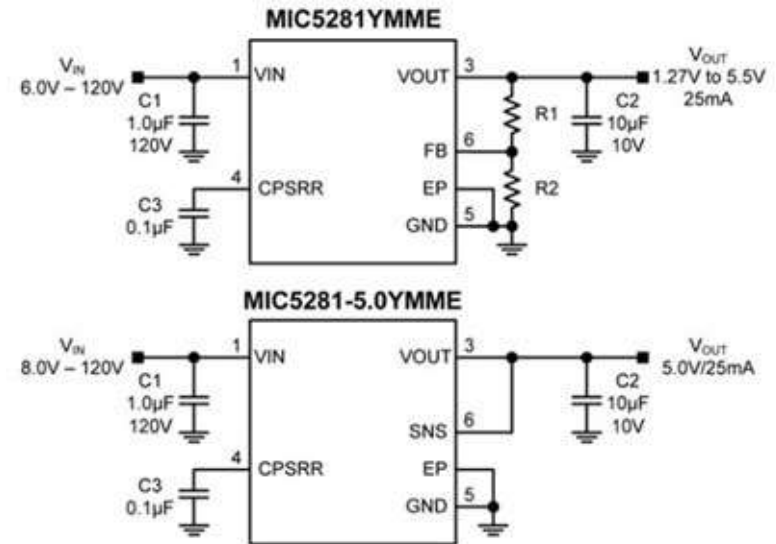




MIC5281

120VIN, 25mA, Ultra-Low IQ, High-PSRR Linear Regulator

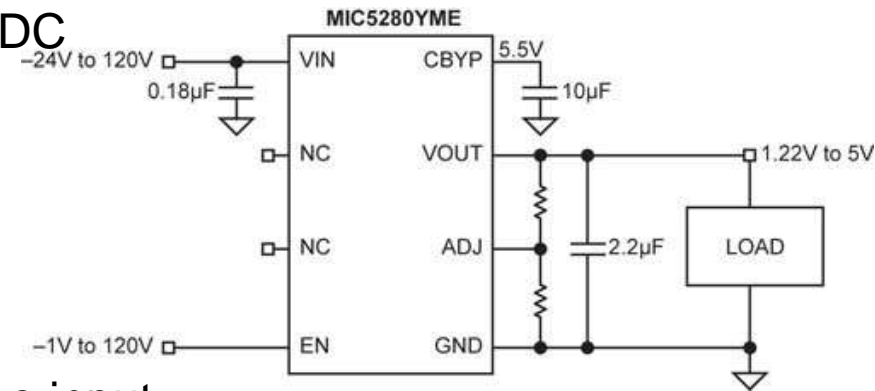
- ◆ Wide input voltage range: 6V to 120V DC
- ◆ Ultra-low quiescent current: 6 μ A
- ◆ 25mA guaranteed output current
- ◆ Adjustable output from 1.27V to 5.5V
- ◆ Withstands up to +120V DC at the input
- ◆ Stable with ceramic output capacitors
- ◆ Ultra-high PSRR <90dB
- ◆ Ultra-high line rejection (load dump)
- ◆ High output accuracy:
 - $\pm 3\%$ initial accuracy
- ◆ Thermal shutdown and current limit protection
- ◆ Thermally efficient 8-pin MSOP and 8-pin ePad MSOP packages



MIC5280

25mA, 120V, Low IQ, High-PSRR LDO

- ◆ Wide input voltage range: 4.5V to 120V DC
- ◆ Very low quiescent current: 31 μ A typical
- ◆ 25mA guaranteed output current
- ◆ Adjustable output from 1.215V to 5V
- ◆ DC voltage protection down to -24V
- ◆ Ability to withstand up to +120V DC at the input
- ◆ Stable with ceramic output capacitors
- ◆ Ultra-high PSRR >80dB for RF applications
- ◆ High output accuracy
 - $\pm 2\%$ initial accuracy
 - $\pm 3\%$ over temperature (-40°C to +125°C)
- ◆ Thermal shutdown and current limit protection
- ◆ Thermally efficient 8-pin ePad SOIC package

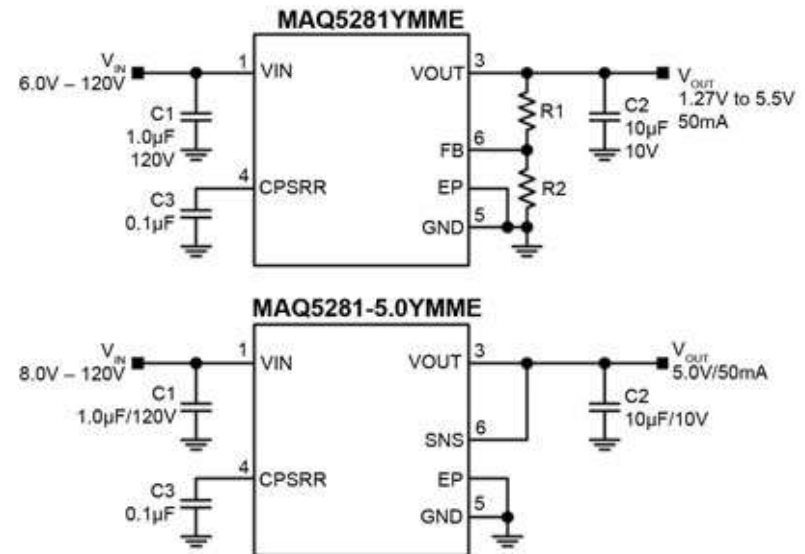




MAQ5281

120VIN, 25mA, Ultra-Low IQ, High-PSRR Linear Regulator

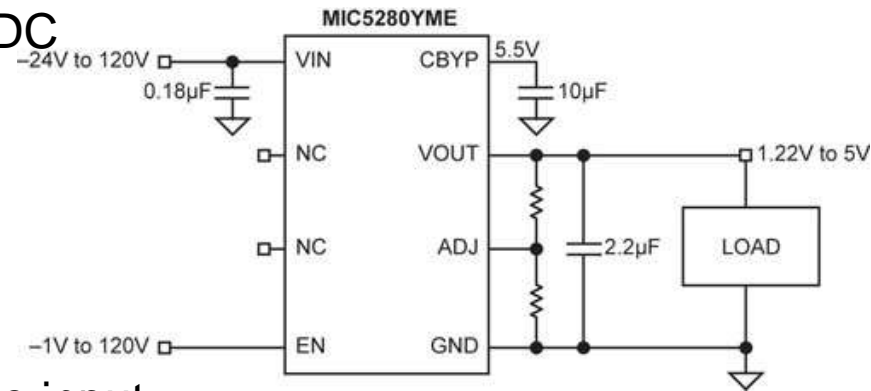
- ◆ Wide input voltage range: 6V to 120V DC
- ◆ Ultra-low quiescent current: 6 μ A
- ◆ 25mA guaranteed output current
- ◆ Adjustable output from 1.27V to 5.5V
- ◆ Withstands up to +120V DC at the input
- ◆ Stable with ceramic output capacitors
- ◆ Ultra-high PSRR <90dB
- ◆ Ultra-high line rejection (load dump)
- ◆ High output accuracy:
 - $\pm 3\%$ initial accuracy
- ◆ Thermal shutdown and current limit protection
- ◆ Thermally efficient 8-pin ePad MSOP package



MAQ5280

25mA, 120V, Low IQ, High-PSRR LDO

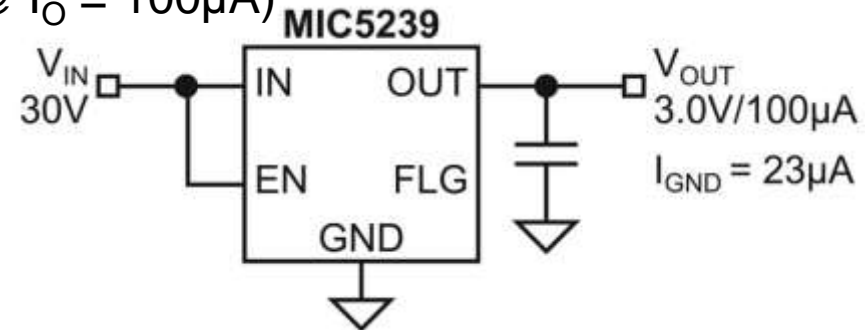
- ◆ Wide input voltage range: 4.5V to 120V DC
- ◆ Very low quiescent current: 31 μ A typical
- ◆ 25mA guaranteed output current
- ◆ Adjustable output from 1.215V to 5V
- ◆ DC voltage protection down to -24V
- ◆ Ability to withstand up to +120V DC at the input
- ◆ Stable with ceramic output capacitors
- ◆ Ultra high PSRR >80dB for RF applications
- ◆ High output accuracy
 - $\pm 2\%$ initial accuracy
 - $\pm 3\%$ over temperature (-40°C to +125°C)
- ◆ Thermal shutdown and current limit protection
- ◆ Thermally efficient 8-pin ePad SOIC package
- ◆ AEC-Q100 qualified



MIC5239

Low Quiescent Current 500mA μ Cap LDO Regulator

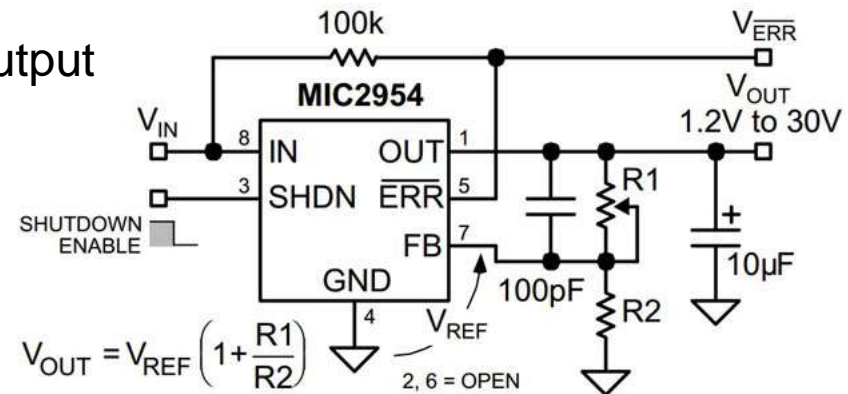
- ◆ Ultra-low quiescent current ($I_Q = 23\mu A$ @ $I_O = 100\mu A$)
- ◆ Continuous 500mA output current
- ◆ Wide input range: 2.3V to 30V
- ◆ Low dropout voltage: 350mV at 500mA
- ◆ $\pm 1.0\%$ initial output accuracy
- ◆ Stable with ceramic or tantalum output capacitor
- ◆ Logic-compatible enable input
- ◆ Low output voltage error flag indicator
- ◆ Overcurrent protection
- ◆ Thermal shutdown
- ◆ Reverse leakage protection
- ◆ Reverse battery protection
- ◆ High power SOIC-8, MSOP-8 and SOT-223 packages



MIC2954

250mA Low-Dropout Regulator

- ◆ High-accuracy: 5V, guaranteed 250mA output
- ◆ Low quiescent current
- ◆ Low dropout voltage
- ◆ Extremely tight load and line regulation
- ◆ Very low temperature coefficient
- ◆ Current and thermal limiting
- ◆ Input can withstand -20V reverse battery and +60V positive transients
- ◆ Error flag warns of low output voltage
- ◆ Logic-controlled electronic shutdown
- ◆ Output programmable from 1.24V to 29V (MIC2954-07/08)
- ◆ Available in TO-220, TO-92, and surface-mount SOT-223 and SOP-8 packages

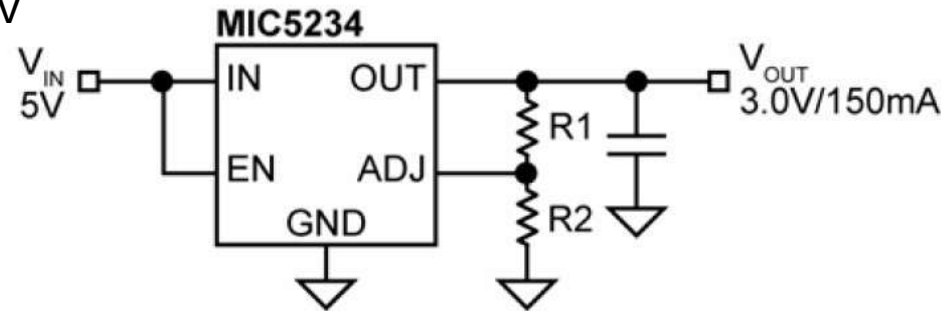




MIC5234

Low-Quiescent Current 150mA LDO Regulator

- ◆ Ultra-low quiescent current (I_Q equals $20\mu A$ at I_O equals $100\mu A$)
- ◆ Wide input voltage range: 2.3V to 30V
- ◆ Low dropout:
 - 230mV at 50mA
 - 320mV at 150mA
- ◆ Adjustable output voltage
- ◆ Typical $\pm 1.0\%$ initial output accuracy
- ◆ Logic-compatible enable input
- ◆ Overcurrent protection
- ◆ Thermal shutdown protection
- ◆ Reverse leakage and reverse battery protection
- ◆ Thermally enhanced 8-pin ePad SOIC package

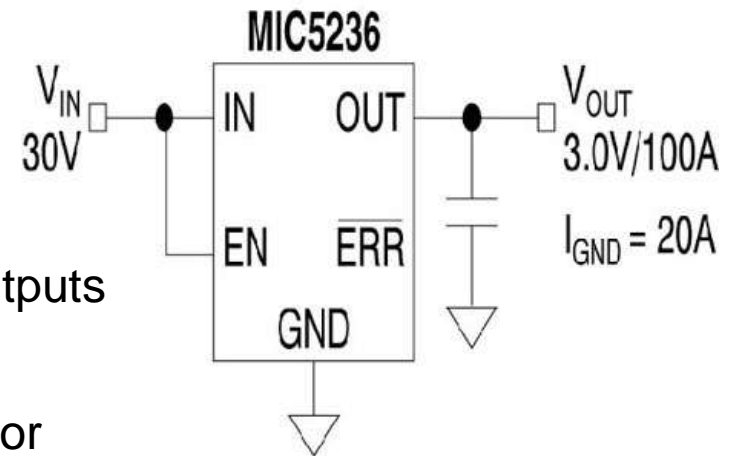




MIC5236

Low Quiescent Current μ Cap LDO Regulator

- ◆ Ultra-low quiescent current (I_Q equals $20\mu A$ at I_O equals $100\mu A$)
- ◆ Wide input range: 2.3V to 30V
- ◆ Low dropout:
 - 230mV at 50mA;
 - 300mV at 150mA
- ◆ Fixed 2.5V, 3.0V, 3.3V, 5.0V and adjustable outputs
- ◆ $\pm 1.0\%$ initial output accuracy
- ◆ Stable with ceramic or tantalum output capacitor
- ◆ Load dump protection: -20V to +60V input transient survivability
- ◆ Logic-compatible enable input
- ◆ Low output flag indicator
- ◆ Reverse leakage protection
- ◆ Reverse battery protection
- ◆ High power SOP-8 and MSOP-8

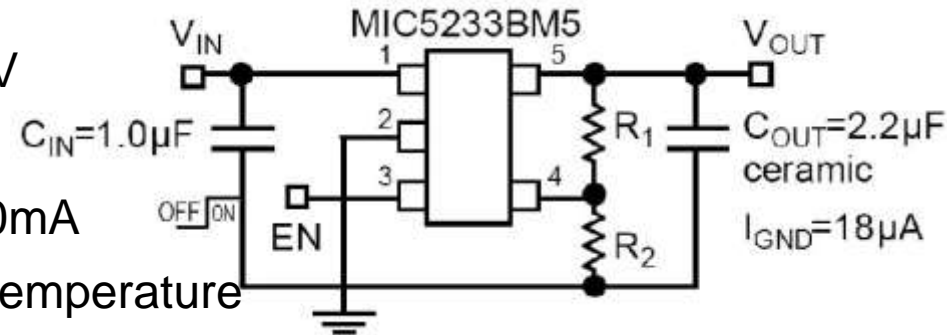




MIC5233

High Input Voltage, Low IQ μ Cap LDO Regulator

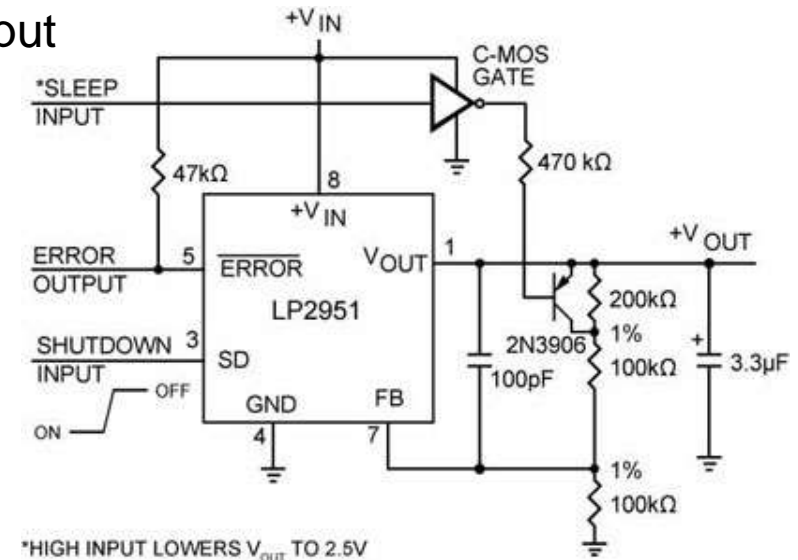
- ◆ Wide input voltage range: 2.3V to 36V
- ◆ Ultra-low ground current: 18 μ A
- ◆ Low dropout voltage of 270mV at 100mA
- ◆ High output accuracy of $\pm 2.0\%$ over temperature
- ◆ μ Cap: stable with ceramic or tantalum capacitors
- ◆ Excellent line and load regulation specifications
- ◆ Zero off-mode current
- ◆ Reverse battery protection
- ◆ Reverse leakage protection
- ◆ Thermal shutdown and current limit protection
- ◆ IttyBitty[®] SOT-23-5 package



LP2951

100mA Low-Dropout Voltage Regulator

- ◆ High accuracy 5V, guaranteed 100 mA output
- ◆ Extremely low quiescent current
- ◆ Low-dropout voltage
- ◆ Extremely tight load and line regulation
- ◆ Very low temperature coefficient
- ◆ Use as regulator or reference
- ◆ Needs only 1 μ F for stability
- ◆ Current and thermal limiting
- ◆ LP2951 Versions Only
 - Error flag warns of output dropout
 - Logic-controlled electronic shutdown
 - Output programmable from 1.24V to 29V

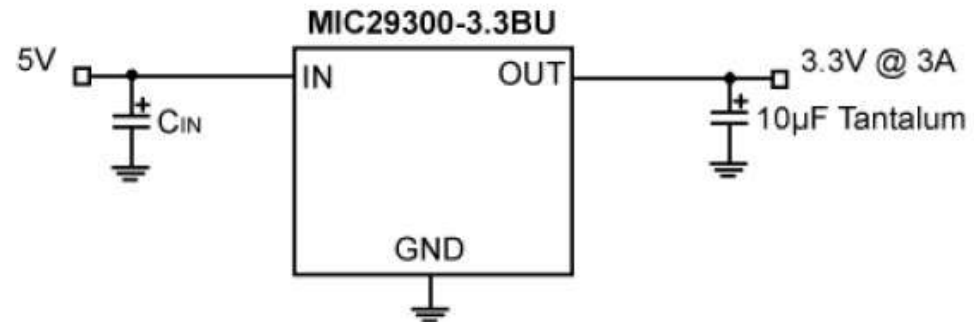




MIC29500/1/2/3

High-Current Low-Dropout Regulators

- ◆ High current capability
 - MIC29150/29151/29152/29153: 1.5A
 - MIC29300/29301/29302/29303: 3A
 - MIC29500/29501/29502/29503: 5A
 - MIC29750/29751/29752: 7.5A
- ◆ Low dropout voltage
- ◆ Low ground current
- ◆ Accurate 1% guaranteed tolerance
- ◆ Reverse-battery and load dump protection
- ◆ Zero-current shutdown mode (5-pin versions)
- ◆ Error flag signals output out-of-regulation (5-pin versions)
- ◆ Also characterized for smaller loads with industry-leading performance specifications
- ◆ Fixed voltage and adjustable versions

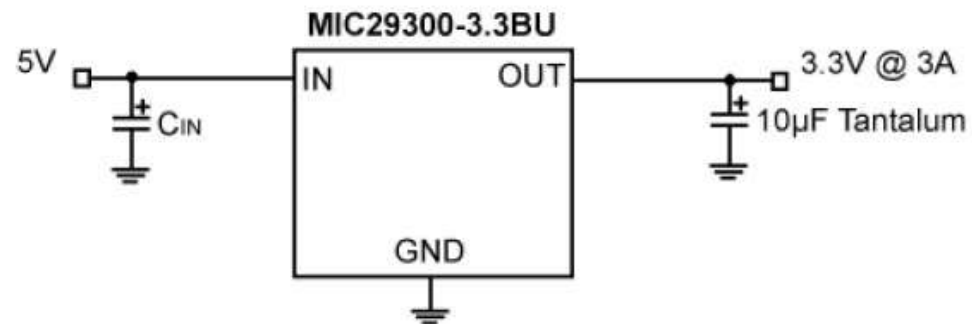




MIC29300/1/2/3

High-Current Low-Dropout Regulators

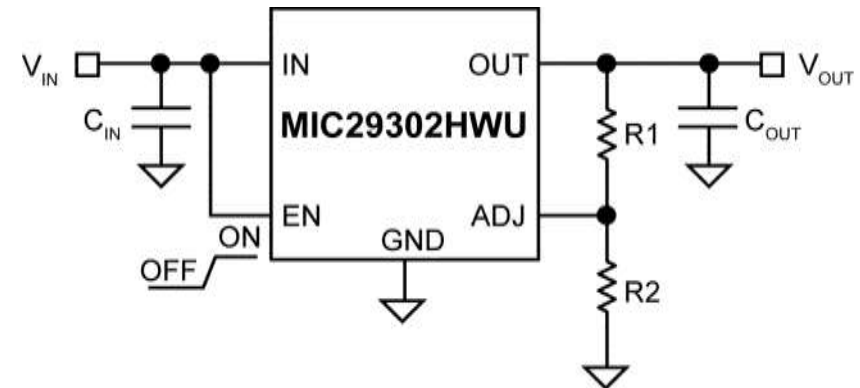
- ◆ High current capability
 - MIC29150/29151/29152/29153: 1.5A
 - MIC29300/29301/29302/29303: 3A
 - MIC29500/29501/29502/29503: 5A
 - MIC29750/29751/29752: 7.5A
- ◆ Low dropout voltage
- ◆ Low ground current
- ◆ Accurate 1% guaranteed tolerance
- ◆ Extremely fast transient response
- ◆ Reverse-battery and load dump protection
- ◆ Zero-current shutdown mode (5-pin versions)
- ◆ Error flag signals output out-of-regulation (5-pin versions)
- ◆ Also characterized for smaller loads with industry-leading performance specifications
- ◆ Fixed voltage and adjustable versions



MIC29302HWU

High-Current Low-Dropout Regulators

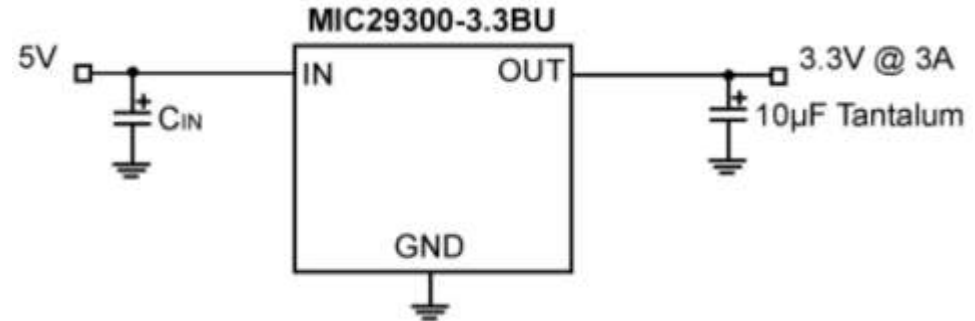
- ◆ 3A current capability
- ◆ Low dropout voltage
- ◆ Low ground current
- ◆ Accurate 1% guaranteed tolerance
- ◆ Extremely fast transient response
- ◆ Reverse-battery and “Load Dump” protection
- ◆ Zero-current shutdown mode
- ◆ Error flag signals output out-of-regulation
- ◆ Also characterized for smaller loads with industry-leading performance specifications



MIC29150/1/2/3

High-Current Low-Dropout Regulators

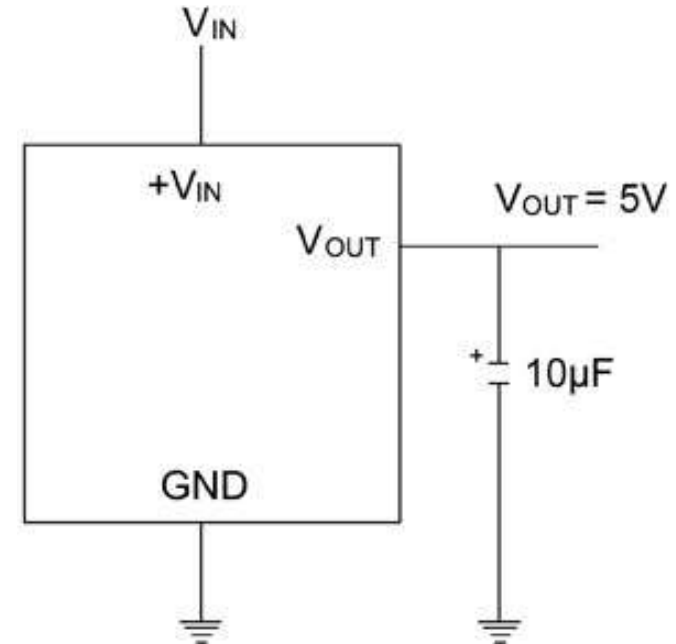
- ◆ High current capability
 - MIC29150/29151/29152/29153: 1.5A
 - MIC29300/29301/29302/29303: 3A
 - MIC29500/29501/29502/29503: 5A
 - MIC29750/29751/29752: 7.5A
- ◆ Low dropout voltage
- ◆ Low ground current
- ◆ Accurate 1% guaranteed tolerance
- ◆ Extremely fast transient response
- ◆ Reverse-battery and load dump protection
- ◆ Zero-current shutdown mode (5-pin versions)
- ◆ Error flag signals output out-of-regulation (5-pin versions)
- ◆ Also characterized for smaller loads with industry-leading performance specifications
- ◆ Fixed voltage and adjustable versions



MIC2940A/41A

1.25A Low-Dropout Voltage Regulator

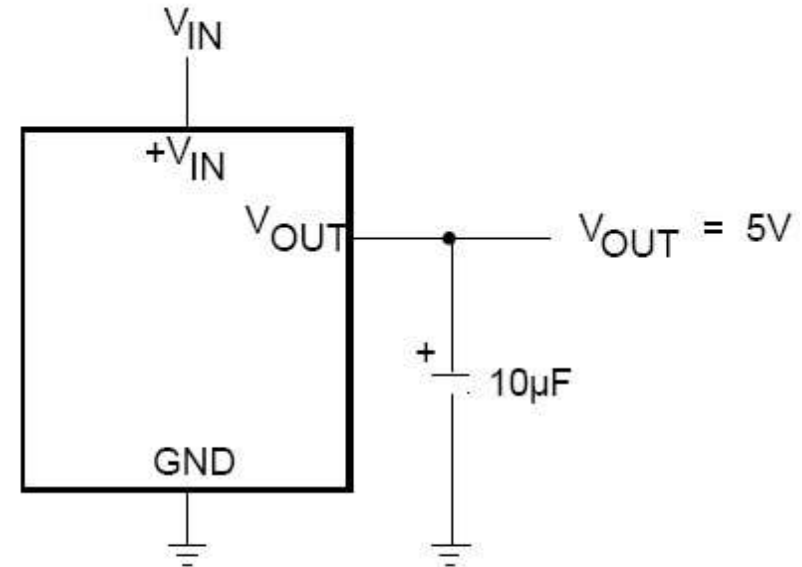
- ◆ High output voltage accuracy
- ◆ Guaranteed 1.25A output
- ◆ Low quiescent current
- ◆ Low dropout voltage
- ◆ Extremely tight load and line regulation
- ◆ Very low temperature coefficient
- ◆ Current and thermal limiting
- ◆ High output voltage accuracy
- ◆ Guaranteed 1.25A output
- ◆ Low quiescent current
- ◆ Low dropout voltage
- ◆ Extremely tight load and line regulation
- ◆ Very low temperature coefficient
- ◆ Current and thermal limiting



MIC2937A/1/2

750mA Low-Dropout Voltage Regulator

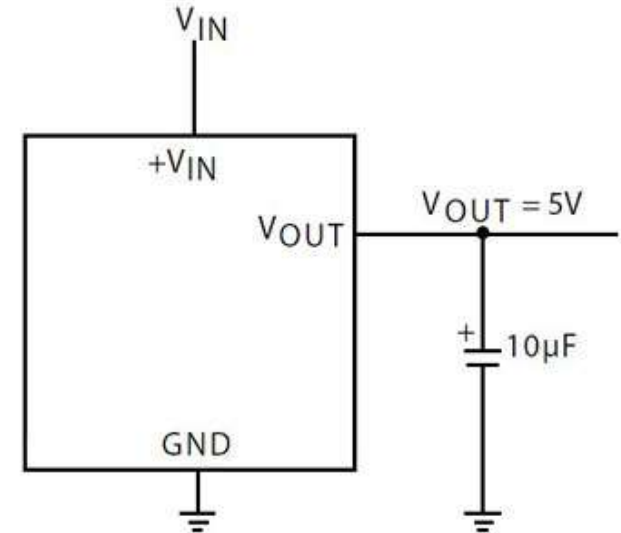
- ◆ High output voltage accuracy
- ◆ Guaranteed 750mA output
- ◆ Low quiescent current
- ◆ Low dropout voltage
- ◆ Extremely tight load and line regulation
- ◆ Very low temperature coefficient
- ◆ Current and thermal limiting
- ◆ Input can withstand -20V reverse battery
- ◆ Error flag warns of output dropout
- ◆ Logic-controlled electronic shutdown
- ◆ Output programmable from 1.24V to 26V (MIC29372)
- ◆ Available in TO-220, TO-263, TO-220-5, and TO-263-5 packages



MIC2920A/1/2/4

400mA Low-Dropout Voltage Regulator

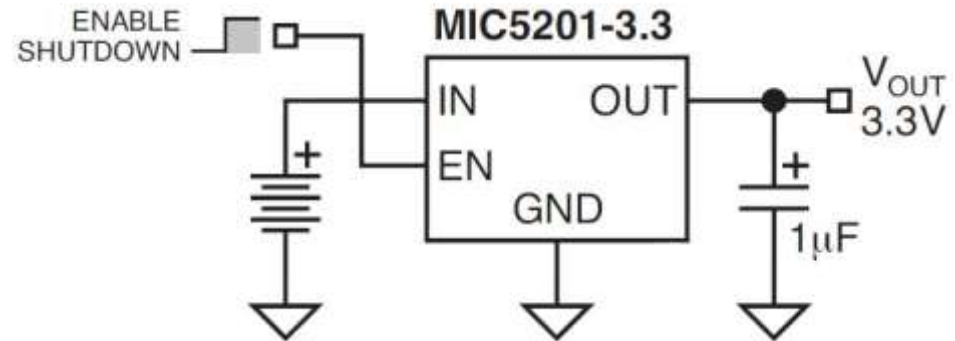
- ◆ High output voltage accuracy
- ◆ Guaranteed 400mA output
- ◆ Low quiescent current
- ◆ Low dropout voltage
- ◆ Extremely tight load and line regulation
- ◆ Very low temperature coefficient
- ◆ Current and thermal limiting
- ◆ Input withstands -20V reverse battery and +60V positive transients
- ◆ Error flag warns of output dropout
- ◆ Logic-controlled electronic shutdown
- ◆ Output programmable from 1.24V to 26V (MIC29202/MIC29204)
- ◆ Available in TO-220, TO-220-5, and surface-mount TO-263-5, SOT-223, and SO-8 packages.



MIC5201

200mA Low-Dropout Regulator

- ◆ High output voltage accuracy
- ◆ Variety of output voltages
- ◆ Guaranteed 200mA output
- ◆ Low quiescent current
- ◆ Low dropout voltage
- ◆ Extremely tight load and line regulation
- ◆ Very low temperature coefficient
- ◆ Current and thermal limiting
- ◆ Reversed battery protection
- ◆ Load-dump protection (fixed voltage versions)
- ◆ Zero off-mode current state
- ◆ Logic-controlled electronic enable
- ◆ Available in SO-8 and SOT-223 packages

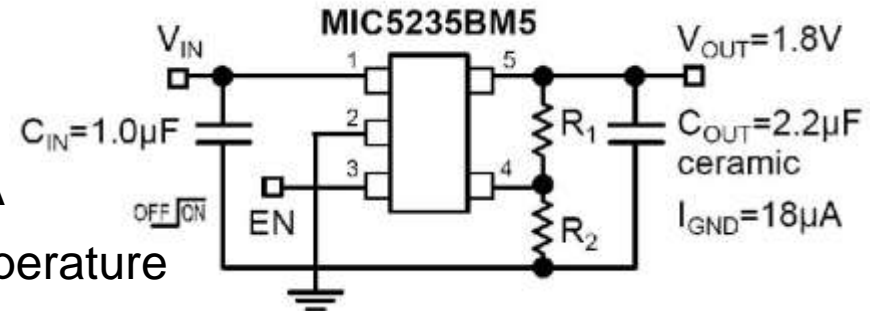




MIC5235

Ultra-Low Quiescent Current, 150mA μ Cap LDO Regulator

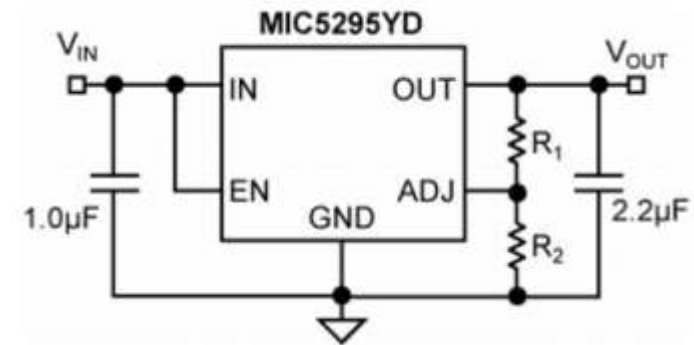
- ◆ Wide input voltage range: 2.3V to 24V
- ◆ Ultra-low ground current: 18 μ A
- ◆ Low dropout voltage: 310mV at 150mA
- ◆ High output accuracy: $\pm 2.0\%$ over temperature
- ◆ μ Cap: stable with ceramic or tantalum capacitors
- ◆ Excellent line and load regulation specifications
- ◆ Zero off-mode current
- ◆ Reverse battery protection
- ◆ Reverse leakage protection
- ◆ Thermal shutdown and current limit protection
- ◆ IttyBitty® SOT-23-5 package



MIC5295

Low Quiescent Current, 150mA LDO Regulator

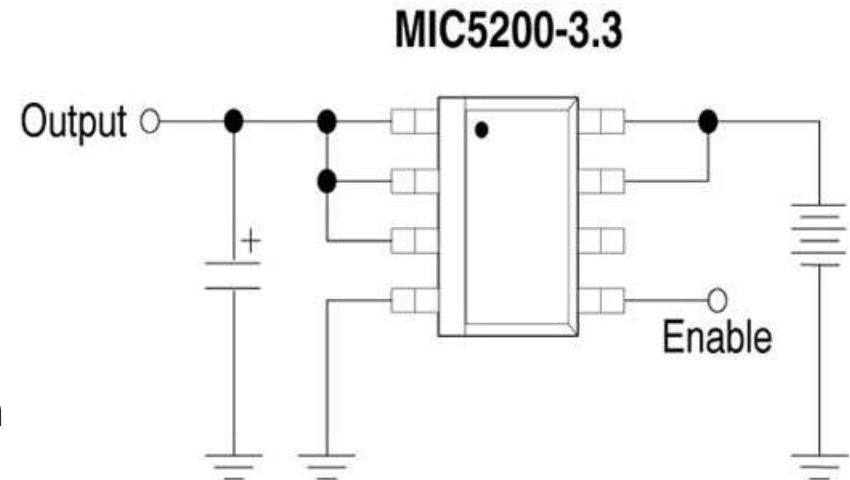
- ◆ Wide input voltage range: 2.3V to 24V
- ◆ Ultra-low ground current: 18 μ A
- ◆ Low dropout voltage: 300mV at 150mA
- ◆ High initial output accuracy: $\pm 1.0\%$
- ◆ Stable with ceramic or tantalum capacitors
- ◆ Excellent line and load regulation specifications
- ◆ Reverse battery protection
- ◆ Reverse leakage protection
- ◆ Thermal shutdown and current limit protection
- ◆ Power TO-252-5 (D-Pak) package
- ◆ Adjustable output from 1.24V to 20V



MIC5200

100mA Low-Dropout Regulator

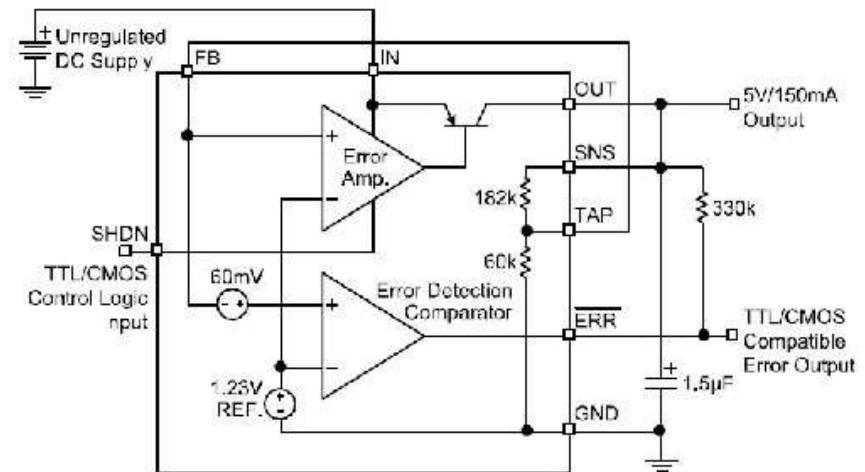
- ◆ High output voltage accuracy
- ◆ Variety of output voltages
- ◆ Guaranteed 100mA output
- ◆ Low quiescent current
- ◆ Low dropout voltage
- ◆ Extremely tight load and line regulation
- ◆ Very low temperature coefficient
- ◆ Current and thermal limiting
- ◆ Zero off-mode current
- ◆ Logic-controlled electronic shutdown
- ◆ Available in 8-pin SOIC, MM8[®] 8-pin MSOP and SOT-223 packages



MIC2950/1

150mA Low-Dropout Voltage Regulator

- ◆ High accuracy: 3.3V, 4.85V, or 5V with guaranteed 150mA output
- ◆ Extremely low quiescent current
- ◆ Low-dropout voltage
- ◆ Extremely tight load and line regulation
- ◆ Very low temperature coefficient
- ◆ Use as regulator or reference
- ◆ Needs only 1.5 μ F for stability
- ◆ Current and thermal limiting
- ◆ Unregulated DC input can withstand -20 V reverse battery and $+60$ V positive transients
- ◆ Error flag warns of output dropout (MIC2951)
- ◆ Logic-controlled electronic shutdown (MIC2951)
- ◆ Output programmable from 1.24V to 29V (MIC2951)

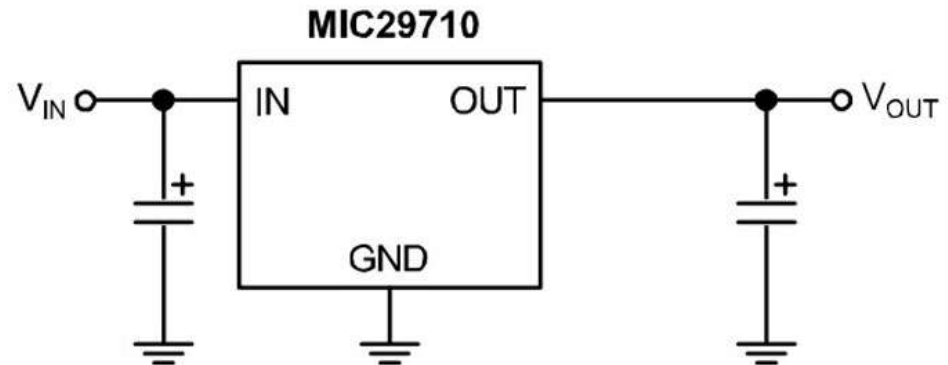




MIC29710/2

7.5A Fast-Response LDO Regulator

- ◆ Fast transient response
- ◆ 7.5A current capability
- ◆ 700mV dropout voltage at full load
- ◆ Low ground current
- ◆ Accurate 2% guaranteed tolerance
- ◆ Zero-current shutdown mode (MIC29712)
- ◆ No minimum load current
- ◆ Fixed voltage and adjustable versions

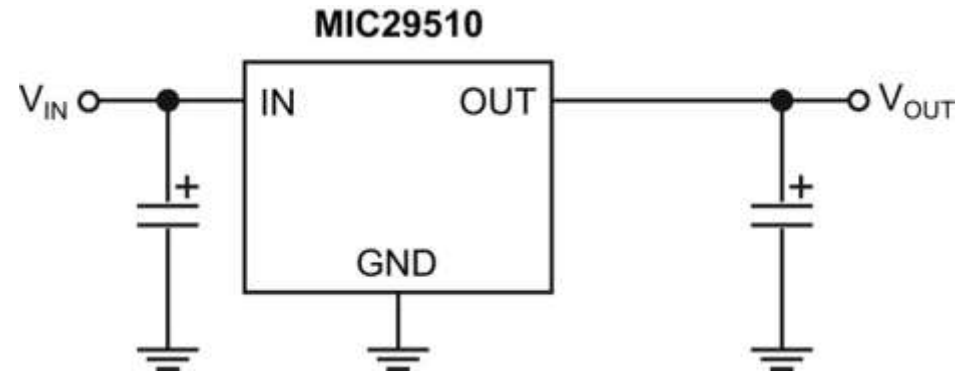




MIC29510/2

5A Fast-Response LDO Regulator

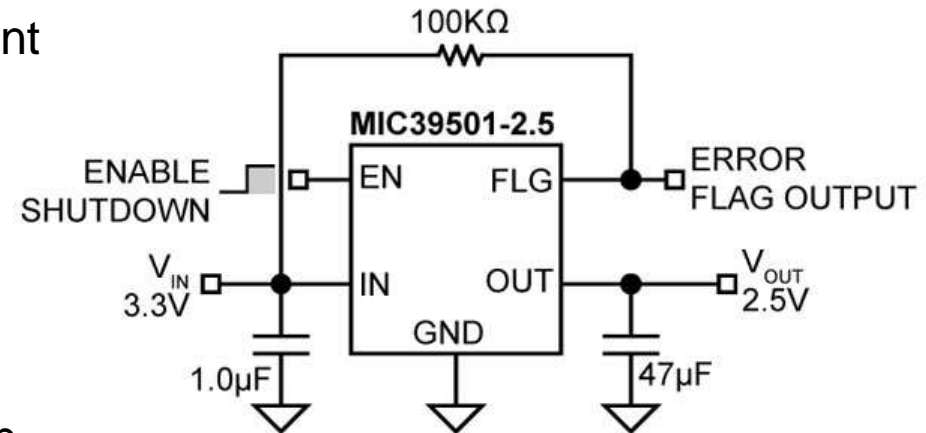
- ◆ Fast transient response
- ◆ 5A current capability
- ◆ 700mV dropout voltage at full load
- ◆ Low ground current
- ◆ Accurate 1% guaranteed tolerance
- ◆ Zero current shutdown mode (MIC29512)
- ◆ Fixed voltage and adjustable versions



MIC39500/1

5A Low-Voltage Low-Dropout Regulator

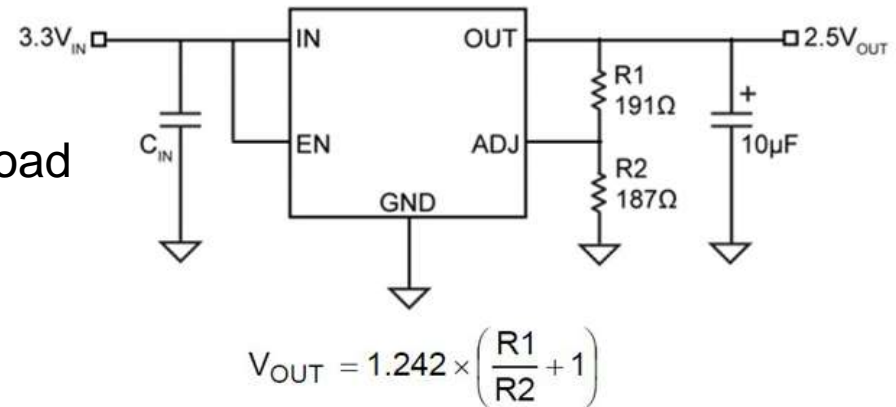
- ◆ 5A minimum guaranteed output current
- ◆ 400mV dropout voltage
 - Ideal for 3.0V to 2.5V conversion
 - Ideal for 2.5V to 1.8V conversion
- ◆ 1% initial accuracy
- ◆ Low ground current
- ◆ Current limiting and thermal shutdown
- ◆ Reverse battery and reverse lead insertion protection
- ◆ Reverse leakage protection
- ◆ Fast transient response
- ◆ TO-263 and TO-220 packages
- ◆ TTL/CMOS-compatible enable pin (MIC39501 only)
- ◆ Error flag output (MIC39501 only)
- ◆ Ceramic capacitor stable (See application information)



MIC29302A

3A Fast-Response LDO Regulator

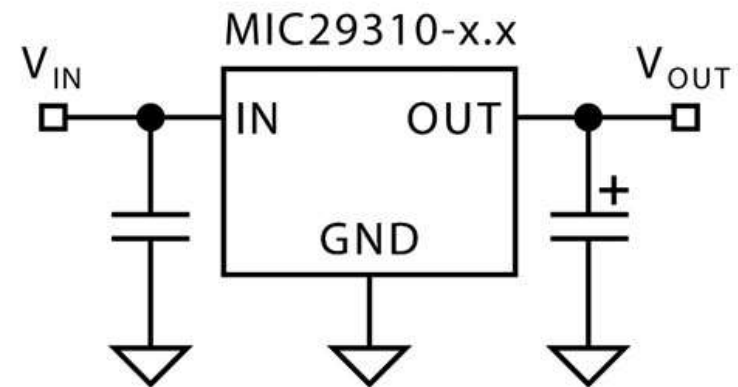
- ◆ High current capability
 - 3A over full temperature range
- ◆ Low dropout voltage of 450mV at full load
- ◆ Low ground current
- ◆ Accurate 1% guaranteed tolerance
- ◆ Extremely fast transient response
- ◆ Zero-current shutdown mode
- ◆ Error flag signals output out-of-regulation
- ◆ Adjustable output voltage
- ◆ Available in TO-263-L and TO-252-5L packages



MIC29310/12

3A Fast-Response LDO Regulator

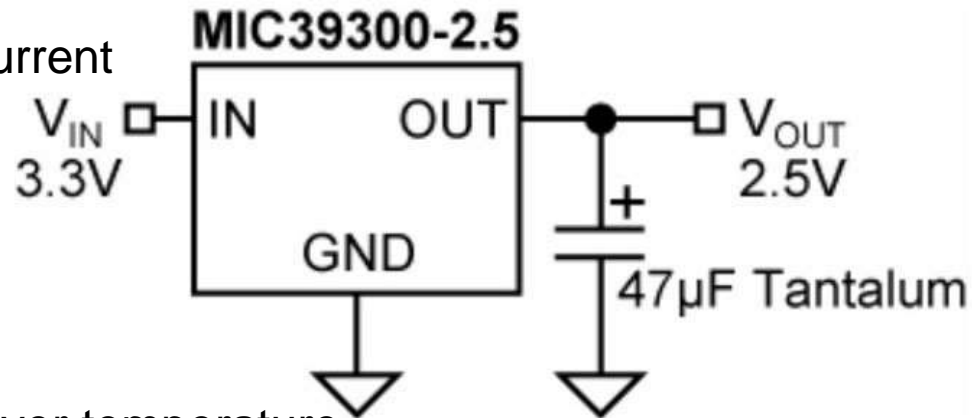
- ◆ Low cost versions of MIC29300 family
- ◆ Fast transient response
- ◆ 3A current over full temperature range
- ◆ 600mV dropout voltage at full load
- ◆ Low ground current
- ◆ Accurate 1% guaranteed tolerance
- ◆ Zero current shutdown mode (MIC29312)
- ◆ Fixed voltage and adjustable versions



MIC39300/1/2

3A Low-Voltage Low-Dropout Regulator

- ◆ 3.0A minimum guaranteed output current
- ◆ Ideal for 3.0V to 2.5V conversion
- ◆ Ideal for 2.5V to 1.8V conversion
- ◆ 1% initial accuracy
- ◆ Low ground current
- ◆ 550mV maximum dropout voltage over temperature
- ◆ Current limiting and thermal shutdown
- ◆ Reverse battery protection
- ◆ Reverse leakage protection
- ◆ Fast transient response
- ◆ TO-263 (D²Pak) and TO-220 packaging
- ◆ TTL/CMOS compatible enable pin (MIC39301/2 only)
- ◆ Error flag output (MIC39301 only)
- ◆ Adjustable output (MIC39302 only)

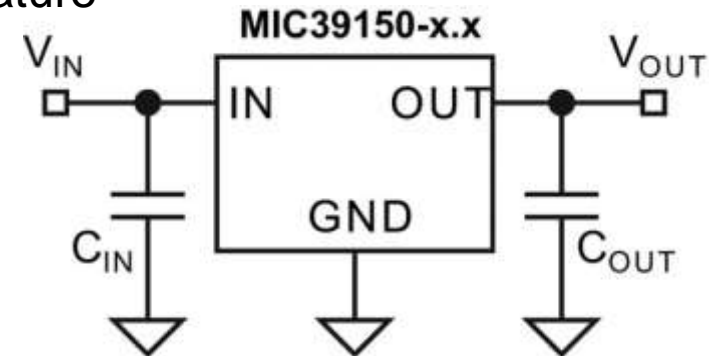




MIC39150/1/2

1.5A Low-Voltage Low-Dropout Regulator

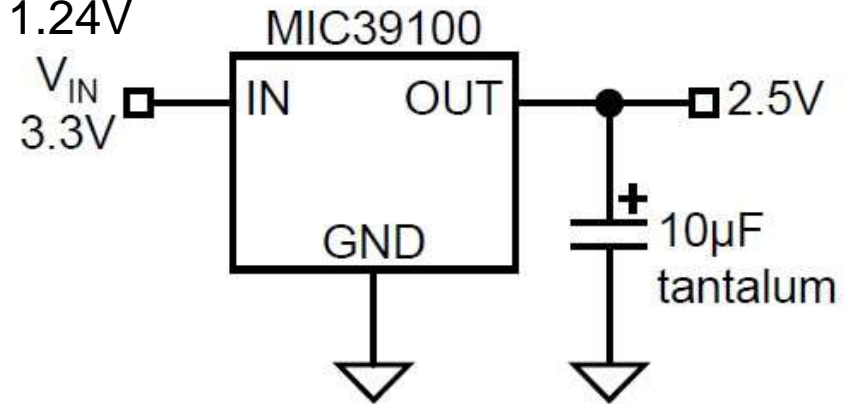
- ◆ 1.5A minimum guaranteed output current
- ◆ 500mV maximum dropout voltage over temperature
 - Ideal for 3.0V to 2.5V conversion
 - Ideal for 2.5 to 1.8V or 1.65V conversion
- ◆ 1% initial accuracy
- ◆ Low ground current
- ◆ Current limiting and thermal shutdown
- ◆ Reverse battery and reverse load insertion protection
- ◆ Reverse leakage protection
- ◆ TTL/CMOS-compatible enable pin (MIC39151/2 only)
- ◆ Error flag output (MIC39151 only)
- ◆ Adjustable output (MIC39152 only)
- ◆ Power D-Pak package (TO-252) Adjustable only
- ◆ Power D²Pak Package (TO-263)



MIC39100/1/2

1A Low-Voltage Low-Dropout Regulator

- ◆ Fixed and adjustable output voltages to 1.24V
- ◆ 410mV typical dropout at 1A
 - Ideal for 3.0V to 2.5V conversion
 - Ideal for 2.5V to 1.8V conversion
- ◆ 1A minimum guaranteed output current
- ◆ 1% initial accuracy
- ◆ Low ground current
- ◆ Current limiting and thermal shutdown
- ◆ Reversed-battery protection
- ◆ Reversed-leakage protection
- ◆ Fast transient response
- ◆ Low-profile SOT-223 package
- ◆ Power SO-8 package

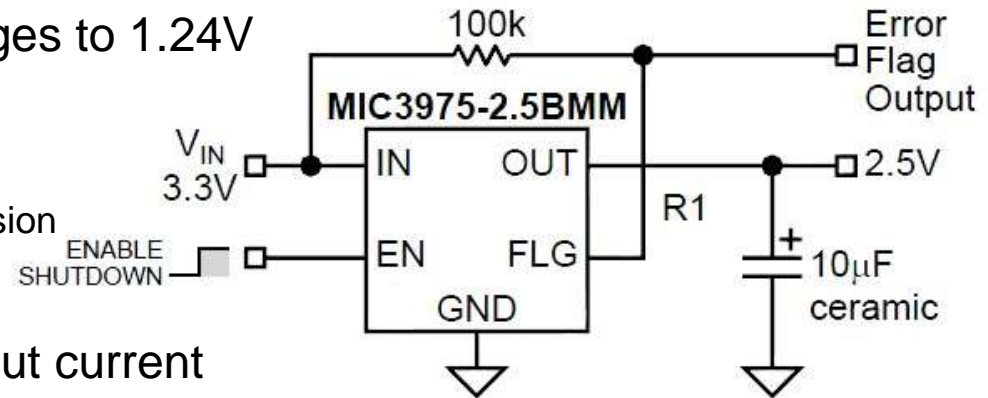




MIC3975

1A Low-Voltage Low-Dropout Regulator

- ◆ Fixed and adjustable output voltages to 1.24V
- ◆ 280mV typical dropout at 750mA
 - Ideal for 3.0V to 2.5V conversion
 - Ideal for 2.5V to 1.8V or 1.65V conversion
- ◆ Stable with ceramic capacitor
- ◆ 750mA minimum guaranteed output current
- ◆ 1% initial accuracy
- ◆ Low ground current
- ◆ Current limiting and thermal shutdown
- ◆ Reverse battery protection
- ◆ Reverse leakage protection
- ◆ Fast transient response
- ◆ Low-profile MSOP-8

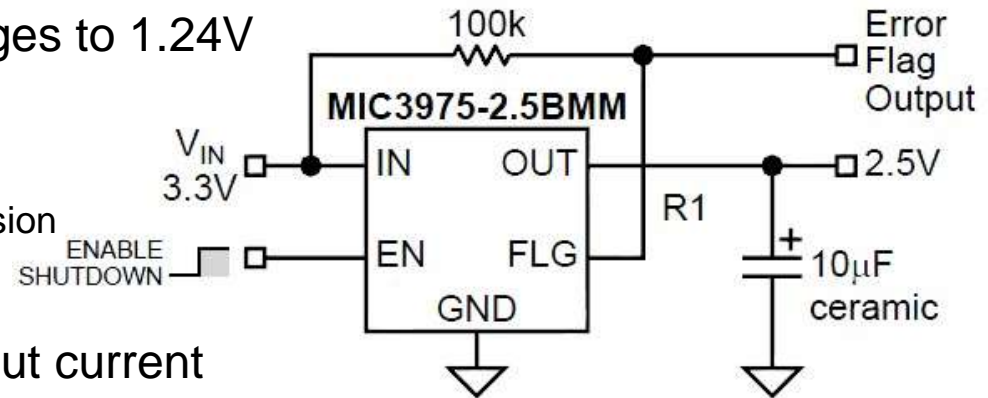




MIC5209

1A Low-Voltage Low-Dropout Regulator

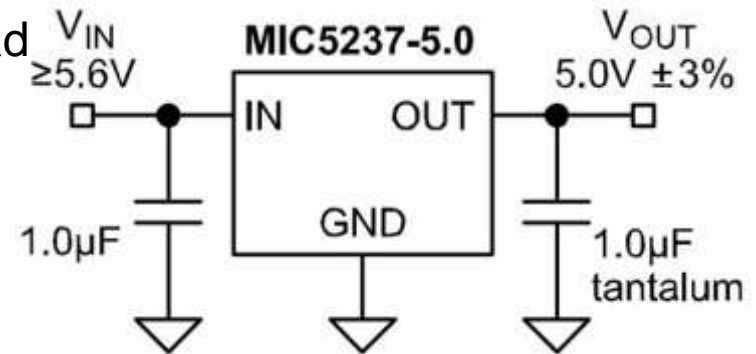
- ◆ Fixed and adjustable output voltages to 1.24V
- ◆ 280mV typical dropout at 750mA
 - Ideal for 3.0V to 2.5V conversion
 - Ideal for 2.5V to 1.8V or 1.65V conversion
- ◆ Stable with ceramic capacitor
- ◆ 750mA minimum guaranteed output current
- ◆ 1% initial accuracy
- ◆ Low ground current
- ◆ Current limiting and thermal shutdown
- ◆ Reverse battery protection
- ◆ Reverse leakage protection
- ◆ Fast transient response
- ◆ Low-profile MSOP-8



MIC5237

500mA Low-Dropout Regulator

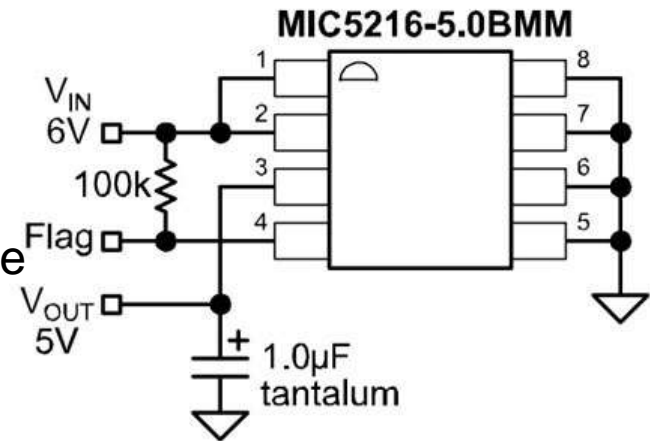
- ◆ Low 300mV typical dropout voltage at full load
- ◆ Extremely tight load and line regulation
- ◆ Current and thermal limiting
- ◆ Reversed battery protection
- ◆ TO-220 and TO-263 packages
- ◆ Low temperature coefficient
- ◆ Guaranteed 500mA output over the full operating temperature range
- ◆ No-load stability
- ◆ Low noise output



MIC5216

500mA-Peak Output LDO Regulator

- ◆ Error flag indicates undervoltage fault
- ◆ Low 500mV maximum dropout voltage at full load
- ◆ Extremely tight load and line regulation
- ◆ Tiny SOT-23-5 and MM8® power MSOP-8 package
- ◆ Low noise output
- ◆ Low temperature coefficient
- ◆ Current and thermal limiting
- ◆ Reversed battery protection
- ◆ Guaranteed 500mA peak output over the full operating temperature range
- ◆ CMOS/TTL-compatible enable/shutdown control
- ◆ Near-zero shutdown current

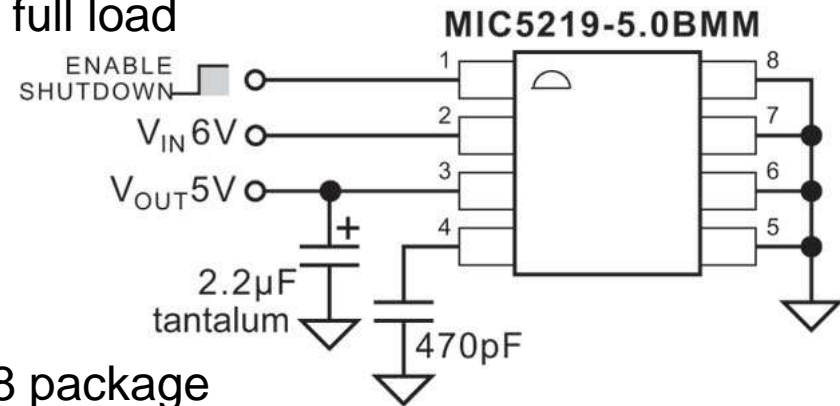




MIC5219

500mA-Peak Output LDO Regulator

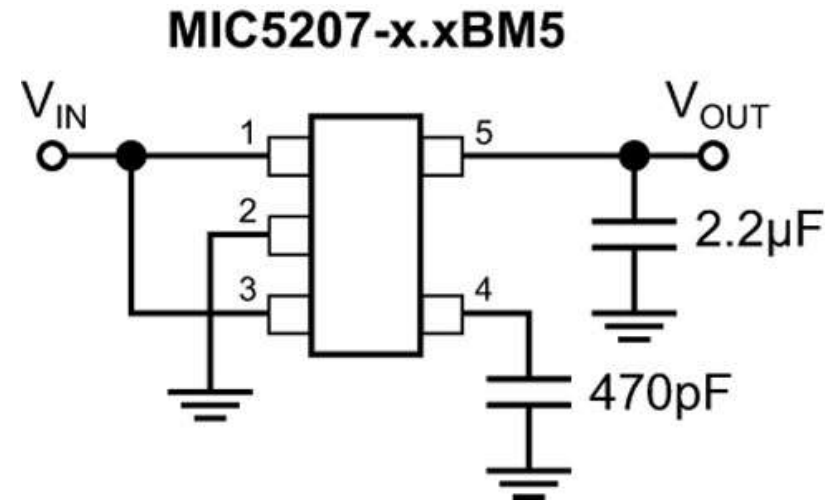
- ◆ Low 500mV maximum dropout voltage at full load
- ◆ Extremely tight load and line regulation
- ◆ Ultra-low noise output
- ◆ Low temperature coefficient
- ◆ Current and thermal limiting
- ◆ Tiny SOT-23-5 and MM8[®] power MSOP-8 package
- ◆ 500mA output current capability
 - SOT-23-5 package - 500mA peak
 - 2mm x 2mm MLF[®] and Thin MLF[®] packages - 500mA continuous
 - MSOP-8 package - 500mA continuous
- ◆ Reversed battery protection
- ◆ CMOS/TTL-compatible enable/shutdown control
- ◆ Near-zero shutdown current



MIC5207

180mA Low-Noise LDO Regulator

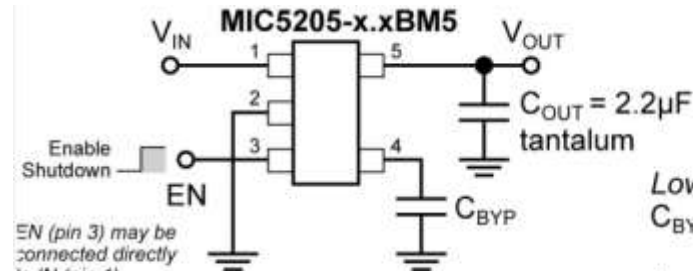
- ◆ Ultra-low noise output
- ◆ High output voltage accuracy
- ◆ Guaranteed 180mA output
- ◆ Low quiescent current
- ◆ Low dropout voltage
- ◆ Extremely tight load and line regulation
- ◆ Very low temperature coefficient
- ◆ Current and thermal limiting
- ◆ Reverse battery protection
- ◆ Zero off-mode current state
- ◆ Logic-controlled electronic enable



MIC5205

150mA Low-Noise LDO Regulator

- ◆ Ultra-low noise output
- ◆ High output voltage accuracy
- ◆ Guaranteed 150mA output
- ◆ Low quiescent current
- ◆ Low dropout voltage
- ◆ Extremely tight load and line regulation
- ◆ Very low temperature coefficient
- ◆ Current and thermal limiting
- ◆ Reverse battery protection
- ◆ Zero off-mode current
- ◆ Logic-controlled electronic enable



Low-Noise Operation:
 $C_{BYP} = 470\text{pF}$, $C_{OUT} \geq 2.2\mu\text{F}$

Basic Operation:
 $C_{BYP} = \text{not used}$, $C_{OUT} \geq 1\mu\text{F}$

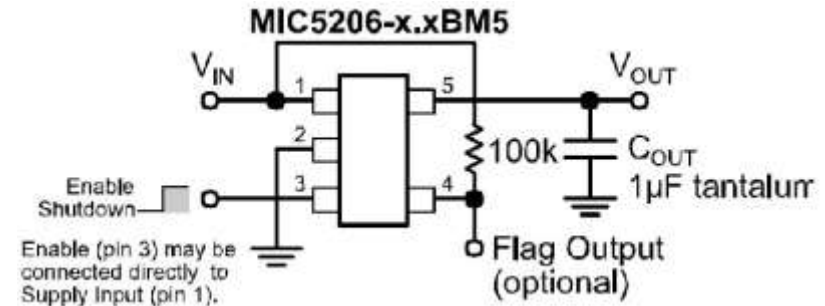




MIC5206

150mA Low-Noise LDO Regulator

- ◆ Error flag indicates undervoltage fault
- ◆ High output voltage accuracy
- ◆ Guaranteed 150mA output
- ◆ Ultra-low noise output (8-pin versions)
- ◆ Low quiescent current
- ◆ Low dropout voltage
- ◆ Extremely tight load and line regulation
- ◆ Very low temperature coefficient
- ◆ Current and thermal limiting
- ◆ Reversed battery protection
- ◆ Zero off-mode current
- ◆ Logic-controlled electronic enable

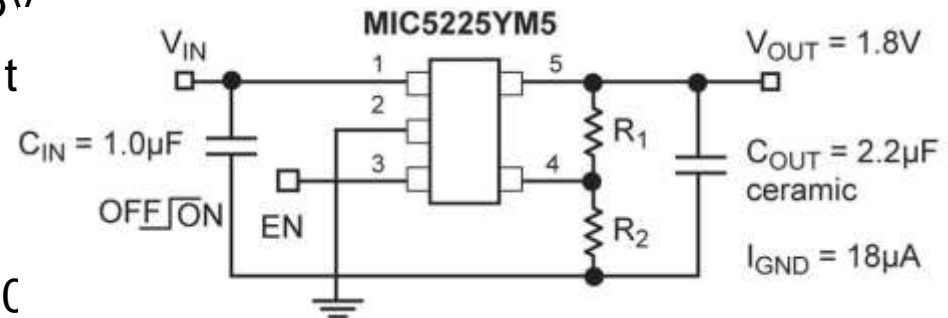




MIC5225

Ultra-Low Quiescent Current 150mA μ Cap Low Dropout Regulator

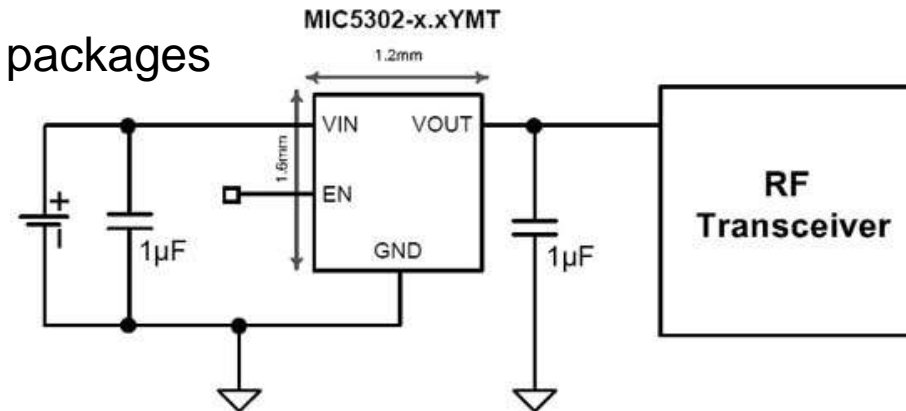
- ◆ Wide input voltage range: 2.3V to 16V
- ◆ High output accuracy of $\pm 2.0\%$ over t
- ◆ Guaranteed 150mA output
- ◆ Very low ground current: 29 μ A
- ◆ Low dropout voltage of 310mV at 150mA
- ◆ μ Cap: stable with ceramic or tantalum capacitors
- ◆ Excellent line and load regulation specifications
- ◆ Reverse battery protection
- ◆ Reverse leakage protection
- ◆ Zero off-mode current
- ◆ Thermal shutdown and current limit protection
- ◆ IttyBitty[®] SOT-23-5 package



MIC5203

μCap 80mA Low-Dropout Regulator

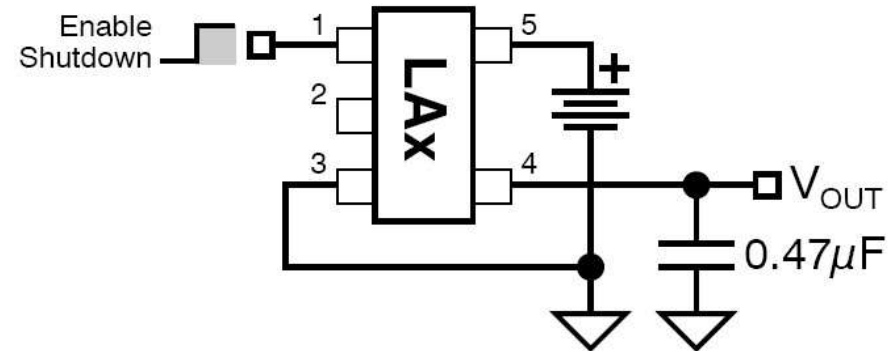
- ◆ Tiny 4-lead and 5-lead surface-mount packages
- ◆ Wide selection of output voltages
- ◆ Guaranteed 80mA output
- ◆ Low quiescent current
- ◆ Low dropout voltage
- ◆ Tight load and line regulation
- ◆ Low temperature coefficient
- ◆ Current and thermal limiting
- ◆ Reversed input polarity protection
- ◆ Zero off-mode current
- ◆ Logic-controlled shutdown
- ◆ Stability with low-ESR ceramic capacitors



MIC5213

Teeny™ SC-70 μ Cap Low-Dropout Regulator

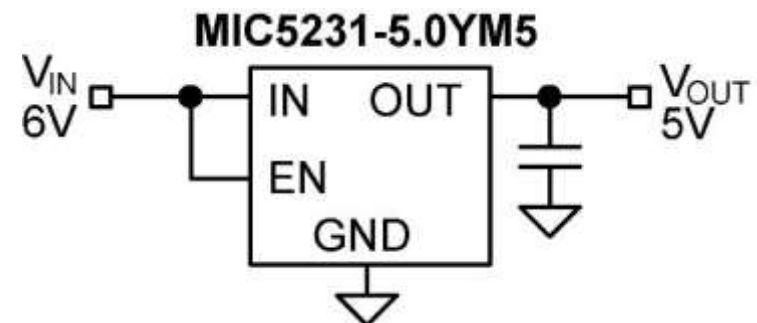
- ◆ Teeny™ SC-70 package
- ◆ Wide selection of output voltages
- ◆ Guaranteed 80mA output
- ◆ Low quiescent current
- ◆ Low dropout voltage
- ◆ Tight load and line regulation
- ◆ Low temperature coefficient
- ◆ Current and thermal limiting
- ◆ Reversed input polarity protection
- ◆ Zero off-mode current
- ◆ Logic-controlled shutdown
- ◆ Stability with low-ESR ceramic capacitors



MIC5231

10mA μ Cap™ LDO Regulator

- ◆ Extremely low quiescent current: only 0.65 μ A
- ◆ No output capacitor requirement
- ◆ Stable with ceramic or tantalum capacitors
- ◆ IttyBitty® SOT-23-5 surface-mount package
- ◆ 10mA output drive
- ◆ Low 150mV at 10mA dropout voltage
- ◆ Tight load and line regulation
- ◆ Low temperature coefficient
- ◆ Logic-level enable input

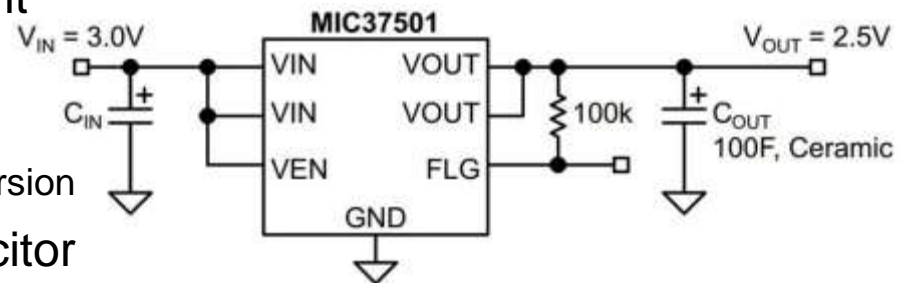




MIC37501/2

5A, Low Voltage μ Cap LDO Regulator

- ◆ 5A minimum guaranteed output current
- ◆ 500mV maximum dropout voltage
 - Ideal for 3.0V to 2.5V conversion
 - Ideal for 2.5V to 1.8V, 1.65V, or 1.5V conversion
- ◆ Stable with ceramic or tantalum capacitor
 - V_{IN} : 2.3V to 6.0V
- ◆ $\pm 1.0\%$ initial output tolerance
- ◆ Fixed and adjustable output voltages:
 - MIC37501 -7 terminal fixed voltage
 - MIC37502 -5 (TO-263) and 7 (SPAK) terminal adjustable voltage
- ◆ Excellent line and load regulation specifications
- ◆ Logic controlled shutdown
- ◆ Thermal shutdown and current-limit protection
- ◆ Reverse leakage protection
- ◆ Low-profile S-Pak and TO-263 packages

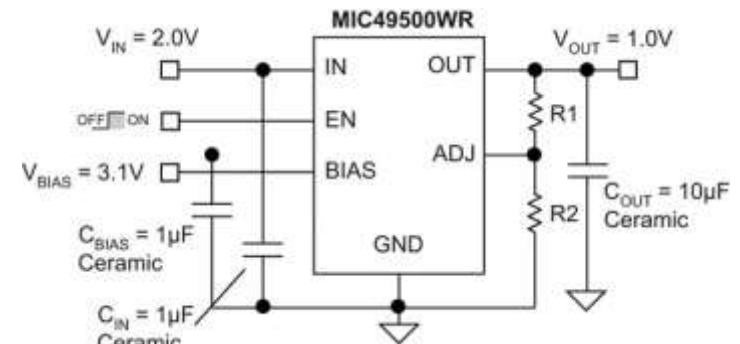




MIC49500

5A Dual Supply, Low Voltage, High Bandwidth LDO

- ◆ Input voltage range: 2.7V to 6.0V
 - V_{IN} : 1.4V to 6V
 - V_{BIAS} : 3V to 6V
- ◆ Stable with 10 μ F ceramic output capacitor
- ◆ $\pm 1.0\%$ initial output tolerance
- ◆ Maximum dropout ($V_{IN} - V_{OUT}$) is 500mV over temperature
- ◆ Adjustable output voltage down to 0.7V
- ◆ Ultra-fast transient response (Up to 10MHz bandwidth)
- ◆ Excellent line and load regulation specifications
- ◆ Logic controlled shutdown option
- ◆ Thermal shutdown and current limit protection
- ◆ Thin 7-pin S-Pak package
- ◆ TO-263 7-pin package
- ◆ -40°C to +125°C operating junction temperature range

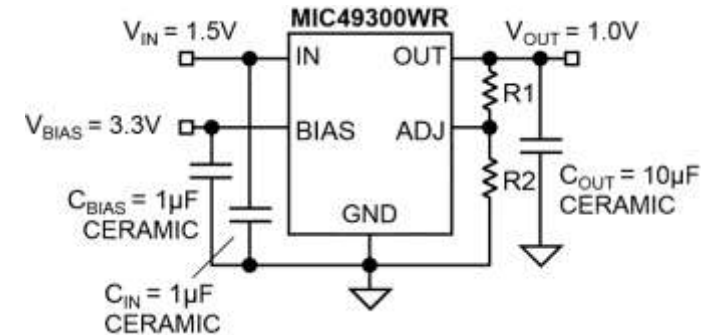




MIC49300

3.0A Low Voltage LDO Regulator w/Dual Input Voltages

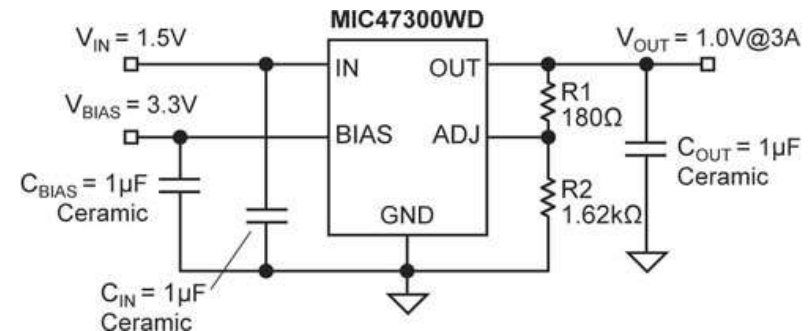
- ◆ Input voltage range:
 - V_{IN} : 1.4V to 6.5V
 - V_{BIAS} : 3.0V to 6.5V
- ◆ Stable with 1 μ F ceramic capacitor
- ◆ $\pm 1\%$ initial tolerance
- ◆ Maximum dropout voltage ($V_{IN}-V_{OUT}$) of 500mV over temperature
- ◆ Adjustable output voltage down to 0.9V
- ◆ Ultra-fast transient response (Up to 10MHz bandwidth)
- ◆ Excellent line and load regulation specifications
- ◆ Logic controlled shutdown option
- ◆ Thermal shutdown and current limit protection
- ◆ Power S-Pak package
- ◆ Junction temperature range: -40°C to +125°C



MIC47300

3A, Low Voltage, Adjustable LDO Regulator with Dual Input Supply

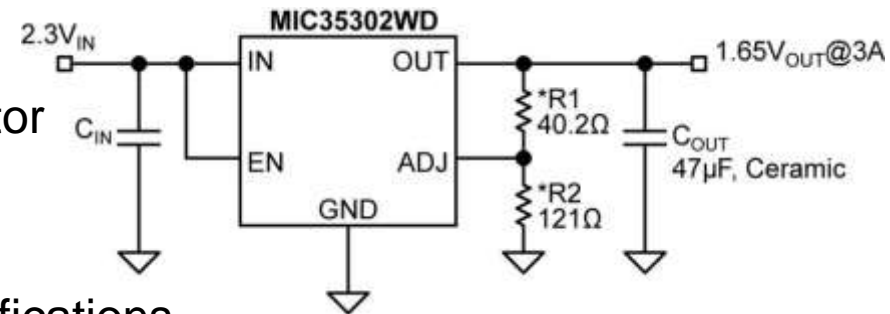
- ◆ Input voltage range:
 - V_{IN} : 1.4V to 6.5V
 - V_{BIAS} : 3.0V to 6.5V
- ◆ Stable with 1 μ F ceramic capacitor
- ◆ $\pm 1\%$ initial tolerance
- ◆ Maximum dropout voltage ($V_{IN} - V_{OUT}$) of 400mV over temperature
- ◆ Adjustable output voltage down to 0.9V
- ◆ Ultra fast transient response (Up to 10MHz bandwidth)
- ◆ Excellent line and load regulation specifications
- ◆ Power D-Pak package (TO-252)
- ◆ Thermal shutdown and current limit protection
- ◆ Junction temperature range: -40°C to +125°C



MIC35302

3A, Low-Voltage μ Cap LDO Regulator

- ◆ Ideal for 3.0V to 2.5V conversion
- ◆ Stable with ceramic or tantalum capacitor
- ◆ Wide input voltage range:
 - V_{IN} : 2.25V to 6.0V
- ◆ Excellent line and load regulation specifications
- ◆ 3.0A minimum guaranteed output current
- ◆ Ideal for 2.5V to 1.8V, 1.65V, or 1.5V conversion
- ◆ 600mV maximum dropout voltage over temperature
- ◆ Logic-controlled shutdown
- ◆ Thermal shutdown and current limit protection
- ◆ Reverse leakage protection
- ◆ -40°C to $+125^{\circ}\text{C}$ junction temperature
- ◆ Power D-Pak package (TO-252)

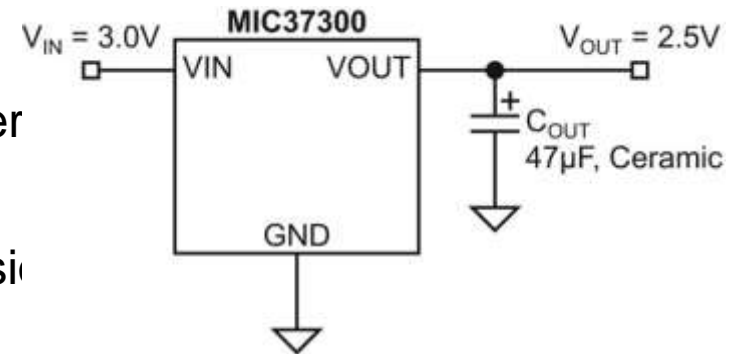




MIC37300/1/2/3

3.0A, Low-Voltage μ Cap LDO Regulator

- ◆ 3.0A minimum guaranteed output current
- ◆ 500mV maximum dropout voltage overtemper
- ◆ Ideal for 3.0V to 2.5V conversion
- ◆ Ideal for 2.5V to 1.8V, 1.65V, or 1.5V conversion
- ◆ Stable with ceramic or tantalum capacitor
- ◆ Wide input voltage range:
 - V_{IN} : 2.25V to 6.0V
 - $\pm 1.0\%$ initial output tolerance
- ◆ Fixed and adjustable output voltages:
 - MIC37300 3-pin fixed voltages
 - MIC37301 5-pin S-Pak or 8-pin ePad SOIC fixed voltages with flag
 - MIC37302 5-pin adjustable voltage
 - MIC37303 8-pin ePad SOIC adjustable voltage with flag
- ◆ Thermal shutdown and current limit protection
- ◆ Reverse leakage protection

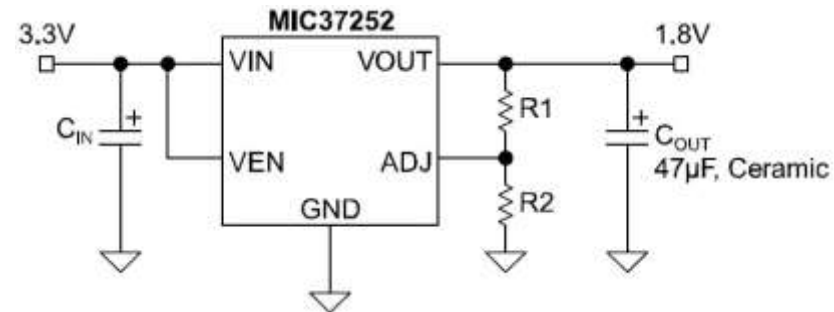




MIC37252

2.5A, Low Voltage μ Cap LDO Regulator

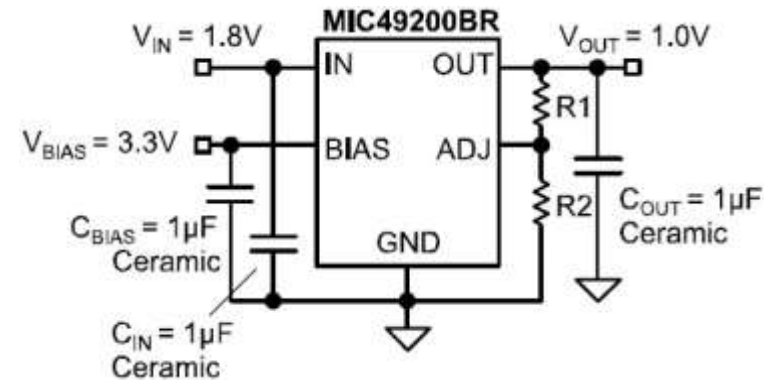
- ◆ 2.5A minimum guaranteed output current
- ◆ Ideal for 3.3V to 1.8V conversion
- ◆ Stable with ceramic or tantalum capacitor
- ◆ $\pm 2.0\%$ initial output tolerance
- ◆ Dropout voltage is 550mV at 2.5A
- ◆ Excellent line and load regulation specifications
- ◆ Logic controlled shutdown
- ◆ Thermal shutdown and current limit protection
- ◆ Reverse leakage protection
- ◆ S-Pak and TO-263 packages



MIC49200

2A Low Voltage LDO with Dual Input Voltages

- ◆ Input voltage range: 2.7V to 6.0V
 - V_{IN} : 1.4V to 6.5V
 - V_{BIAS} : 3.0V to 6.5V
- ◆ Stable with 1 μ F ceramic output capacitor
- ◆ $\pm 1.0\%$ initial output tolerance
- ◆ Maximum dropout ($V_{IN} - V_{OUT}$) is 500mV over temperature
- ◆ Adjustable output voltage down to 0.9V
- ◆ Ultra-fast transient response (up to 10MHz bandwidth)
- ◆ Excellent line and load regulation specifications
- ◆ Logic-controlled shutdown option
- ◆ Thermal shutdown and current limit protection
- ◆ Thin 5-pin S-Pak package
- ◆ -40°C to +125°C operating junction temperature range

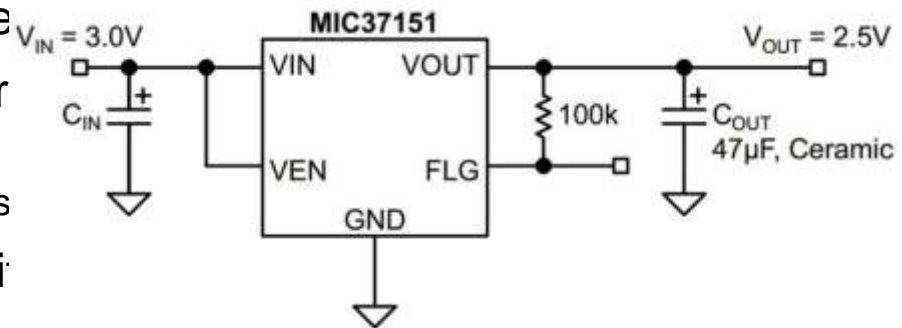




MIC37150/1/2/3

1.5A, Low Voltage μ Cap LDO Regulator

- ◆ 1.5A minimum guaranteed output current
- ◆ 500mV maximum dropout voltage over
 - Ideal for 3.0V to 2.5V conversion
 - Ideal for 2.5V to 1.8V, 1.65V, or 1.5V conversions
- ◆ Stable with ceramic or tantalum capacitors
- ◆ Wide input voltage range
 - V_{IN} : 2.25V to 6.0V
- ◆ $\pm 1.0\%$ initial output tolerance
- ◆ Fixed and adjustable output voltages
 - MIC37150 - 3-pin fixed voltages
 - MIC37151 - 5-pin S-Pak or 8-pin ePad SOIC
- ◆ Fixed voltages with flag
 - MIC37152 - 5-pin adjustable voltage
 - MIC37153 - 8-pin adjustable voltage with flag
- ◆ Thermal shutdown and current limit protection
- ◆ Low profile 3 or 5-pin S-Pak packages or 8-pin ePad SOIC

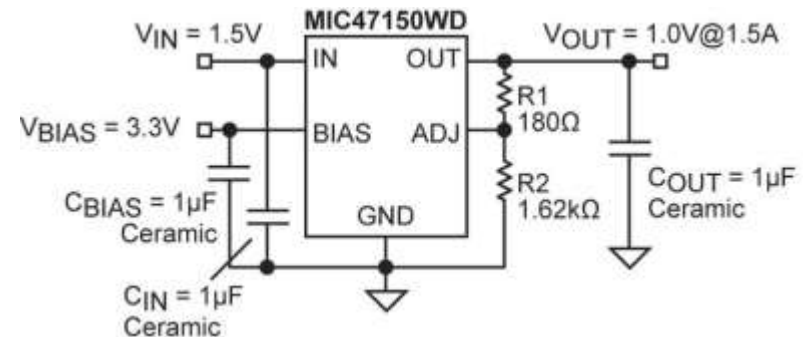




MIC47150

1.5A, Low Voltage, Adjustable, High-Bandwidth LDO Regulator with Dual Input Supplies

- ◆ Input voltage range:
 - V_{IN} : 1.4V to 6.5V
 - V_{BIAS} : 3.0V to 6.5V
- ◆ Stable with 1 μ F ceramic capacitor
- ◆ $\pm 1\%$ initial tolerance
- ◆ Maximum dropout voltage ($V_{IN} - V_{OUT}$) of 500mV over temperature
- ◆ Adjustable output voltage down to 0.9V
- ◆ Ultra fast transient response (up to 10MHz bandwidth)
- ◆ Excellent line and load regulation specifications
- ◆ Power D-Pak package (TO-252)
- ◆ Thermal shutdown and current limit protection
- ◆ Junction temperature range: -40°C to +125°C

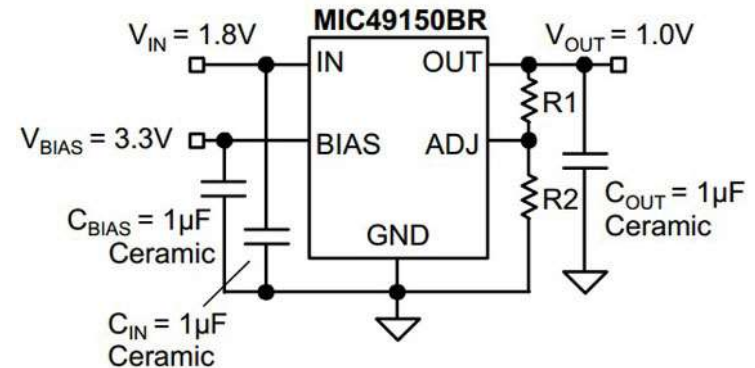




MIC49150

1.5A Low Voltage LDO Regulator with Dual Input Voltages

- ◆ Input voltage range:
- ◆ V_{IN} : 1.4V to 6.5V
- ◆ V_{BIAS} : 3.0V to 6.5V
- ◆ Stable with 1 μ F ceramic capacitor
- ◆ $\pm 1\%$ initial tolerance
- ◆ Maximum dropout voltage ($V_{IN}-V_{OUT}$) of 500mV over temperature
- ◆ Adjustable output voltage down to 0.9V
- ◆ Ultra fast transient response (up to 10MHz bandwidth)
- ◆ Excellent line and load regulation specifications
- ◆ Logic-controlled shutdown option
- ◆ Thermal shutdown and current limit protection
- ◆ Power MSOP-8 and S-Pak packages
- ◆ Junction temperature range: -40°C to +125°C

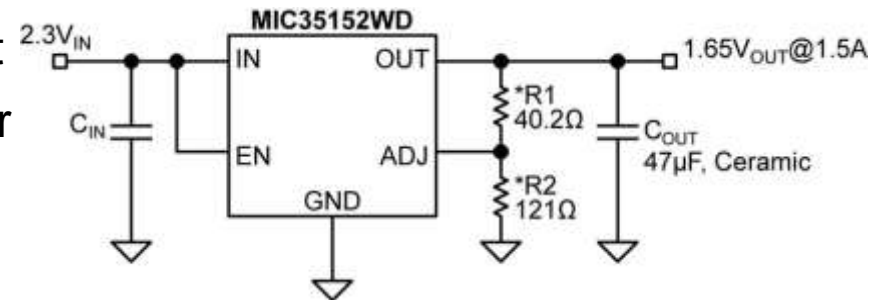




MIC35152

1.5A, Low Voltage μ Cap LDO Regulator

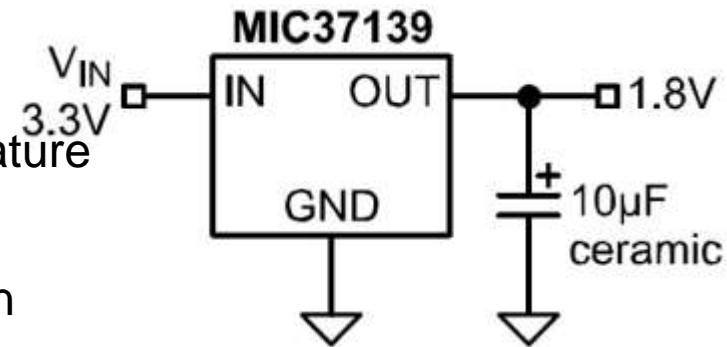
- ◆ 1.5A minimum guaranteed output current
- ◆ Stable with ceramic or tantalum capacitor
- ◆ Wide input voltage range
 - V_{IN} : 2.25V to 6.0V
- ◆ $\pm 1.0\%$ initial output tolerance
- ◆ 600mV maximum dropout voltage over temperature
 - Ideal for 3.0V to 2.5V conversion
 - Ideal for 2.5V to 1.8V, 1.65V, or 1.5V conversion
- ◆ Excellent line and load regulation specifications
- ◆ Logic controlled shutdown
- ◆ Thermal shutdown and current limit protection
- ◆ Reverse-leakage protection
- ◆ -40°C to $+125^{\circ}\text{C}$ junction temperature
- ◆ Power D-Pak package (TO-252)



MIC37139

1.5A, Low-Voltage μ Cap LDO Regulator

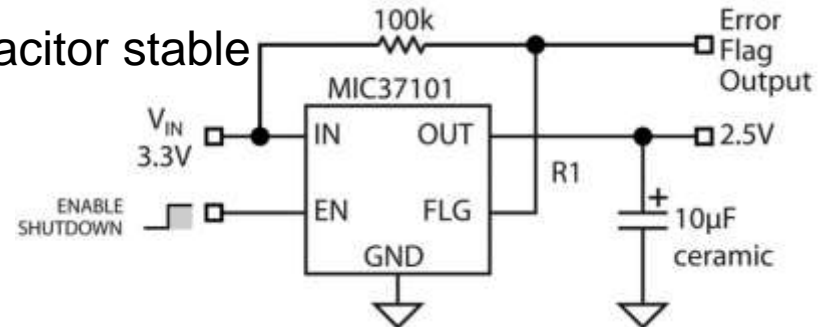
- ◆ 1.5A minimum guaranteed output current
- ◆ 500mV maximum dropout voltage over temperature
- ◆ Ideal for 3.0V to 2.5V conversion
- ◆ Ideal for 2.5V to 1.8V, 1.65V, or 1.5V conversion
- ◆ Stable with ceramic or tantalum capacitor
- ◆ Wide input voltage range:
- ◆ V_{IN} : 2.25V to 6.0V
- ◆ $\pm 1.0\%$ initial output tolerance
- ◆ Fixed 1.8V output voltage
- ◆ Excellent line and load regulation specifications
- ◆ Thermal shutdown and current limit protection
- ◆ Reverse leakage protection
- ◆ Low profile SOT-223 package



MIC37100/1/2

1A Low-Voltage μ Cap LDO Regulator

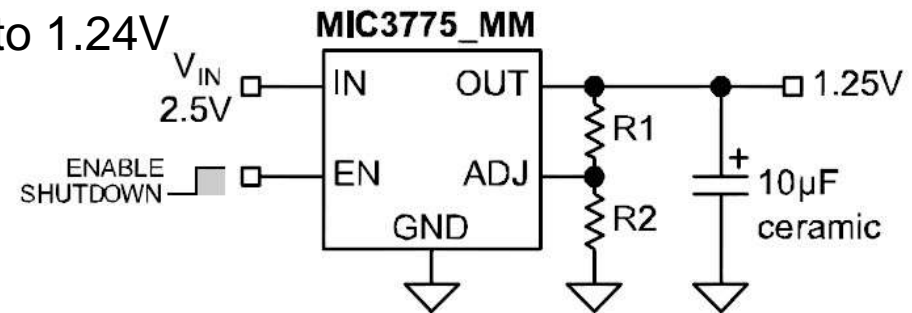
- ◆ Fixed and adjustable output voltages to 1.24V
- ◆ μ Cap Regulator, 10 μ F ceramic output capacitor stable
- ◆ 280mV typical dropout at 1A
 - Ideal for 3.0V to 2.5V conversion
 - Ideal for 2.5V to 1.8V, 1.65V, or 1.5V conversion
- ◆ 1A minimum guaranteed output current
- ◆ 1% initial accuracy
- ◆ Low ground current
- ◆ Current limiting and thermal shutdown
- ◆ Reverse leakage protection
- ◆ Fast transient response
- ◆ Low-profile SOT-223 package
- ◆ Power SO-8 package
- ◆ S-PAK package (MIC37102 only)



MIC3775

750mA μ Cap Low-Voltage Low-Dropout Regulator

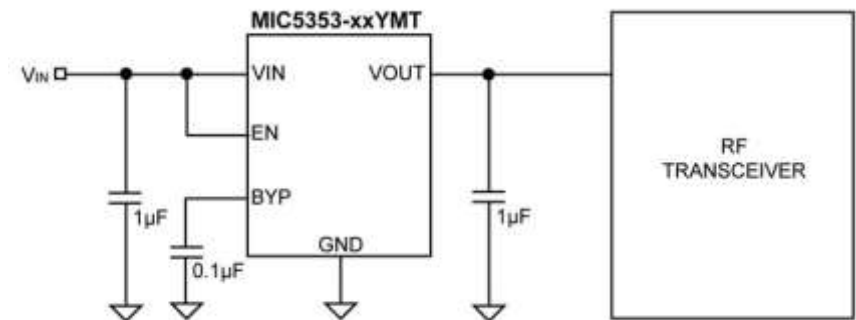
- ◆ Fixed and adjustable output voltages to 1.24V
- ◆ 280mV typical dropout at 750mA
 - Ideal for 3.0V to 2.5V conversion
 - Ideal for 2.5V to 1.8V or 1.65V conversion
- ◆ Stable with ceramic capacitor
- ◆ 750mA minimum guaranteed output current
- ◆ 1% initial accuracy
- ◆ Low ground current
- ◆ Current limiting and thermal shutdown
- ◆ Reverse leakage protection
- ◆ Fast transient response
- ◆ Low-profile power MSOP-8 package



MIC5353

500mA LDO in 1.6mm x 1.6mm Package

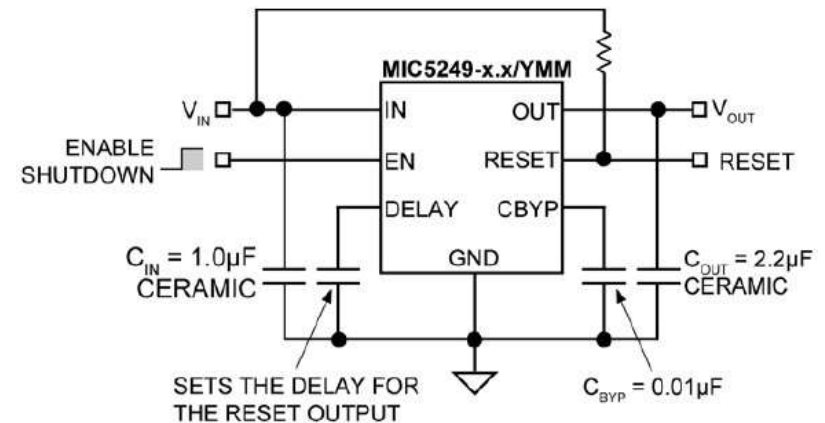
- ◆ 500mA guaranteed output current
- ◆ Input voltage range: 2.6V to 6V
- ◆ Ultra-low dropout voltage: 160mV at 500mA
- ◆ $\pm 2\%$ initial accuracy
- ◆ Ultra-low output noise: 30 μ Vrms
- ◆ Low quiescent current: 90 μ A
- ◆ Stable with ceramic output capacitors
- ◆ 35 μ s turn-on time
- ◆ Thermal shutdown and current limit protection
- ◆ Tiny 6-pin 1.6mm x 1.6mm Thin MLF® lead-less package



MIC5249

300mA μ Cap LDO with Programmable Power-On Reset Delay

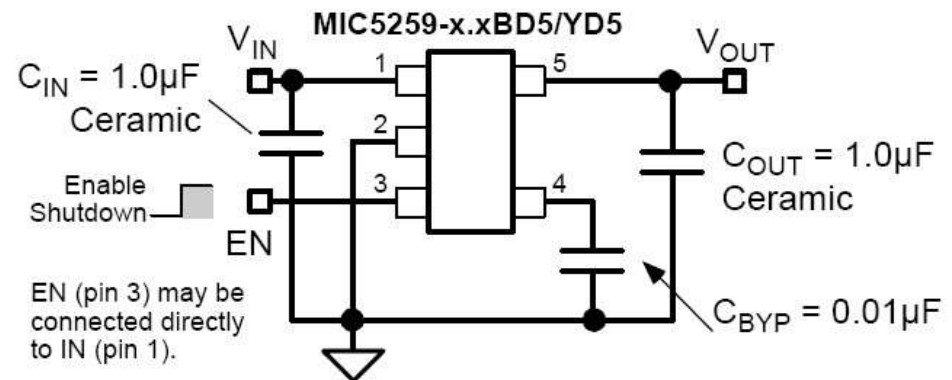
- ◆ 300mA output current
- ◆ High PSRR: 65dB at 120Hz
- ◆ Stable with ceramic output capacitor
- ◆ Power-on reset output with adjustable delay time
- ◆ High output accuracy:
 - $\pm 1.0\%$ initial accuracy
 - $\pm 3.0\%$ over temperature
- ◆ Low dropout voltage: 400mV at 300mA
- ◆ Low quiescent current: 85mA
- ◆ Zero off-mode current state
- ◆ Thermal shutdown protection
- ◆ Current limit protection
- ◆ Tiny MSOP-8 package



MIC5259

300mA High PSRR, Low Noise μ Cap CMOS LDO

- ◆ Input voltage range: 2.7V to 6.0V
- ◆ PSRR: 70dB at 1kHz
- ◆ Low output noise: 30 μ Vrms
- ◆ Stability with ceramic output capacitors
- ◆ Low dropout: 300mV at 300mA
- ◆ High output accuracy:
 - 1.5% initial accuracy
 - 3.0% over temperature
- ◆ Low quiescent current: 105 μ A
- ◆ Tight load and line regulation
- ◆ TTL logic-controlled enable input
- ◆ Zero off-mode current state
- ◆ Thermal shutdown and current limit protection

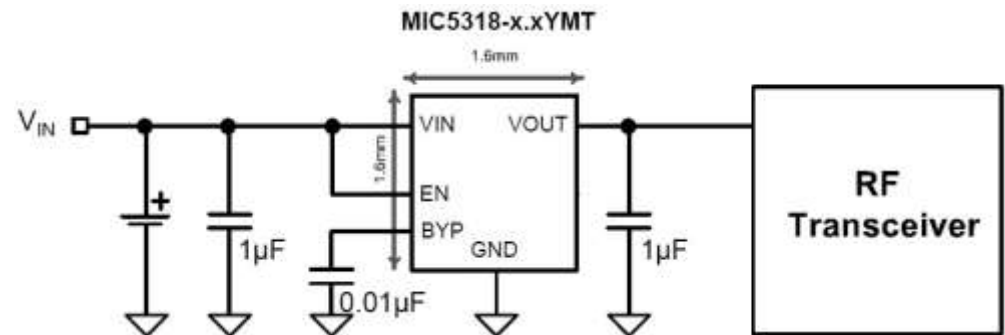




MIC5318

High Performance 300mA μ Cap ULDO

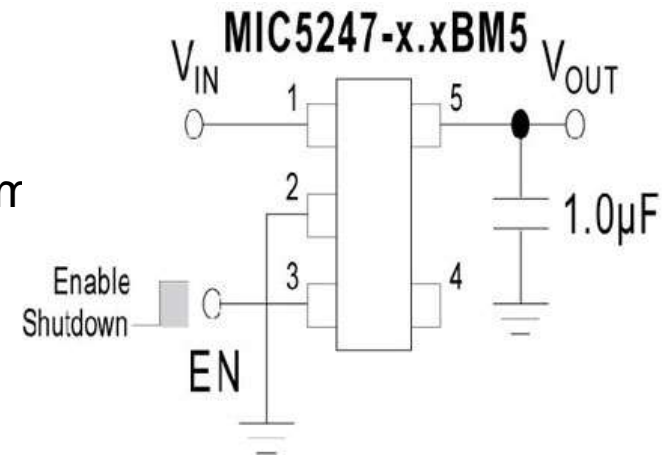
- ◆ Ultra-low dropout voltage: 110mV at 300mA
- ◆ Input voltage range: 2.3V to 6.0V
- ◆ 300mA guaranteed output current
- ◆ Stable with ceramic output capacitors
- ◆ Ultra-low output noise: 30 μ Vrms
- ◆ Low quiescent current: 85 μ A total
- ◆ High PSRR: >70dB at 1kHz
- ◆ Less than 35 μ s turn-on time
- ◆ High output accuracy:
 - ◆ $\pm 2\%$ initial accuracy
 - ◆ $\pm 3\%$ over temperature
- ◆ Thermal shutdown and current limit protection
- ◆ Tiny 6-pin 1.6mm x 1.6mm Thin MLF® package
- ◆ Thin SOT23-5 package



MIC5247

150mA Low-Voltage μ Cap Linear Regulator

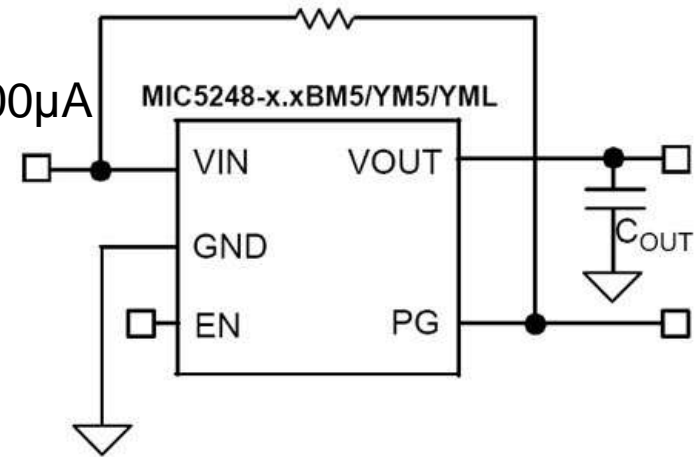
- ◆ Ultra-low noise
- ◆ Low voltage outputs
- ◆ Load-independent, ultra-low ground current: 85nA
- ◆ 150mA output current
- ◆ Current limiting
- ◆ Thermal shutdown
- ◆ Tight load and line regulation
- ◆ Zero off-mode current
- ◆ Stability with low-ESR capacitors
- ◆ Fast transient response
- ◆ Logic-controlled enable input



MIC5248

150mA μ Cap CMOS LDO Regulator with Power Good

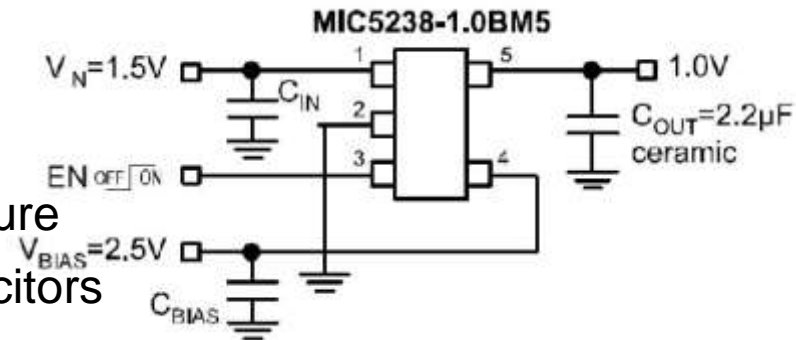
- ◆ Power Good indicator
- ◆ Load-independent, ultra-low ground current: 100 μ A
- ◆ 150mA output current
- ◆ Current limiting
- ◆ Thermal shutdown
- ◆ Tight load and line regulation
- ◆ Zero off-mode current
- ◆ Stability with low-ESR capacitors
- ◆ Fast transient response
- ◆ TTL logic-controlled enable input



MIC5238

Ultra-Low Quiescent Current, 150mA μ Cap LDO Regulator

- ◆ Ultra-low input voltage range: 1.5V to 6V
- ◆ Low dropout voltage: 310mV at 150mA
- ◆ High output accuracy: $\pm 2.0\%$ over temperature
- ◆ μ Cap: stable with ceramic or tantalum capacitors
- ◆ Excellent line and load regulation specifications
- ◆ Zero off-mode current
- ◆ Ultra-low output voltage: 1.1V minimum output voltage
- ◆ Reverse leakage protection
- ◆ Thermal shutdown and current limit protection
- ◆ IttyBitty® SOT-23-5 package

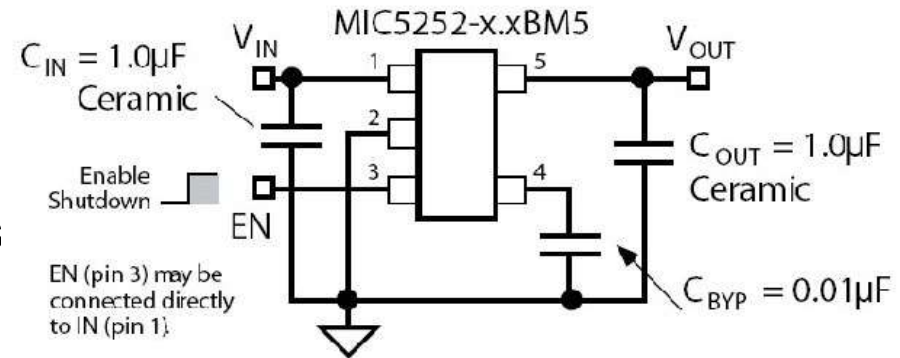




MIC5252

150mA High PSRR, Low Noise μ Cap CMOS LDO

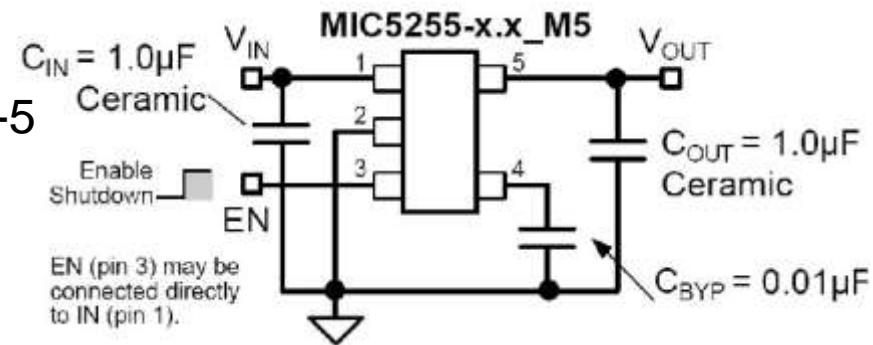
- ◆ Input voltage range: 2.7V to 6.0V
- ◆ PSRR equals 50dB at $V_O + 0.3V$
- ◆ Ultra-low output noise: $30\mu V_{rms}$
- ◆ Stability with ceramic output capacitors
- ◆ Ultra-low dropout: 135mV at 150mA
- ◆ High output accuracy:
 - 1.0% initial accuracy
 - 2.0% over temperature
- ◆ Low quiescent current: 90 μ A
- ◆ Tight load and line regulation
- ◆ TTL logic-controlled enable input
- ◆ Zero off-mode current
- ◆ Thermal shutdown and current limit protection



MIC5255

150mA Low Noise μ Cap CMOS LDO

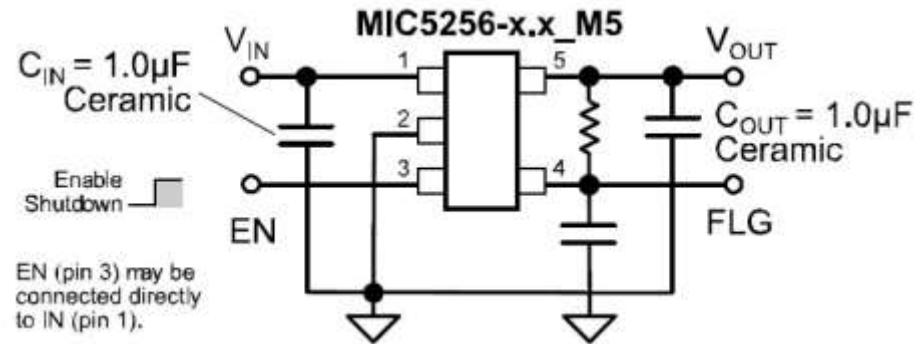
- ◆ Input voltage range: 2.7V to 6.0V
- ◆ Thin SOT package: 1mm height SOT-23-5
- ◆ Ultra-low output noise: 30 μ V(rms)
- ◆ Stability with ceramic output capacitors
- ◆ Ultra-low dropout: 135mV at 150mA
- ◆ High output accuracy:
 - 1.0% initial accuracy
 - 2.0% over temperature
- ◆ Low quiescent current: 90 μ A
- ◆ Tight load and line regulation
- ◆ TTL logic-controlled enable input
- ◆ Zero off-mode current
- ◆ Thermal shutdown and current limit protection



MIC5256

150mA μ Cap LDO with Error Flag

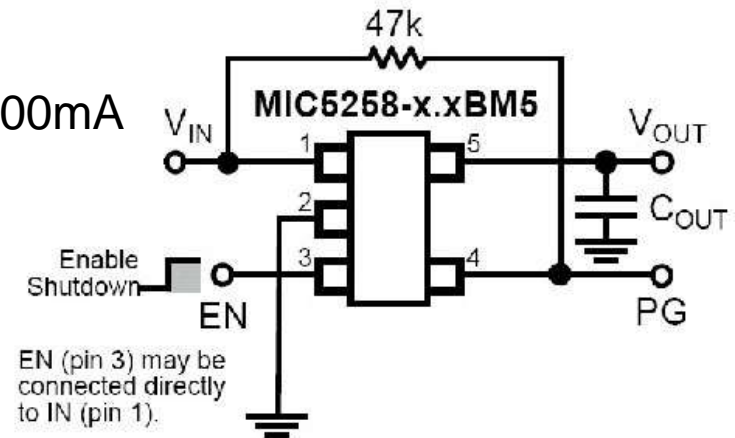
- ◆ Input voltage range: 2.7V to 6.0V
- ◆ Thin SOT package: 1mm height
- ◆ Error flag indicates fault condition
- ◆ Stable with ceramic output capacitor
- ◆ Ultra-low dropout: 135mV at 150mA
- ◆ High output accuracy:
 - 1.0% initial accuracy
 - 2.0% over temperature
- ◆ Low quiescent current: 90 μ A
- ◆ Tight load and line regulation
- ◆ Thermal shutdown and current limit protection
- ◆ Zero off-mode current
- ◆ TTL logic-controlled enable input



MIC5258

150mA μ Cap CMOS LDO Regulator with Power Good

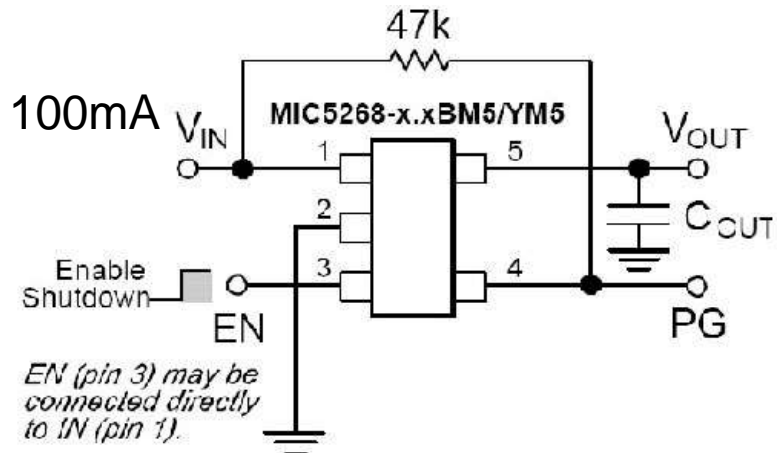
- ◆ Power Good indicator
- ◆ Load-independent, ultra-low ground current: 100mA
- ◆ 150mA output current
- ◆ Current limiting
- ◆ Thermal shutdown
- ◆ Tight load and line regulation
- ◆ Zero off-mode current
- ◆ Stability with low-ESR capacitors
- ◆ Fast transient response
- ◆ TTL logic-controlled enable input



MIC5268

150mA μ Cap CMOS LDO Regulator with Power Good

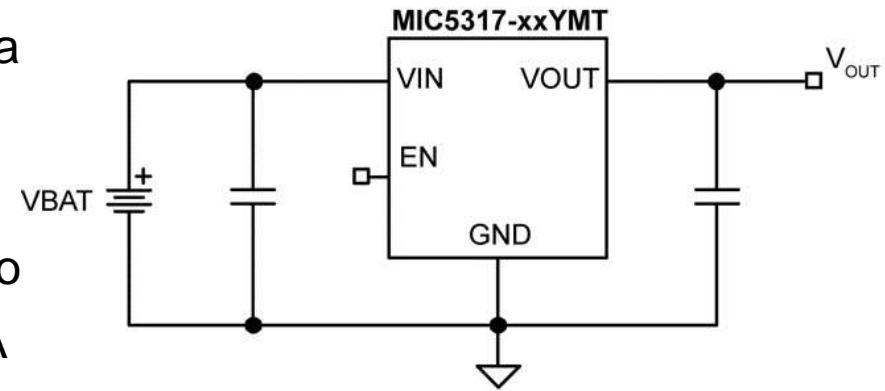
- ◆ Power Good indicator
- ◆ Load-independent, ultra-low ground current: 100mA
- ◆ 150mA output current
- ◆ Current limiting
- ◆ Thermal shutdown
- ◆ Tight load and line regulation
- ◆ Zero off-mode current
- ◆ Stability with low-ESR capacitors
- ◆ Fast transient response
- ◆ TTL logic-controlled enable input



MIC5317

High-Performance Single 150mA LDO

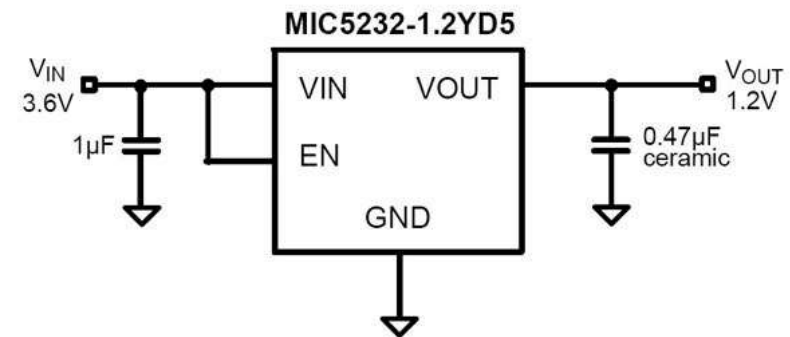
- ◆ Tiny 1mm × 1mm Thin DFN, SOT23-5 a
- ◆ Wide 2.5V to 6V operating range
- ◆ 150mA guaranteed output current
- ◆ Stable with 1 μ F ceramic output capacitor
- ◆ Low dropout voltage: 155mV @ 150mA
- ◆ Excellent load/line transient response
- ◆ Low quiescent current: 29 μ A
- ◆ High PSRR: 70dB
- ◆ Thermal-shutdown and current-limit protection



MIC5232

10mA Ultra-Low Quiescent Current μ Cap LDO

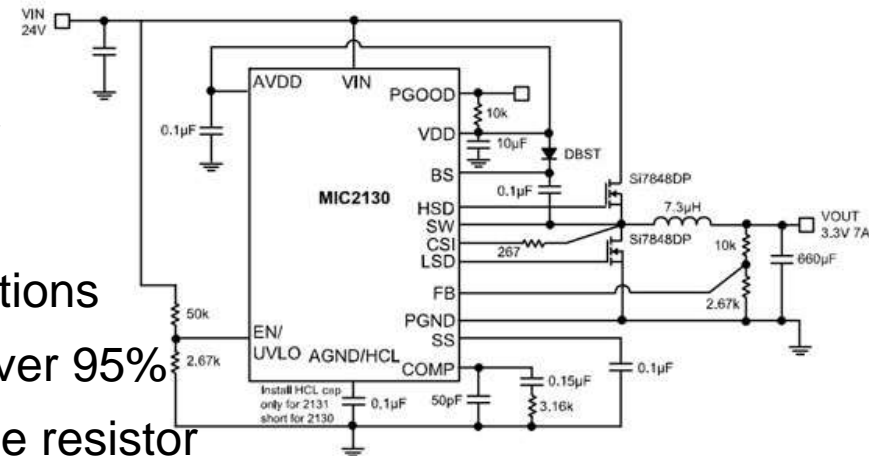
- ◆ Input voltage range: 2.7V to 7.0V
- ◆ Ultra-low I_q : Only 1.8 μ A operating current
- ◆ Stable with 0.47 μ F ceramic output capacitor
- ◆ Low dropout voltage of 100mV at 10mA
- ◆ Reverse Battery Protection
- ◆ High output accuracy:
 - +2.0% initial accuracy
 - +3.0% over temperature
- ◆ Logic-Level Enable Input
- ◆ Miniature 6-pin 2mm x 2mm MLF® package
- ◆ Lead-Free Thin SOT-23-5 Package
- ◆ Tight Load and Line Regulation



MIC2130/1-1/4

High Voltage Synchronous Buck Control IC with Low EMI Option

- ◆ 8V to 40V input voltage range
- ◆ Adjustable output voltages down to 0.7V
- ◆ Low EMI option (MIC2131)
- ◆ Fixed 150kHz and 400kHz frequency options
- ◆ Adaptive gate drive allows efficiencies over 95%
- ◆ Programmable current limit with no sense resistor
- ◆ Senses low-side MOSFET current
- ◆ Excellent line and load regulation due to fast hysteretic control loop during transients
- ◆ Internal drivers allow 15A output current
- ◆ Power Good output allow simple sequencing
- ◆ 100% increase in current limit (MIC2131)
- ◆ 16-pin e-TSSOP and 16-pin 4mm x 4mm MLF[®]
- ◆ Junction temperature range of -40°C to +125°C

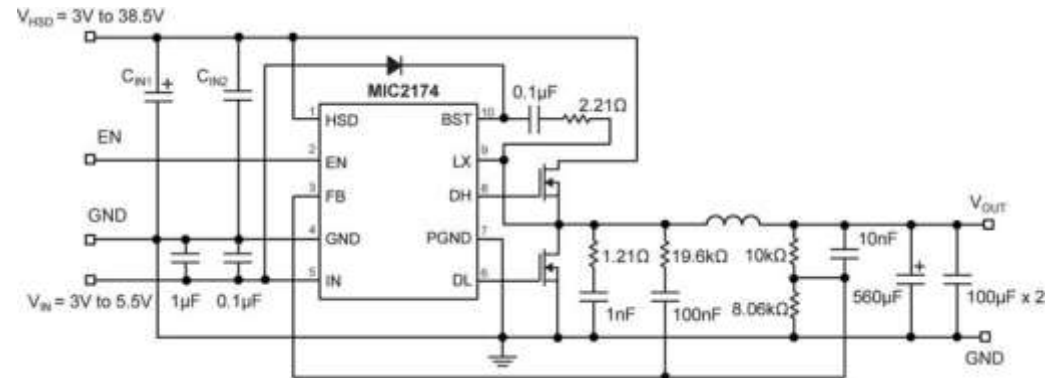




MIC2174/C

300kHz PWM Buck Controller

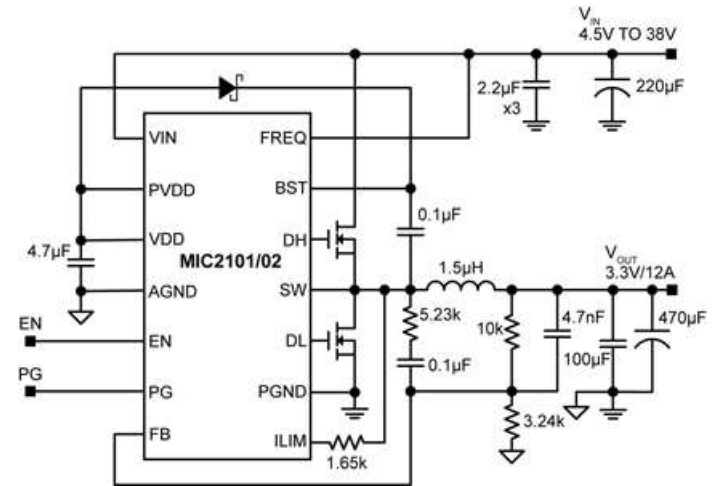
- ◆ 3V to 40V input voltage
- ◆ Any Capacitor™ stable
 - Zero ESR to high ESR
- ◆ 300kHz switching frequency
- ◆ Up to 94% efficiency
- ◆ Hyper Speed Control™ architecture enables
 - High delta V operation ($V_{IN}=40V$ and $V_{OUT}=0.8V$)
 - Smaller output capacitors than competitors
- ◆ Foldback current limit and "hiccup" mode short-circuit protection
- ◆ Adjustable output from 0.8V to 3.6V ($V_{HSD} > 28V$)
 - $\pm 1\%$ FB accuracy (MIC2174)
 - $\pm 3\%$ FB accuracy (MIC2174C)
- ◆ Safe start-up into pre-biased loads
- ◆ $-40^{\circ}C$ to $+125^{\circ}C$ junction temperature range



MIC2101/2

38V, Synchronous Buck Controllers Featuring Adaptive On-Time Control

- ◆ Hyper Speed Control™ architecture enables
 - High delta V operation ($V_{IN}=38V$ and $V_{OUT}=1.2V$)
 - Any Capacitor™ stable
- ◆ 4.5V to 38V input voltage
- ◆ 0.8V Reference Voltage with $\pm 1\%$ accuracy
- ◆ Hyper Light Load Control (MIC2101 only)
- ◆ Hyper Speed Control (MIC2102 only)
- ◆ Enable input, Power-Good output
- ◆ 200kHz to 600kHz, programmable switching frequency
- ◆ Built-in 5V regulator for single-supply operation
- ◆ Programmable current limit and fold-back “hiccup” mode short-circuit protection
- ◆ 5ms internal soft-start, internal compensation, and thermal shutdown
- ◆ $-40^{\circ}C$ to $+125^{\circ}C$ junction temperature range
- ◆ Available in 16-pin 3mm x 3mm MLF® package

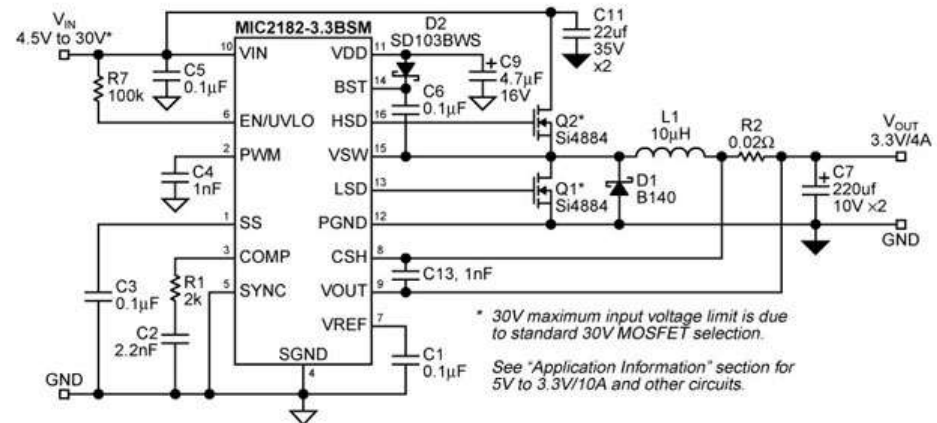




MIC2182

High-Efficiency Synchronous Buck Controller

- ◆ 4.5V to 32V Input voltage range
- ◆ 1.25V to 6V Output voltage range
- ◆ 95% efficiency
- ◆ 300kHz oscillator frequency
- ◆ 5 ω impedance MOSFET Drivers
- ◆ Drives N-Channel MOSFETs
- ◆ 600 μ A typical quiescent current (skip-mode)
- ◆ Logic controlled micropower shutdown ($I_Q < 0.1\mu$ A)
- ◆ Cycle-by-cycle current limiting
- ◆ Precision 1.245V reference output
- ◆ 0.6% total regulation
- ◆ 16-pin SOP and SSOP packages
- ◆ Sustained short-circuit protection at any input voltage
- ◆ 20A output current capability

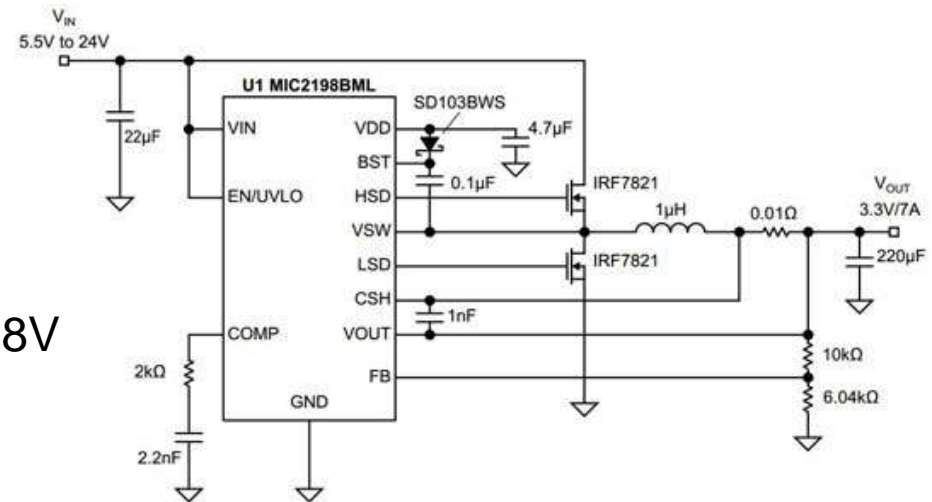




MIC2198

500kHz 4mm x 4mm Synchronous Buck Controller

- ◆ 4.5V to 32V input range
- ◆ 4mm x 4mm MLF[®] package
- ◆ 500kHz PWM operation
- ◆ >90% efficiency
- ◆ Output voltage adjustable down to 0.8V
- ◆ 20A output current capability
- ◆ Drives all N-Channel MOSFETs
- ◆ Logic controlled micropower shutdown
- ◆ Cycle-by-cycle current limiting
- ◆ Adjustable undervoltage lockout
- ◆ Frequency foldback overcurrent protection

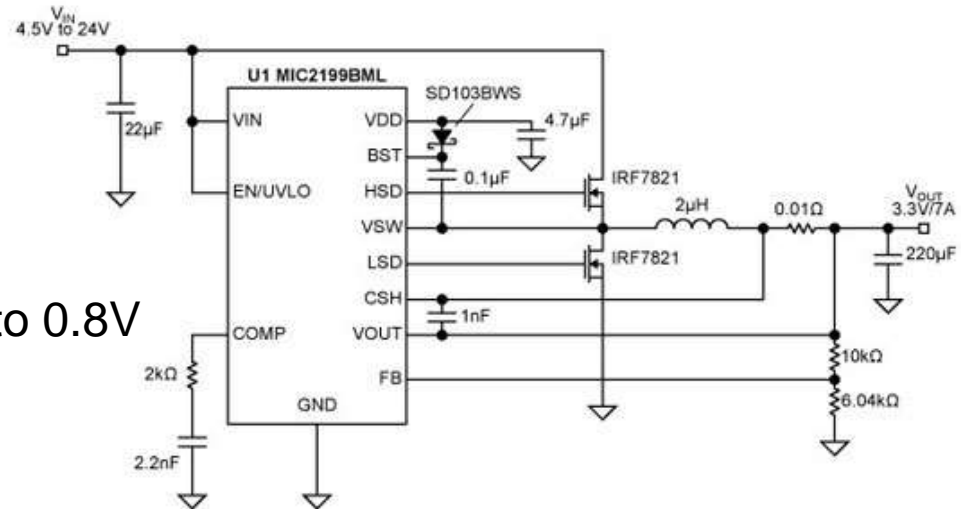




MIC2199

300kHz 4mm x 4mm Synchronous Buck Controller

- ◆ 4.5V to 32V input range
- ◆ 4mm x 4mm MLF[®] package
- ◆ 300kHz PWM operation
- ◆ 95% efficiency
- ◆ Output voltage adjustable down to 0.8V
- ◆ 20A output current capability
- ◆ Drives all N-Channel MOSFETs
- ◆ Logic controlled micropower shutdown
- ◆ Cycle-by-cycle current limiting
- ◆ Adjustable undervoltage lockout
- ◆ Frequency foldback overcurrent protection

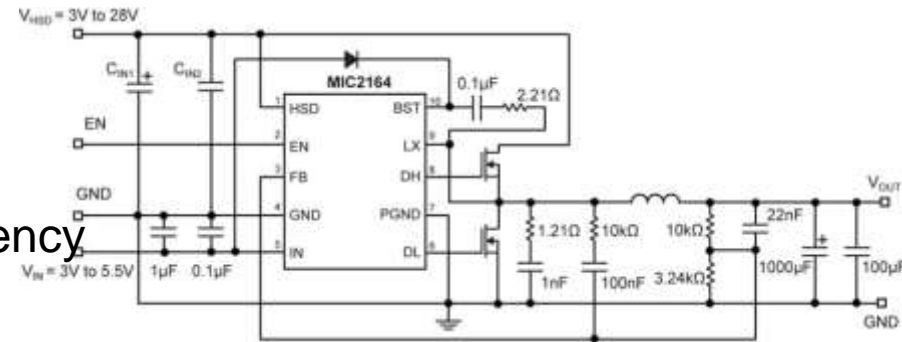




MIC2164/-2/-3/C

300kHz PWM Buck Controller

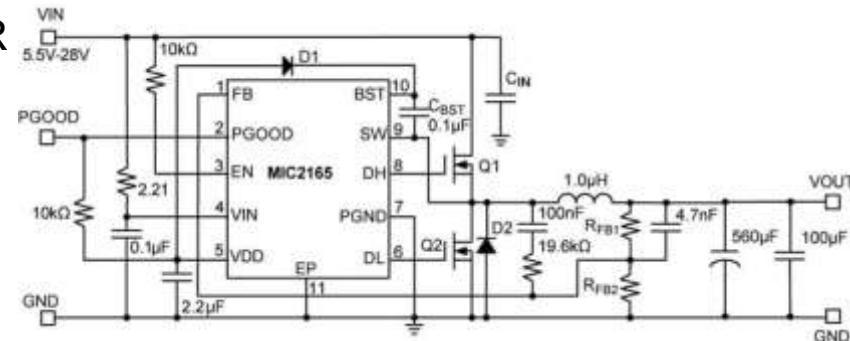
- ◆ 3V to 28V input voltage
- ◆ Zero ESR to high ESR
- ◆ 25A output current capability
- ◆ 300kHz/600kHz/1MHz switching frequency
- ◆ Adaptive on-time mode control
- ◆ Hyper Speed Control™ architecture enables
- ◆ High delta V operation ($V_{HSD}=28V$ and $V_{OUT}=0.8V$)
- ◆ Smaller output capacitors than competitors
- ◆ Adjustable output from 0.8V to 5.5V with $\pm 1\%$ (MIC2164/-2/-3) or $\pm 3\%$ (MIC2164C) feedback accuracy
- ◆ Up to 95% efficiency
- ◆ Foldback current limit and "hiccup" mode short-circuit protection
- ◆ -40°C to $+125^{\circ}\text{C}$ junction temperature range
- ◆ Available in 10-pin MSOP package



MIC2165

Adaptive On-Time DC-DC Controller Featuring HyperLight Load® Hyper Speed Control™ Family

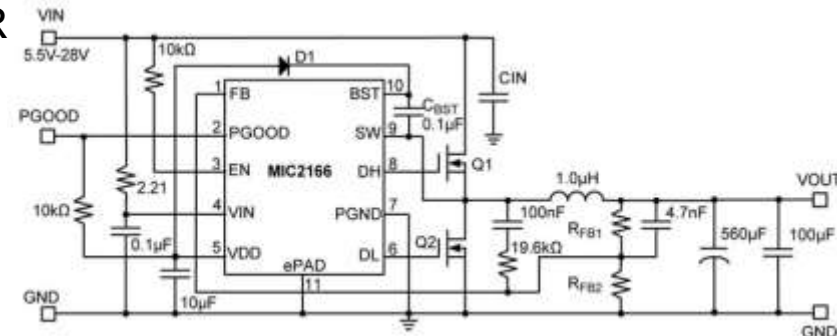
- ◆ Hyper Speed Control™ architecture enables
 - High VIN/Low VOUT operation (VIN=28V and VOUT=0.8V)
 - Smallest output capacitance
- ◆ HyperLight Load® Efficiency
- ◆ Built-in 5V regulator for single-supply operation
- ◆ Any Capacitor™ stable: Zero ESR to high ESR
- ◆ Power-Good output
- ◆ Input voltage range: 4.5V to 28V
- ◆ 5 μ A typical shutdown current
- ◆ 25A output current drive capability
- ◆ Adjustable output from 0.8V to 5.5V with $\pm 1\%$ FB Accuracy
- ◆ 600kHz switching frequency
- ◆ Internal 5ms digital soft start
- ◆ Thermal shutdown and "hiccup" current limit protection
- ◆ No external current-sense resistor required
- ◆ Safe start-up into pre-biased loads
- ◆ 10-pin MSOP ePad package



MIC2166

Adaptive On-Time DC-DC Controller Hyper Speed Control™ Family

- ◆ Hyper Speed Control™ architecture enables
 - High delta V operation ($V_{IN}=28V$ and $V_{OUT}=0.8V$)
 - Smallest output capacitance
- ◆ Built-in 5V regulator for single-supply operation
- ◆ Any Capacitor™ stable: Zero ESR to high ESR
- ◆ Power Good (PGOOD) output
- ◆ Input voltage range: 4.5V to 28V
- ◆ 5μA typical shutdown current
- ◆ 25A output current drive capability
- ◆ Adjustable output from +0.8V to 5.5V with $\pm 1\%$ accuracy
- ◆ 600kHz switching frequency
- ◆ Internal 5ms digital soft-start
- ◆ Thermal shutdown and "hiccup" current limit protection
- ◆ No external current-sense resistor required
- ◆ Safe start-up into pre-biased loads
- ◆ 10-pin MSOP ePad package

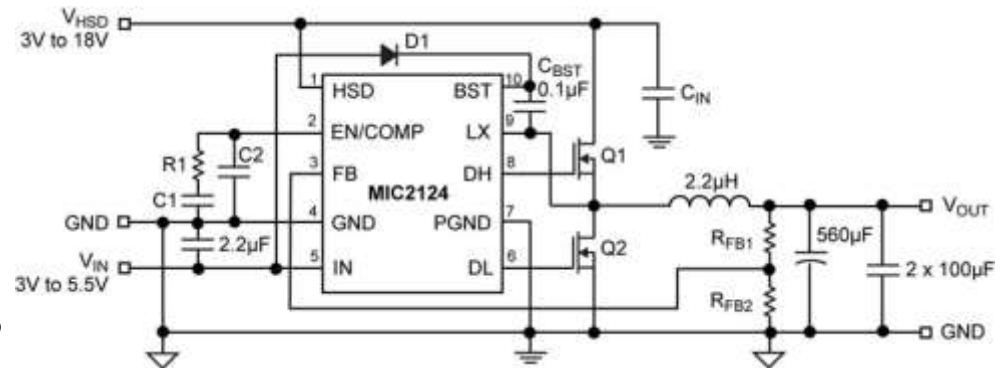


MIC2124



Constant Frequency, Synchronous Current Mode Buck Controller Featuring Adaptive On-Time Control

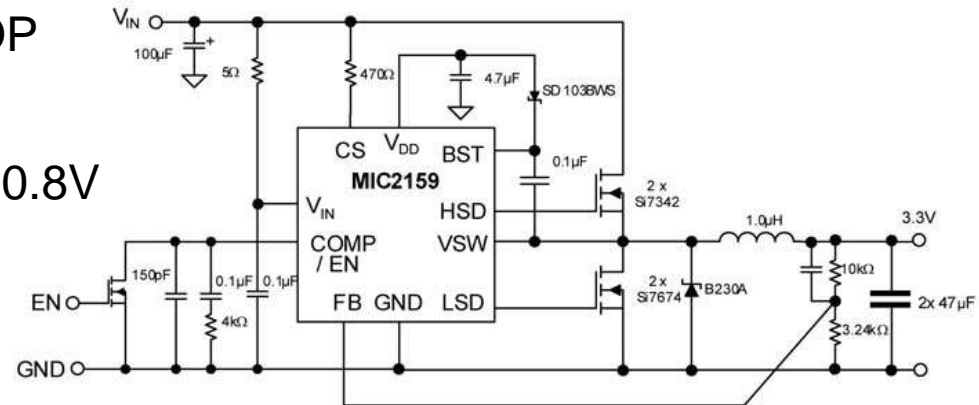
- ◆ +3V to +18V input voltage
- ◆ 25A output current capability
- ◆ Any Capacitor™ stable
 - Zero ESR to high ESR
- ◆ Output down to 0.8V with $\pm 1\%$ FB
- ◆ Up to 94% efficiency
- ◆ 300kHz switching frequency
- ◆ All N-Channel MOSFET design
- ◆ Shutdown feature with EN/COMP
- ◆ No current-sense resistor needed
- ◆ Internal 4ms digital soft-start
- ◆ Cycle-by-Cycle foldback current-limit protection
- ◆ 10-pin MSOP package
- ◆ -40°C to +125°C junction temperature range



MIC2159

SYNCHRONOUS-itty™ Step-Down Converter IC

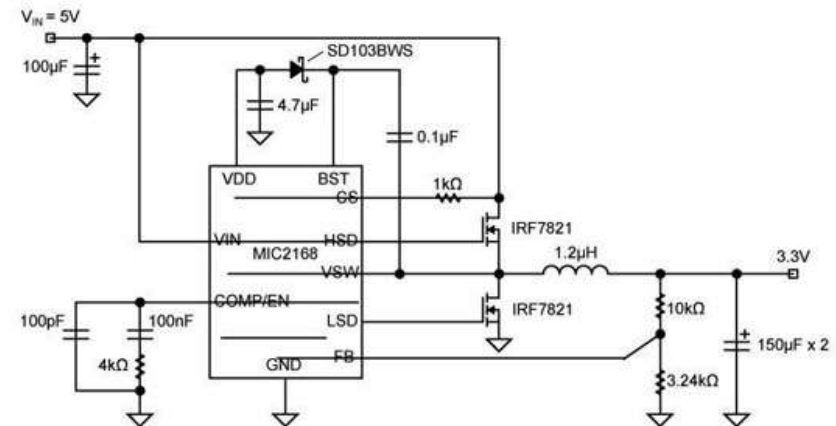
- ◆ Small footprint 10-lead ePAD MSOP
- ◆ 3V to 14.5V input voltage range
- ◆ Adjustable output voltage down to 0.8V
- ◆ 400KHz operation
- ◆ Drives two N-Channel MOSFETs
 - Built-in 3Ω drivers
- ◆ Simple control: voltage-mode PWM
- ◆ Fast transient response
 - Externally compensated
- ◆ "Hiccup" mode short-circuit protection
- ◆ Dual function COMP and EN pin
 - $I_{SD} = 50\mu A$
- ◆ Short minimum ON time
 - 30ns
 - Very low duty cycle possible



MIC2168/A

1MHz PWM Synchronous Buck Control IC

- ◆ 3V to 14.5V input voltage range
- ◆ Adjustable output voltage down to 0.8V
- ◆ Up to 95% efficiency
- ◆ 1MHz PWM operation
- ◆ No external current sense resistor
- ◆ Adaptive gate drive increases efficiency
- ◆ Adjustable current-limit senses high-side N-Channel MOSFET current
- ◆ Ultra-fast response with hysteretic transient recovery mode
- ◆ Overvoltage protection protects the load in fault conditions
- ◆ Dual mode current limit speeds up recovery time
- ◆ "Hiccup" mode short-circuit protection Internal soft-start
- ◆ Dual function COMP and EN pin allows low-power shutdown
- ◆ Small size MSOP 10-lead package

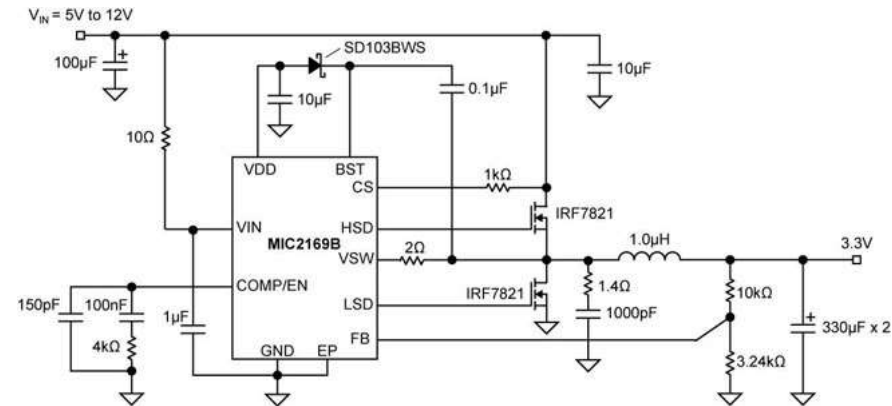




MIC2169/A/B

500kHz PWM Synchronous Buck Control IC

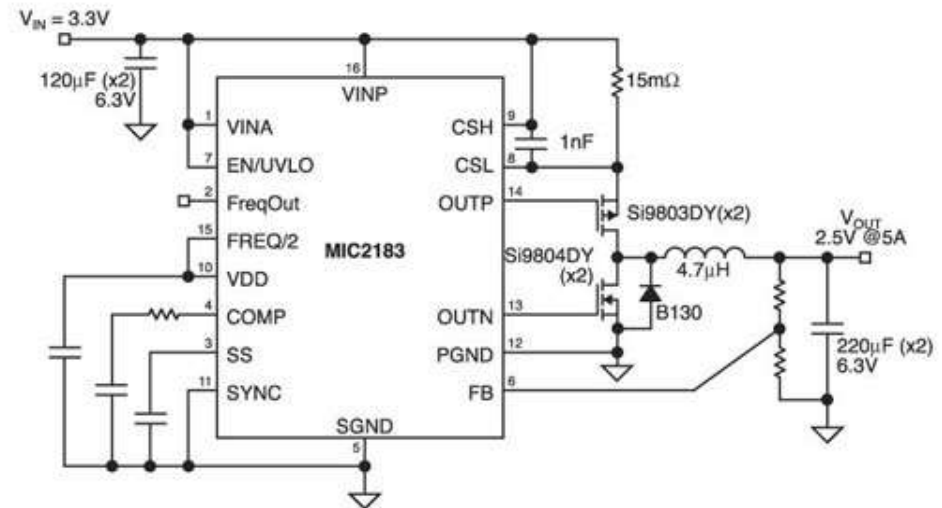
- ◆ 3V to 14.5V input voltage range
- ◆ Adjustable output voltage down to 0.8V
- ◆ 500kHz PWM operation
- ◆ Up to 95% efficiency
- ◆ Output pre-biased protection
- ◆ Built-in 2.2 ω drivers to drive two N-Channel MOSFETs
- ◆ Adaptive gate drive increases efficiency
- ◆ Simple, externally-compensated voltage-mode PWM control
- ◆ Short minimum ON time of 30ns allowing very low duty cycle
- ◆ Fast transient response
- ◆ Adjustable current limit senses high-side N-Channel MOSFET current
- ◆ Hiccup mode short-circuit protection
- ◆ Dual function COMP and EN pin allows low-power shutdown
- ◆ Available in a small size 10-pin MSOP and 10-pin MSOP ePad package



MIC2183

Low Voltage Synchronous Buck PWM Control IC

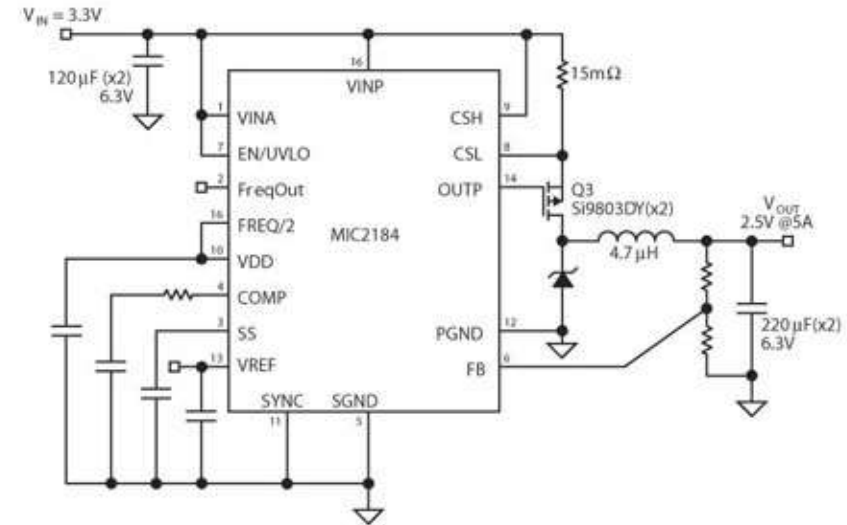
- ◆ Input voltage range: 2.9V to 14V
- ◆ >90% efficiency
- ◆ Oscillator frequency of 400kHz
- ◆ Frequency divide-by-two pin
- ◆ Frequency sync to 600kHz
- ◆ Front edge blanking
- ◆ 5W output drivers (typical)
- ◆ FreqOut oscillator output allows simple charge pump implementation in low voltage systems
- ◆ PWM current mode control
- ◆ 1μA shutdown current
- ◆ Cycle-by-cycle current limiting
- ◆ Frequency foldback short circuit protection
- ◆ 16-pin narrow-body SOP and QSOP package options



MIC2184

Low Voltage Buck PWM Control IC

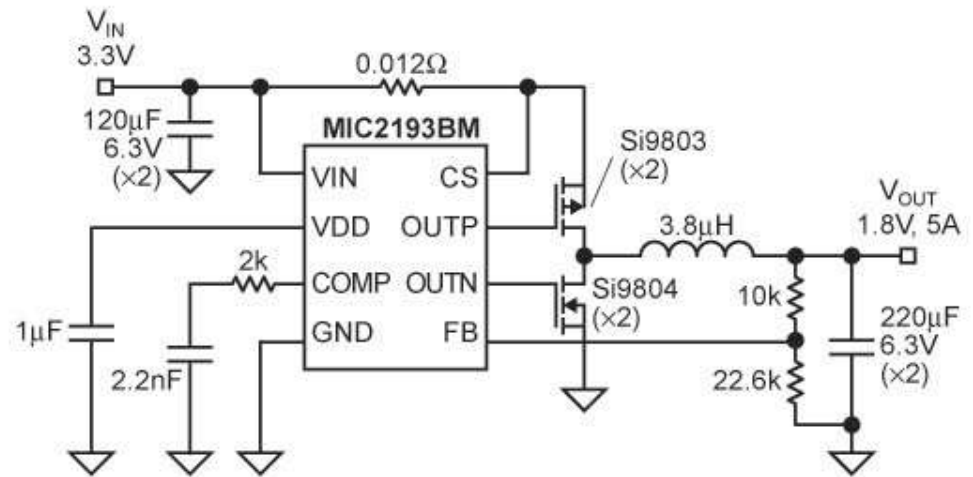
- ◆ Input voltage range: 2.9V to 14V
- ◆ >90% efficiency
- ◆ Oscillator frequency of 400kHz
- ◆ Frequency divide-by-two pin
- ◆ Frequency sync to 600kHz
- ◆ FreqOut oscillator output allows simple voltage systems
- ◆ 1.245V reference output
- ◆ Front edge blanking
- ◆ 5 ω output driver
- ◆ PWM current mode control
- ◆ 1 μ A shutdown current
- ◆ Frequency foldback short circuit protection
- ◆ 16-pin narrow-body SOIC and QSOP package options.



MIC2193

400kHz SO-8 Synchronous Buck Control IC

- ◆ 2.9V to 14V input voltage range
- ◆ 400kHz oscillator frequency
- ◆ PWM current mode control
- ◆ 100% maximum duty cycle
- ◆ Front edge blanking
- ◆ Four output drivers
- ◆ Cycle-by-cycle current limiting
- ◆ Frequency foldback short circuit protection
- ◆ 8-lead SOIC package

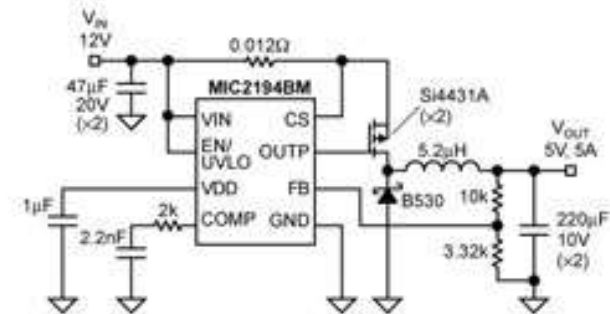




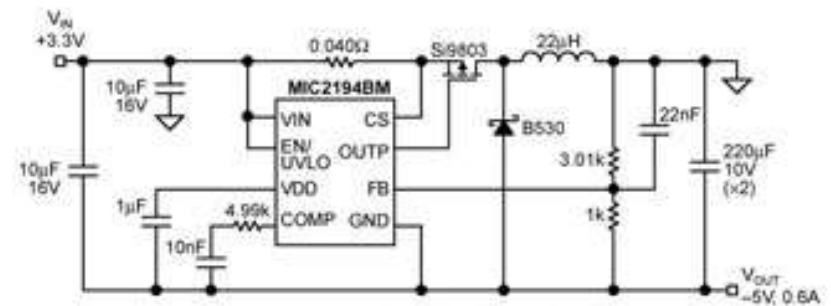
MIC2194

Low Voltage SO-8 Buck PWM Control IC

- ◆ 2.9V to 14V input voltage range
- ◆ 400kHz oscillator frequency
- ◆ PWM current mode control
- ◆ 2 ω output drivers
- ◆ 100% maximum duty cycle
- ◆ 0.5 μ A micro-power shutdown
- ◆ Programmable UVLO
- ◆ Front edge blanking
- ◆ Cycle-by-cycle current limiting
- ◆ Frequency foldback short circuit protection
- ◆ 8-lead SOIC package



Adjustable Output Buck Converter



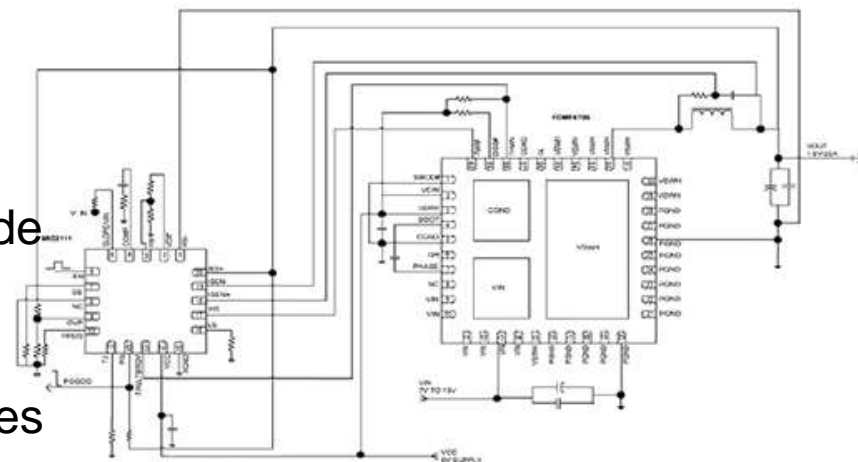
Positive-to-Negative Buck-Boost Converter



MIC2111

Single-Phase, Multi-Mode, High-Performance, Step-Down PWM Controller

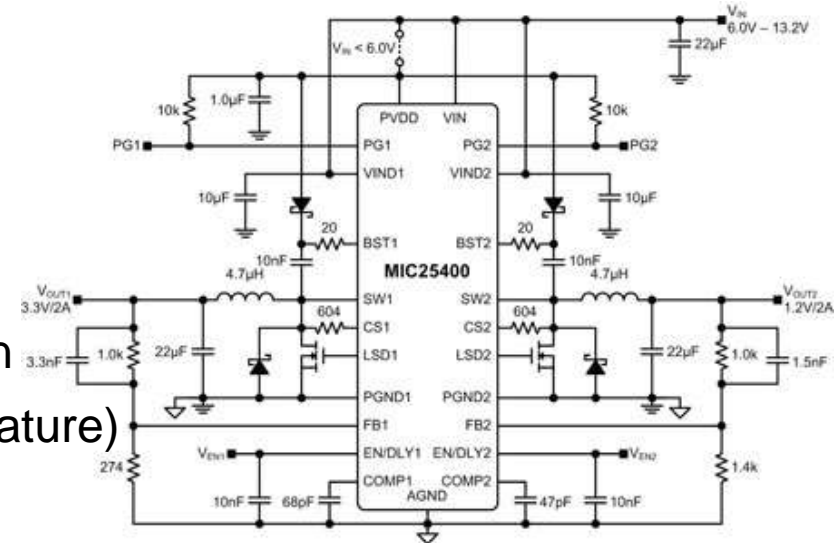
- ◆ Single 3.3V or 5V supply
- ◆ Supports load currents more than 50A
- ◆ Programmable valley-current/voltage-mode PWM architecture
- ◆ 3.3V logic PWM outputs compatible with power-stage modules and DrMOS modules
- ◆ Programmable switching frequency: 200kHz to 2MHz
- ◆ Differential remote sensing for output voltage and inductor current
- ◆ 0.6V reference voltage with total $\pm 1\%$ accuracy for output
- ◆ Adjustable soft-start/soft-stop and pre-biased safe startup
- ◆ Programmable OCP, OVP, OTP, and dedicated FAULT pin for system safe startup/stop
- ◆ -40°C to $+125^{\circ}\text{C}$ junction temperature range
- ◆ Available in 20-pin 3mm \times 3mm TQFN package



MIC25400

2A Dual Output PWM Synchronous Buck Regulator IC

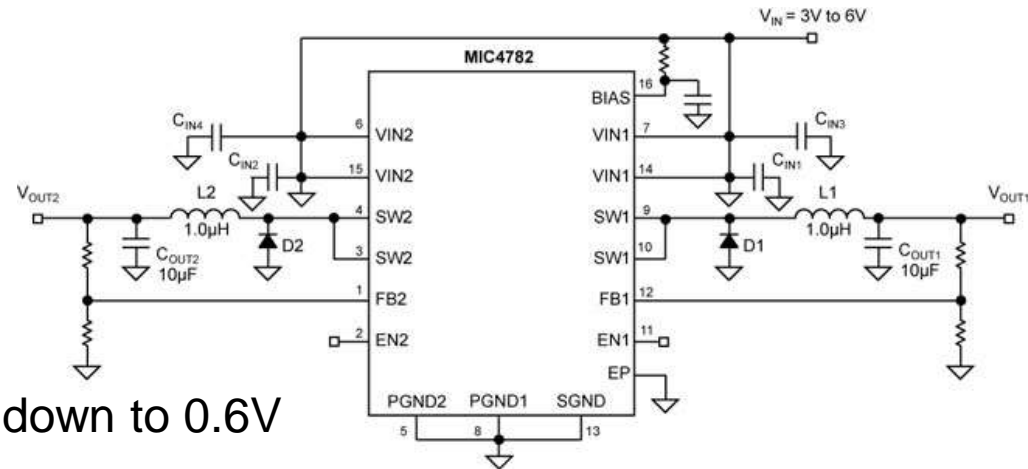
- ◆ 4.5V to 13.2V input voltage range
- ◆ Adjustable output voltages down to 0.7V
- ◆ 2A per channel
- ◆ 180° out of phase operation
- ◆ Low-side driver for synchronous operation
- ◆ 2% output voltage accuracy (over temperature)
- ◆ 1MHz switching frequency
- ◆ Output voltage sequencing
- ◆ Programmable max current-limit
- ◆ Ramp Control™ provides soft-start
- ◆ Low-side current sensing allows very low duty-cycle
- ◆ Works with ceramic output capacitors
- ◆ 24-pin 4mm x 4mm MLF® package
- ◆ Junction temperature range of -40°C to +125°C



MIC4782

1.8MHz Dual 2A Integrated Switch

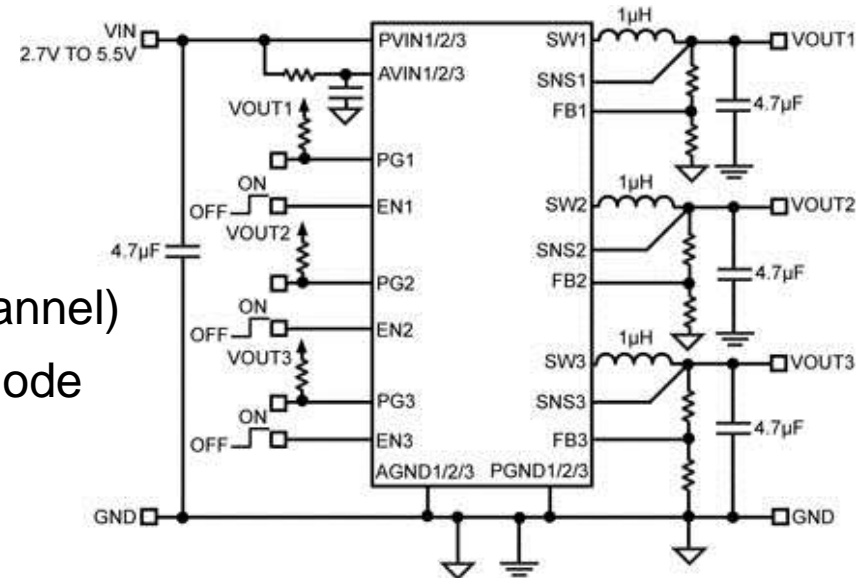
- ◆ 3.0V to 6.0V supply voltage
- ◆ 1.8MHz PWM mode
- ◆ 2A dual output
- ◆ Greater than 92% efficiency
- ◆ 100% maximum duty cycle
- ◆ Adjustable output voltage option down to 0.6V
- ◆ Ultra-fast transient response
- ◆ Ultra-small external components
- ◆ Stable with a 1 μ H inductor and a 4.7 μ F output capacitor
- ◆ Fully integrated 2A MOSFET switches
- ◆ Micro-power shutdown
- ◆ Thermal shutdown and current limit protection
- ◆ Available in a 3mm \times 3mm 16-pin MLF[®]
- ◆ -20°C to +125°C junction temperature range



MIC23450

3MHz, PWM, 2A Triple Buck Regulator with HyperLight Load® and Power Good

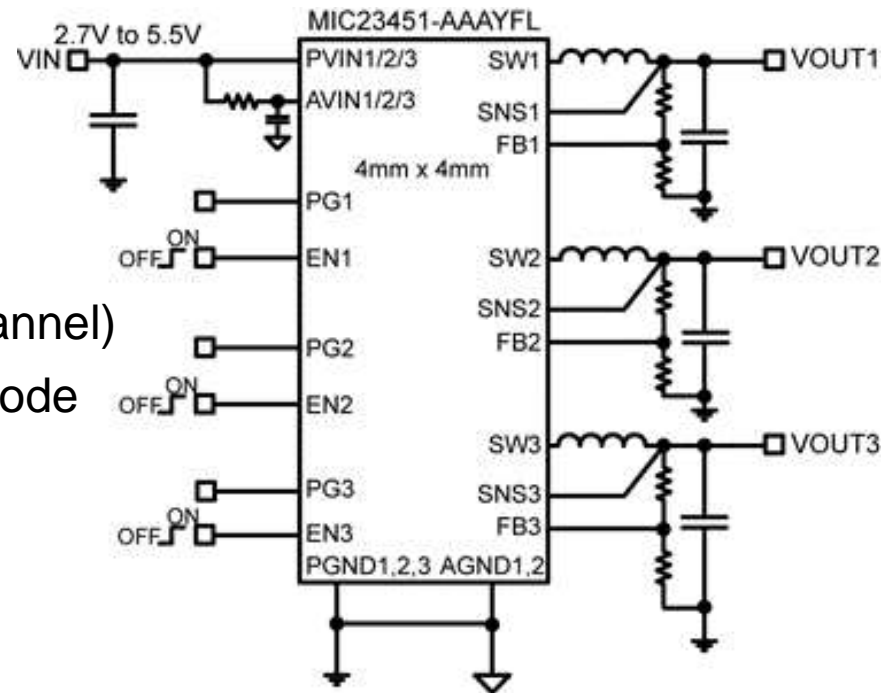
- ◆ Input voltage: 2.7V to 5.5V
- ◆ Three independent 2A outputs
- ◆ Up to 93% peak efficiency
- ◆ 81% typical efficiency at 1mA
- ◆ 23μA typical quiescent current (per channel)
- ◆ 3MHz PWM operation in continuous mode
- ◆ Low voltage output ripple
 - 30mVpp ripple in HyperLight Load® mode
 - 5mV output voltage ripple in full PWM mode
- ◆ Fully integrated MOSFET switches
- ◆ 0.01μA shutdown current (per channel)
- ◆ Thermal-shutdown and current-limit protection
- ◆ Output voltage as low as 1V
- ◆ 32-pin 5mm x 5mm QFN
- ◆ -40°C to +125°C junction temperature range



MIC23451

3MHz, 2A Triple Synchronous Buck Regulator with HyperLight Load® and Power Good

- ◆ Input voltage: 2.7V to 5.5V
- ◆ Three independent 2A outputs
- ◆ Up to 93% peak efficiency
- ◆ 81% typical efficiency at 1mA
- ◆ 24µA typical quiescent current (per channel)
- ◆ 3MHz PWM operation in continuous mode
- ◆ Ultra-fast transient response
- ◆ Low voltage output ripple
 - 30mVpp ripple in HyperLight Load® mode
 - 5mV output voltage ripple in full PWM mode
- ◆ Fully integrated MOSFET switches
- ◆ Thermal shutdown and current limit protection
- ◆ Output voltage as low as 1.0V
- ◆ 26-pin 4mm x 4mm QFN package
- ◆ Junction temperature range of -40°C to +125°C

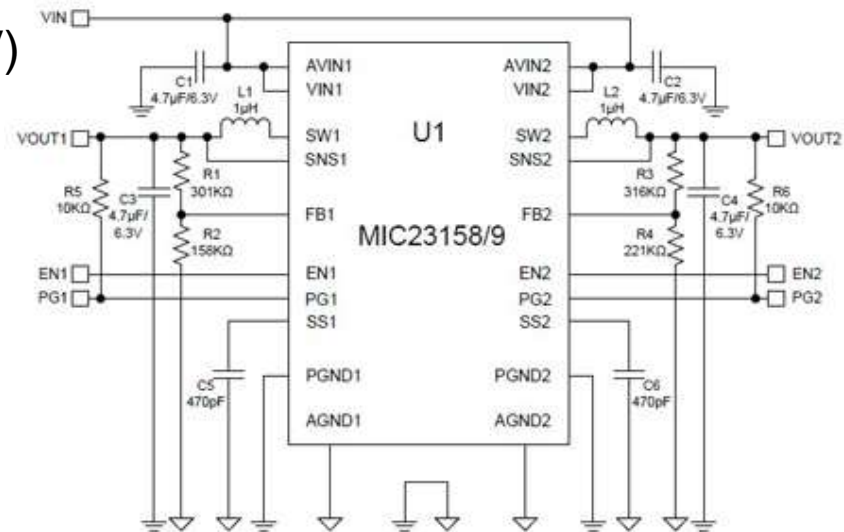




MIC23158/9

3MHz PWM Dual 2A Buck Regulator with HyperLight Load® and Power Good

- ◆ Input voltage: 2.7V to 5.5V
- ◆ Output voltage: Adjustable (down to 1.0V)
- ◆ Two independent 2A outputs
- ◆ Up to 94% peak efficiency
- ◆ 83% typical efficiency at 1mA
- ◆ Two independent Power Good Indicators
- ◆ Independent programmable Soft Start
- ◆ 45µA typical quiescent current
- ◆ 3MHz PWM operation in continuous conduction mode
- ◆ Fully integrated MOSFET switches
- ◆ 0.01µA shutdown current
- ◆ Thermal shutdown and current limit protection
- ◆ 20-pin 3mm x 4mm MLF® package
- ◆ Junction temperature range of -40°C to +125°C

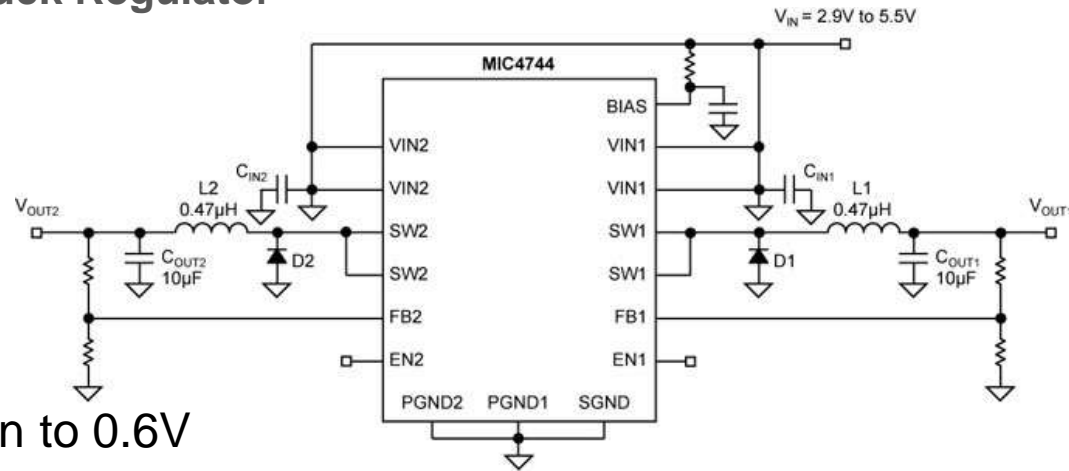




MIC4744

4MHz Dual 2A Integrated Switch Buck Regulator

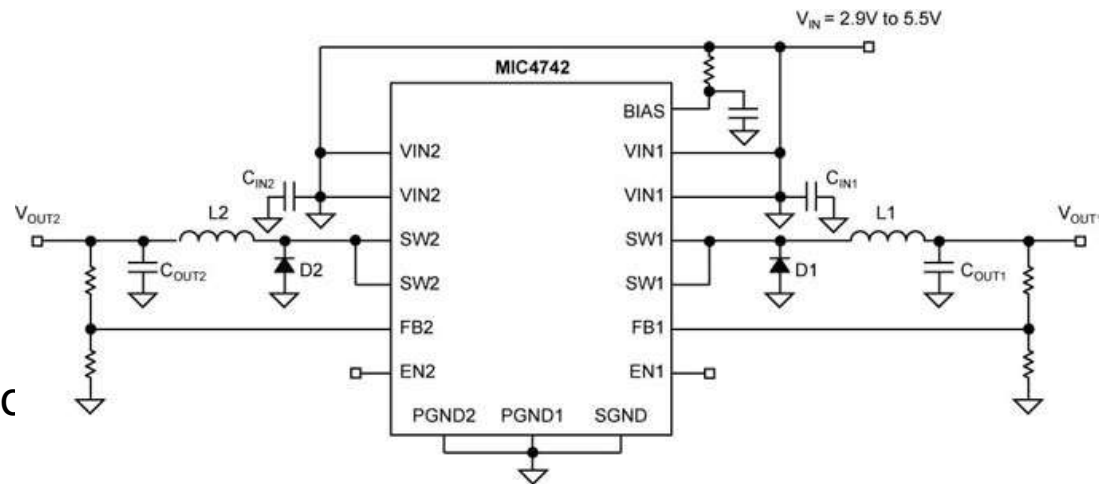
- ◆ 2.9V to 5.5V supply voltage
- ◆ 4MHz PWM mode
- ◆ 2A Dual output
- ◆ Greater than 90% efficiency
- ◆ 100% maximum duty cycle
- ◆ Output voltage adjustable down to 0.6V
- ◆ Ultra-fast transient response
- ◆ Ultra-small external components
Stable with a $0.47\mu\text{H}$ inductor and a $10\mu\text{F}$ output capacitor
- ◆ Fully integrated 2A MOSFET switches
- ◆ Micro-power shutdown
- ◆ Thermal shutdown and current limit protection
- ◆ Available in 3mm x 3mm 16-pin MLF[®] and 16-pin TSSOP packages
- ◆ -40°C to $+125^{\circ}\text{C}$ junction temperature range



MIC4742

2MHz Dual 2A Integrated Switch Buck Regulator

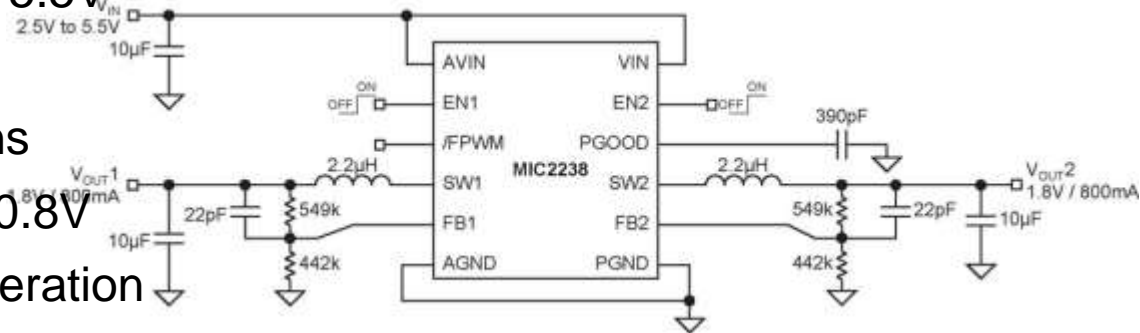
- ◆ 2.9V to 5.5V supply voltage
- ◆ 2MHz PWM mode
- ◆ 2A Dual output
- ◆ Greater than 92% efficiency
- ◆ 100% maximum duty cycle
- ◆ Adjustable output voltage optically
- ◆ Ultra-fast transient response
- ◆ Ultra-small external components
Stable with a 1 μ H inductor and a 4.7 μ F output capacitor
- ◆ Fully integrated 2A MOSFET switches
- ◆ Micro-power shutdown
- ◆ Thermal shutdown and current limit protection
- ◆ Available in a 3mm x 3mm 16-pin MLF[®] and 16-pin TSSOP
- ◆ -40°C to +125°C junction temperature range



MIC2238

2MHz Dual 2A Integrated Switch Buck Regulator

- ◆ Input voltage range: 2.5V to 5.5V
- ◆ 28μA quiescent current
- ◆ Fixed output voltage versions
- ◆ Adjustable version down to 0.8V
- ◆ Low noise 2.5MHz PWM operation
- ◆ Dual output voltages running out of phase
- ◆ 800mA output current capability for each channel
- ◆ Stable with 2.2μH inductor, 2.2μF ceramic cap
- ◆ Automatic switching into light load mode of operation
- ◆ /FPWM pin allows low noise all-PWM mode operation
- ◆ Power good output with internal 5μA current source allows sequencing with programmable delay time
- ◆ Current limit protection
- ◆ Pb-Free 3mm x 3mm MLF[®]-12L package

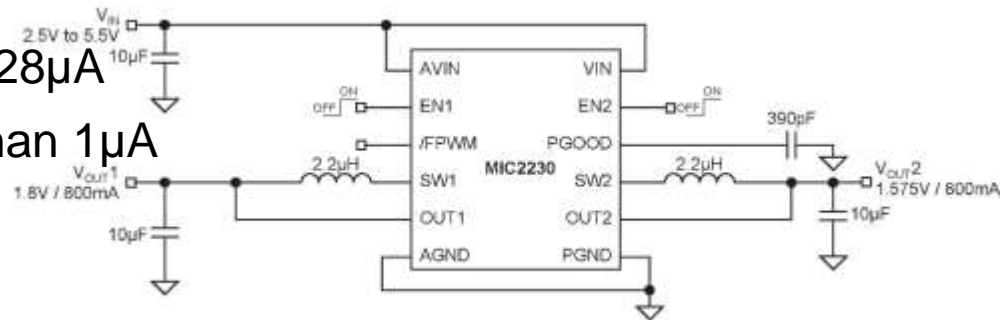




MIC2230

Dual Synchronous 800mA/800mA Step-Down DC/DC Regulator

- ◆ High Efficiency: Over 96%
- ◆ Ultra-low quiescent current: Only 28 μ A
- ◆ Ultra-low shutdown current less than 1 μ A
- ◆ Fast transient performance
- ◆ 2.5MHz PWM operation
- ◆ High output current capability per channel: 800mA
- ◆ No Schottky Diodes Required
- ◆ Stable with 2.2 μ H inductor, 2.2 μ F ceramic cap
- ◆ Adjustable output voltage down to 0.8V
- ◆ Built-in soft-start circuitry
- ◆ /FPWM pin allows low noise all-PWM mode operation
- ◆ Power good output with internal 5 μ A current source allows sequencing with programmable delay time
- ◆ Small Thermally Enhanced 3mm \times 3mm MLF[®] package

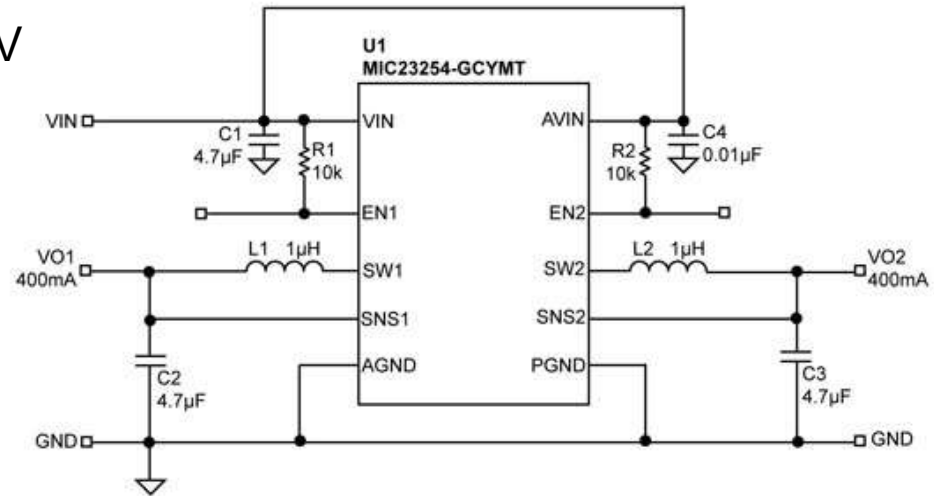




MIC23254

4MHz Dual 400mA Synchr Buck Regulator w/Low Input Voltage and HyperLight Load™

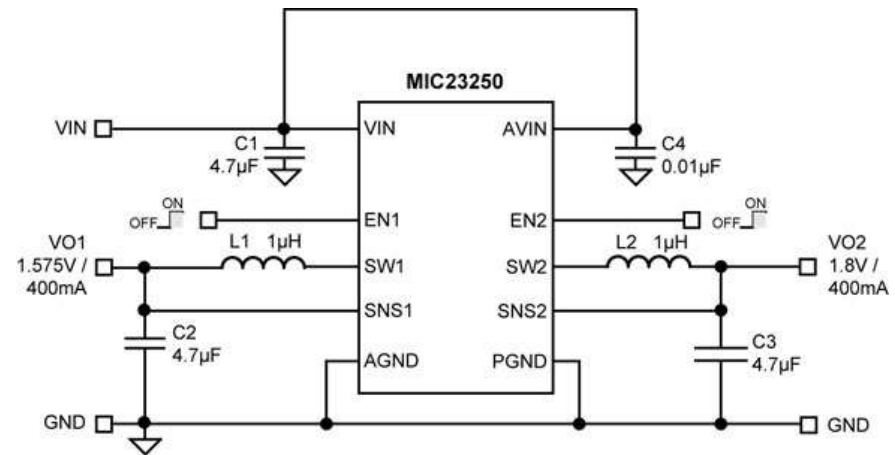
- ◆ Low input voltage range: 2.5V to 5.5V
- ◆ Dual output current 400mA/400mA
- ◆ 33 μ A dual quiescent current
- ◆ 1 μ H inductor with a 4.7 μ F capacitor
- ◆ 4MHz in PWM operation
- ◆ Ultra-fast transient response
- ◆ Low voltage output ripple
- ◆ Up to 94% peak efficiency and 85% efficiency at 1mA
- ◆ 20mVpp in HyperLight Load® mode
- ◆ 3mV output voltage ripple in full PWM mode
- ◆ 0.01 μ A shutdown current
- ◆ Fixed output: 10-pin 2mm x 2mm Thin MLF®
- ◆ -40°C to +125°C junction temperature range



MIC23250

4MHz Dual 400mA Synchronous Buck Regulator with HyperLight Load™

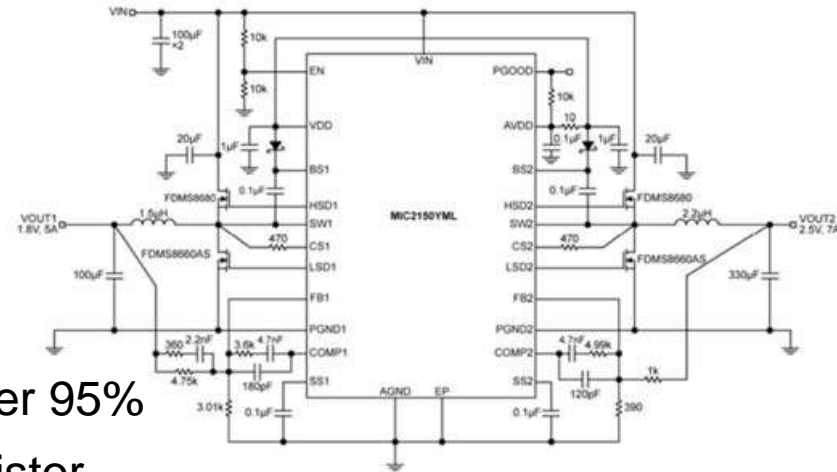
- ◆ Input voltage range: 2.7V to 5.5V
- ◆ Dual output current 400mA/400mA
- ◆ 33 μ A dual quiescent current
- ◆ 1 μ H inductor with a 4.7 μ F capacitor
- ◆ 4MHz in PWM operation
- ◆ Ultra fast transient response
- ◆ Low voltage output ripple
- ◆ 20mVpp in HyperLight Load® mode
- ◆ Up to 94% peak efficiency and 85% efficiency at 1mA
- ◆ 3mV output voltage ripple in full PWM mode
- ◆ 0.01 μ A shutdown current
- ◆ Fixed output: 10-pin 2mm x 2mm Thin MLF®
- ◆ Adjustable output: 12-pin 2.5mm x 2.5mm Thin MLF®
- ◆ -40°C to +125°C junction temperature range



MIC2150/1

2-Phase Dual Output PWM Synchronous Buck Control IC

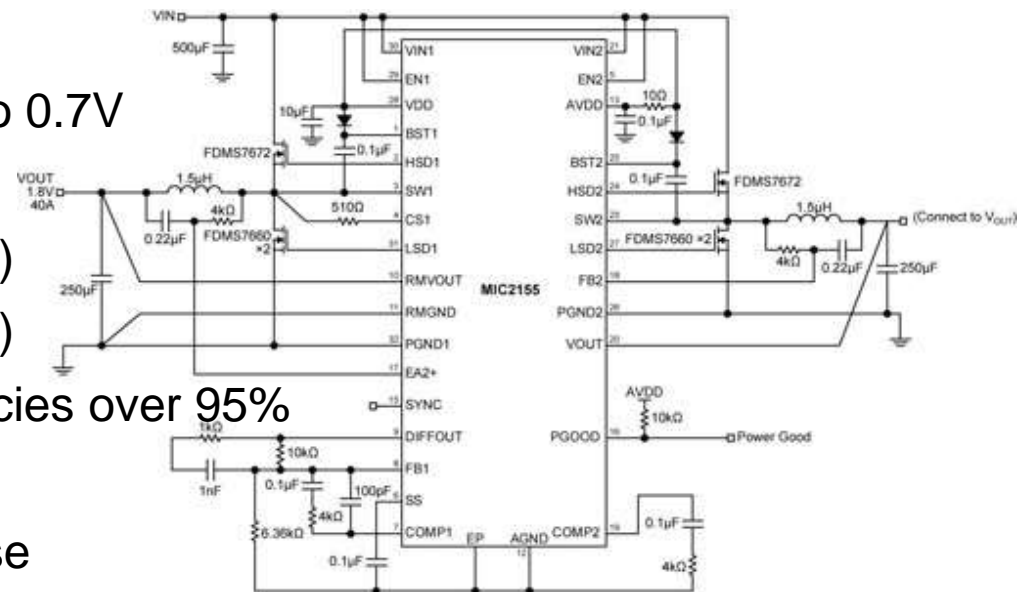
- ◆ Dual Synchronous Buck Control IC with outputs switching 180° out-of-phase
- ◆ 4.5V to 14.5V input voltage range
- ◆ Adjustable output voltages down to 0.7V
- ◆ 1% output voltage accuracy
- ◆ MIC2150: 500kHz PWM operation
- ◆ MIC2151: 300kHz PWM operation
- ◆ Adaptive gate drive allows efficiencies over 95%
- ◆ Adjustable current limit with no sense resistor
Senses low-side MOSFET current
- ◆ Internal drivers allow 20A per phase
- ◆ Power Good output allow simple sequencing
- ◆ Output over-voltage protection
- ◆ Tiny 4mm x 4mm 24-Pin MLF[®] package
- ◆ Junction temperature range of -40°C to +125°C



MIC2155/6

2-Phase, Single Output, PWM Synchronous Buck Control IC

- ◆ Synchronous Buck Control ICs with outputs switching 180° out-of-phase
- ◆ Remote sensing with internal differential amplifier
- ◆ 4.5V to 14.5V input voltage range
- ◆ Adjustable output voltages down to 0.7V
- ◆ Starts up into a pre-biased output
- ◆ 500kHz PWM operation (MIC2155)
- ◆ 300kHz PWM operation (MIC2156)
- ◆ Adaptive gate drive allows efficiencies over 95%
- ◆ Senses low-side MOSFET current
- ◆ Internal drivers allow 25A per phase
- ◆ Dual enables with micro-power shutdown and UVLO
- ◆ Single output high current capability with master-slave current sharing
- ◆ Small footprint 32-pin 5mm x 5mm MLF®
- ◆ Junction temperature range of -40°C to +125°C

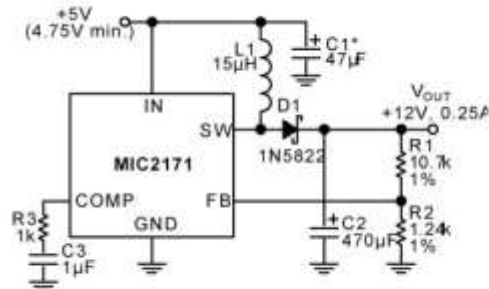




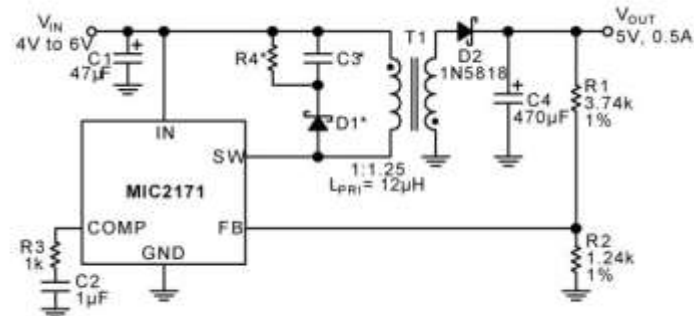
MIC2171

100kHz 2.5A Switching Regulator

- ◆ 2.5A, 65V internal switch rating
- ◆ 3V to 40V input voltage range
- ◆ Current-mode operation, 2.5A peak
- ◆ Internal cycle-by-cycle current limit
- ◆ Twice the frequency of the LM2577
- ◆ Low external parts count
- ◆ Operates in most switching topologies
- ◆ 7mA quiescent current (operating)
- ◆ Fits LT1171/LM2577 TO-220 and TO-263 sockets



* Locate near MIC2171 when supply leads > 2"



* Optional voltage clipper (may be req'd if T1 leakage inductance too high)

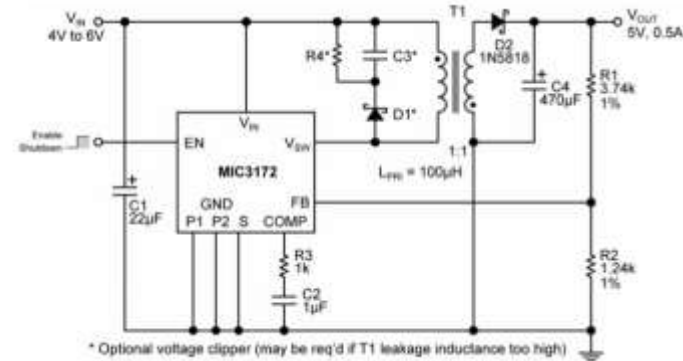
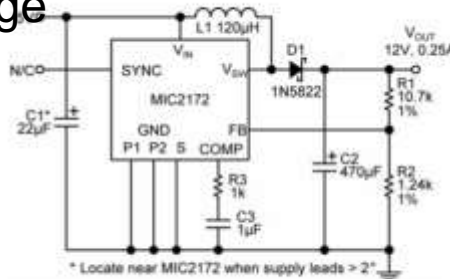




MIC2172

100kHz 2.5A Switching Regulator

- ◆ 1.25A, 65V internal switch rating
- ◆ 3V to 40V input voltage range
- ◆ Current-mode operation
- ◆ Thermal shutdown
- ◆ Low external parts count
- ◆ Internal cycle-by-cycle current limit
- ◆ Operates in most switching topologies
- ◆ 7mA quiescent current (operating)
- ◆ <1μA quiescent current, shutdown mode (MIC3172)
- ◆ TTL shutdown compatibility (MIC3172)
- ◆ External frequency synchronization (MIC2172)
- ◆ External frequency trim (MIC2172)
- ◆ Fits most LT1172 sockets (see applications info)

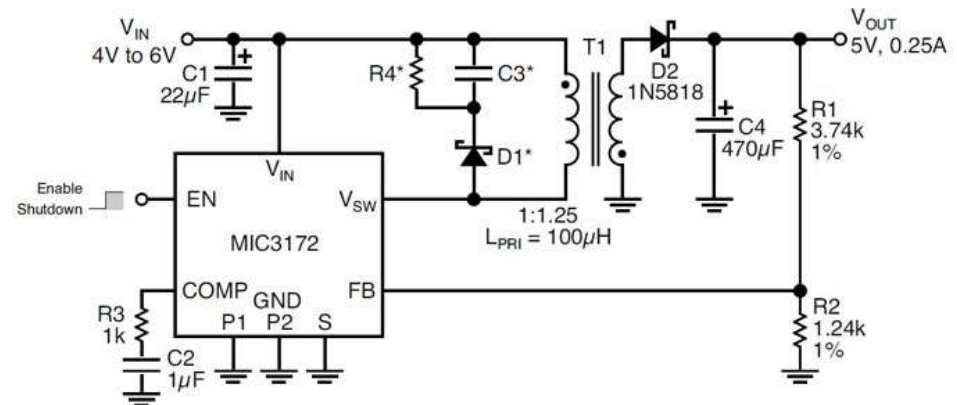




MIC3172

100kHz 1.25A Switching Regulators

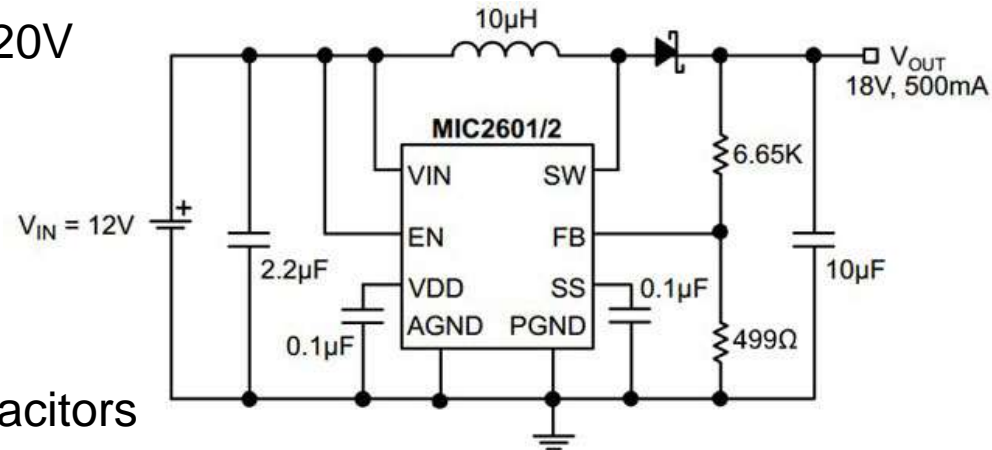
- ◆ 1.25A, 65V internal switch rating
- ◆ 3V to 40V input voltage range
- ◆ Current-mode operation
- ◆ Internal cycle-by-cycle current limit
- ◆ Thermal shutdown
- ◆ Low external parts count
- ◆ Operates in most switching topologies
- ◆ 7mA quiescent current (operating)
- ◆ <1μA quiescent current, shutdown mode (MIC3172)
- ◆ TTL shutdown compatibility (MIC3172)
- ◆ External frequency synchronization (MIC2172)
- ◆ External frequency trim (MIC2172)
- ◆ Fits most LT1172 sockets (see applications info)



MIC2601/2

1.2A, 1.2MHz/2MHz Wide Input Range Integrated Switch Boost Regulator

- ◆ Wide input voltage range: 4.5V to 20V
- ◆ Output voltage adjustable to 40V
- ◆ 1.2A switch current
- ◆ MIC2601 operates at 1.2MHz
- ◆ MIC2602 operates at 2MHz
- ◆ Stable with small size ceramic capacitors
- ◆ High efficiency
- ◆ Programmable soft start
- ◆ <10 μ A shutdown current
- ◆ UVLO
- ◆ Output over-voltage protection
- ◆ Over temperature shutdown
- ◆ 8-pin 2mm x 2mm MLF[®] package
- ◆ -40°C to +125°C junction temperature range

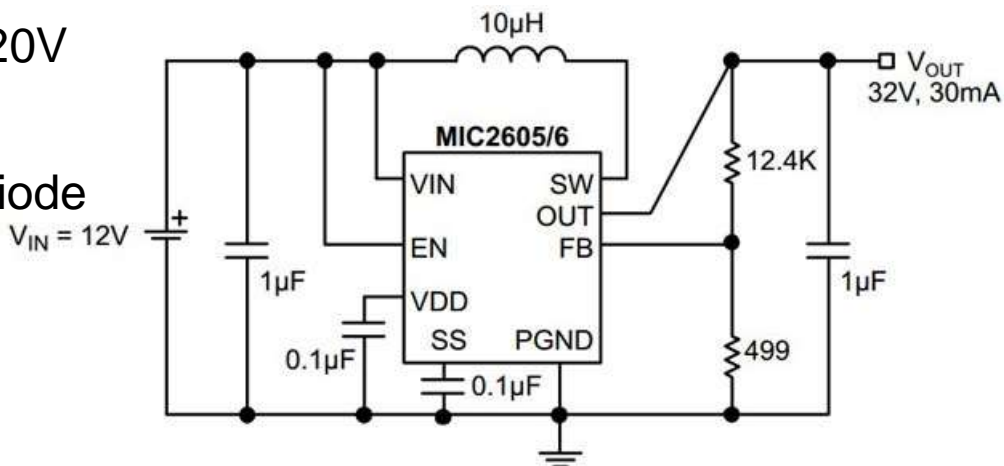


MIC2605/6



0.5A, 1.2MHz/2MHz Wide Input Range Boost Regulator with Integrated Switch and Schottky Diode

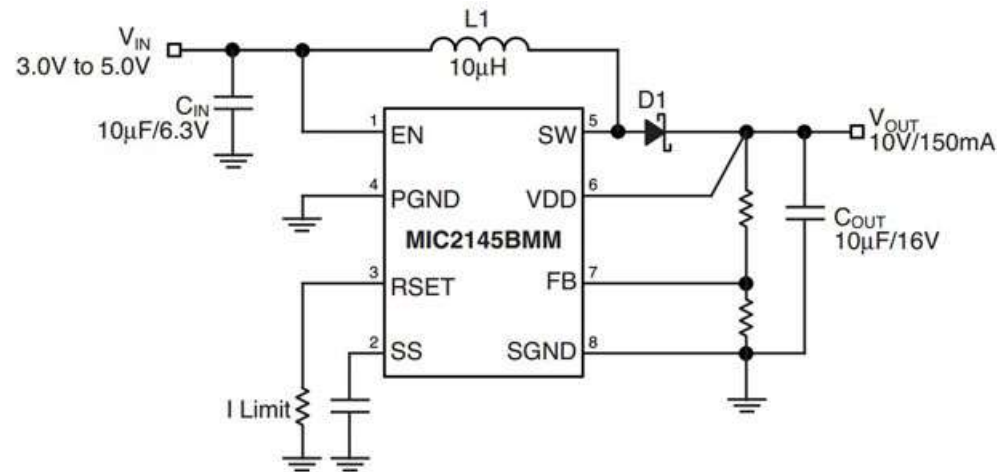
- ◆ Wide input voltage range: 4.5V to 20V
- ◆ Output voltage adjustable to 40V
- ◆ 0.5A switch current and Schottky diode
- ◆ MIC2605 operates at 1.2MHz
- ◆ MIC2606 operates at 2MHz
- ◆ Programmable soft start
- ◆ Stable with small size ceramic capacitors
- ◆ High efficiency
- ◆ Low input and output ripple
- ◆ $<10\mu\text{A}$ shutdown current
- ◆ UVLO
- ◆ Output over-voltage and over-temperature protection
- ◆ 8-pin 2mm x 2mm MLF[®] package
- ◆ -40°C to $+125^{\circ}\text{C}$ junction temperature range



MIC2145

High Efficiency 2.5W Boost Converter

- ◆ 2.4V to 16V input voltage
- ◆ Output adjustable to 16V
- ◆ Programmable peak current limit
- ◆ Soft start
- ◆ Up to 450kHz switching frequency
- ◆ 0.5μA shutdown current
- ◆ 200μA quiescent current
- ◆ Capable of 5V/500mA output with 3.3V input
- ◆ Achieves over 85% efficiency
- ◆ Implements low power boost, SEPIC, and flyback topologies
- ◆ MSOP-8 and 3mm x 3mm MLF®-10L

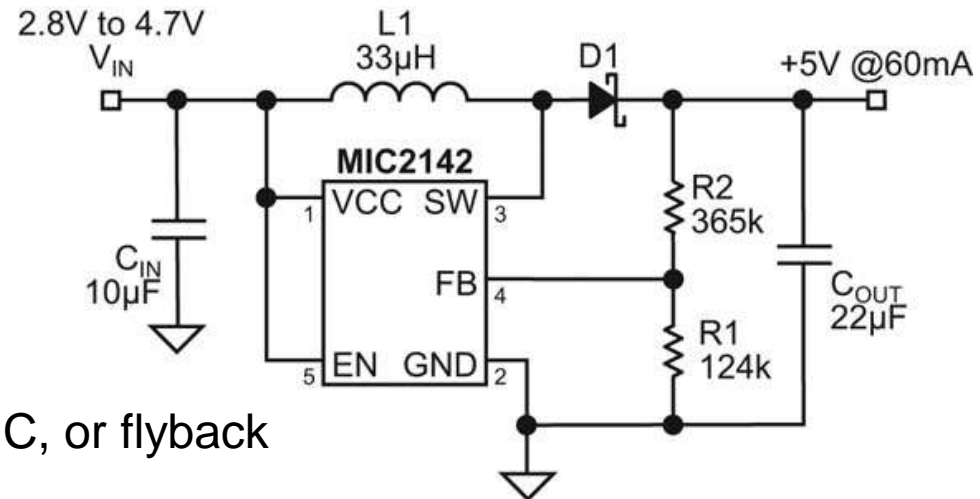




MIC2142

Micropower Boost Converter

- ◆ 2.2V to 16V input voltage
- ◆ Up to 22V output voltage
- ◆ 330kHz switching frequency
- ◆ 0.1 μ A shutdown current
- ◆ 85 μ A quiescent current
- ◆ Implements low-power boost, SEPIC, or flyback
- ◆ SOT23-5 package

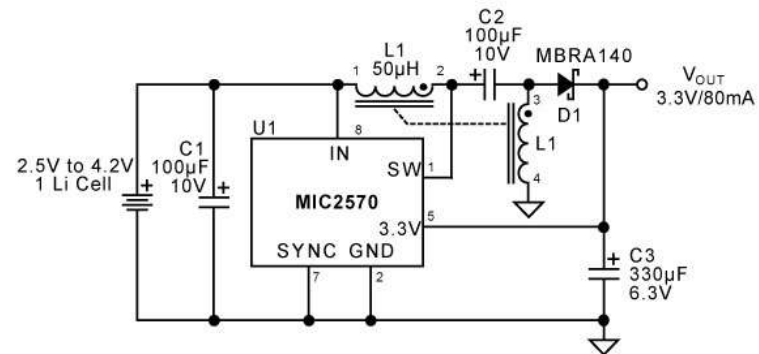
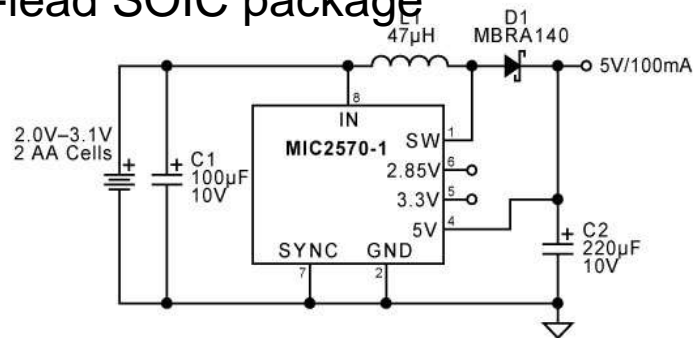




MIC2570

Micropower Boost Converter

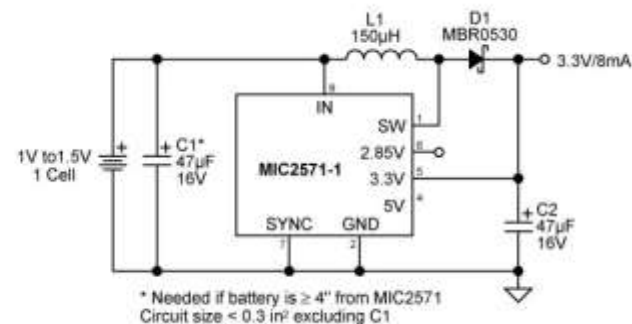
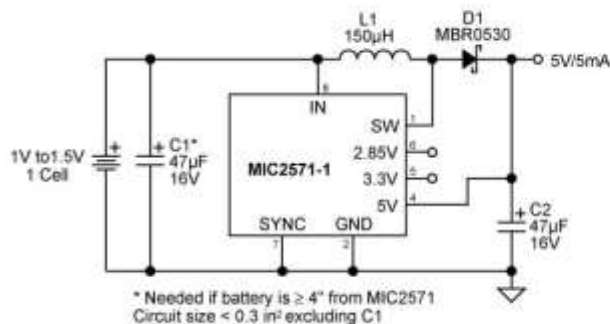
- ◆ Operates from a two-cell supply
 - 1.3V to 15V operation
- ◆ 130 μ A typical quiescent current
- ◆ Complete regulator fits 0.6 in² area
- ◆ 2.85V/3.3V/5V selectable output voltage (MIC2570-1)
- ◆ Adjustable output up to 36V (MIC2570-2)
- ◆ 1A current limited pass element
- ◆ Frequency synchronization input
- ◆ 8-lead SOIC package



MIC2571

Single-Cell Switching Regulator

- ◆ Operates from a single-cell supply
 - 0.9V to 15V operation
- ◆ 120 μ A typical quiescent current
- ◆ Complete regulator fits 0.3 in² area
- ◆ 2.85V/3.3V/5V selectable output voltage (MIC2571-1)
- ◆ Adjustable output up to 36V (MIC2571-2)
- ◆ 1A current limited pass element
- ◆ Frequency synchronization input
- ◆ 8-lead MSOP package

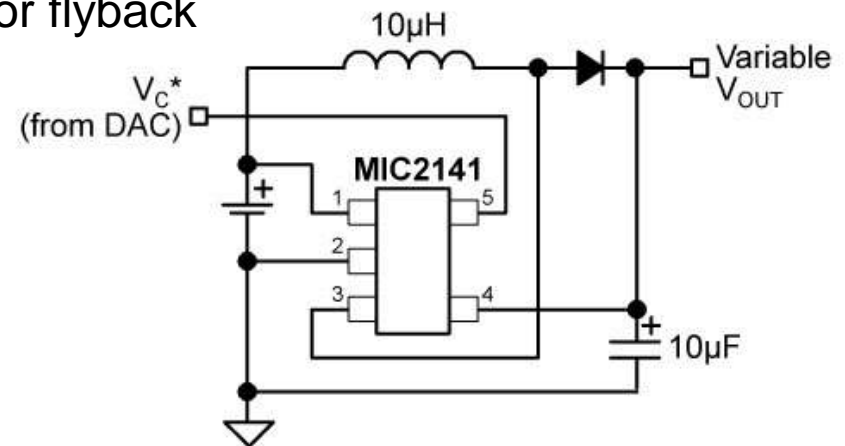




MIC2141

Micropower Boost Converter

- ◆ Implements low-power boost, SEPIC, or flyback
- ◆ 2.2V to 14V input voltage
- ◆ 330kHz switching frequency
- ◆ $<2\mu\text{A}$ shutdown current
- ◆ $70\mu\text{A}$ quiescent current
- ◆ 1.24V bandgap reference
- ◆ typical output current 1mA to 10mA
- ◆ SOT-23-5 package

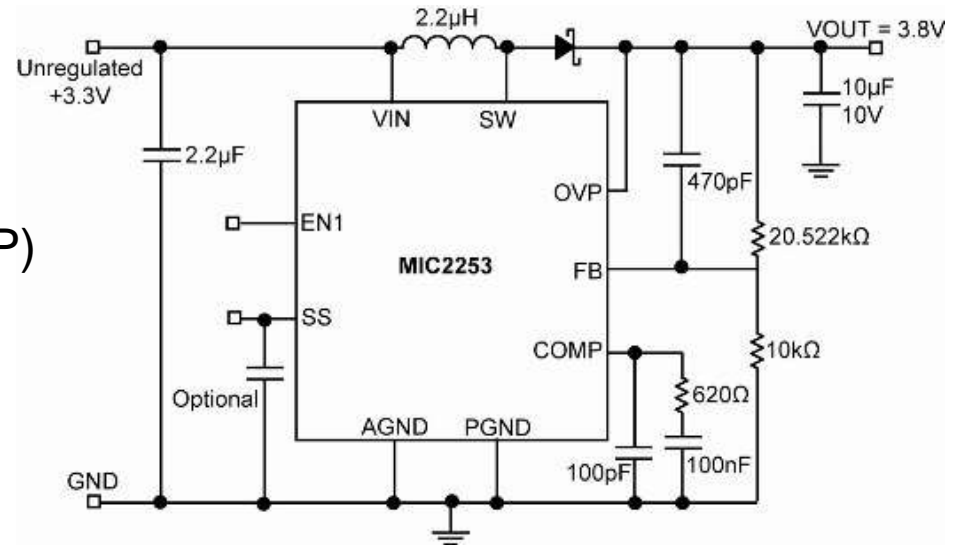




MIC2253

3.5A 1MHz High Efficiency Boost Regulator with OVP and Softstart

- ◆ 3.5A minimum switch current
- ◆ 1.245V $\pm 3\%$ feedback voltage
- ◆ 2.5V to 10V input voltage
- ◆ Output over-voltage protection (OVP)
- ◆ Externally programmable soft-start
- ◆ Output voltage up to 30V (max)
- ◆ Fixed 1MHz operation
- ◆ $<1\%$ line regulation
- ◆ 0.1 μ A shutdown current
- ◆ Over temperature protection
- ◆ Under-voltage lockout (UVLO)
- ◆ 12-pin 3mm x 3mm leadless MLF[®] package
- ◆ -40°C to +125°C junction temperature range

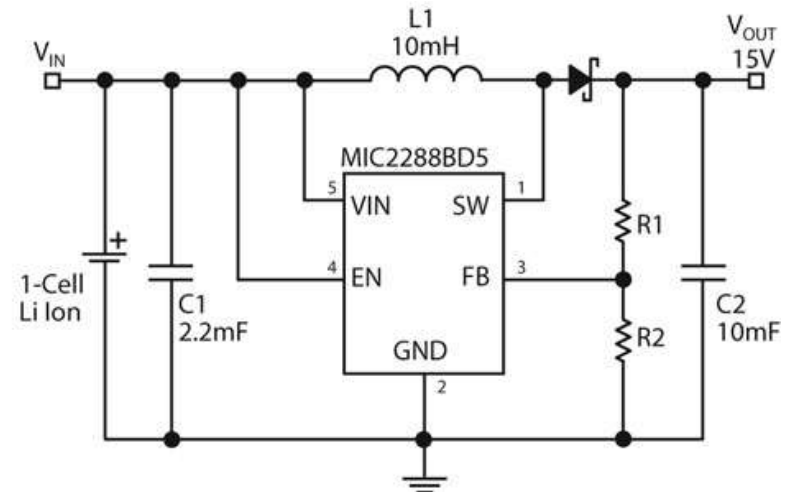




MIC2288

1A 1.2MHz PWM Boost Converter in Thin SOT-23 and 2mm x 2mm MLF®

- ◆ 2.5V to 10V input voltage range
- ◆ Output voltage adjustable to 34V
- ◆ Over 1A switch current
- ◆ 1.2MHz PWM operation
- ◆ Stable with ceramic capacitors
- ◆ <1% line and load regulation
- ◆ Low input and output ripple
- ◆ <1μA shutdown current
- ◆ Output overvoltage protection (MIC2288BML)
- ◆ Over temperature shutdown
- ◆ Thin SOT-23-5 package option
- ◆ 2mm x 2mm leadless MLF®-8L package option
- ◆ -40°C to +125°C junction temperature range

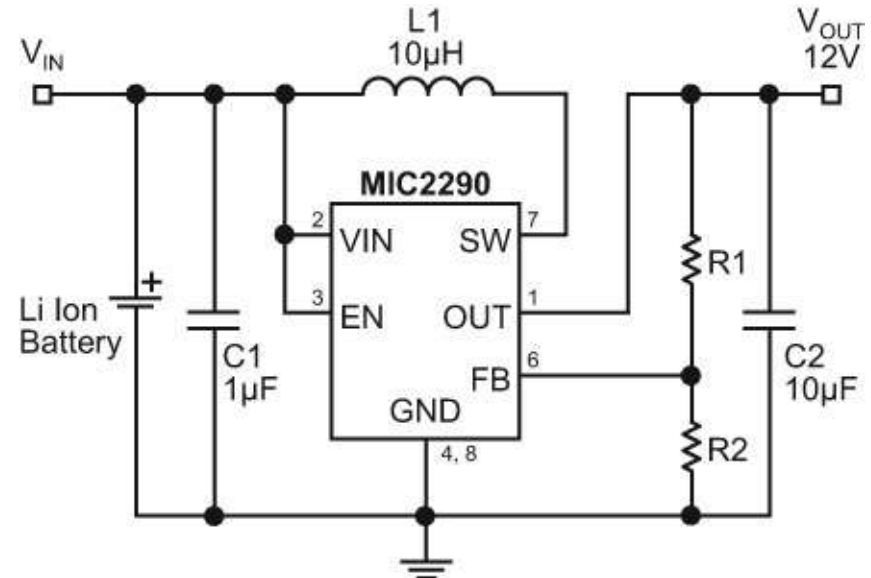




MIC2290

2mm x 2mm PWM Boost Regulator with Internal Schottky Diode

- ◆ Internal Schottky diode
- ◆ 2.5V to 10V input voltage
- ◆ Output voltage adjustable to 34V
- ◆ Over 500mA switch current
- ◆ 1.2MHz PWM operation
- ◆ Stable with ceramic capacitors
- ◆ <1% line and load regulation
- ◆ Low input and output ripple
- ◆ <1 μ A shutdown current
- ◆ UVLO
- ◆ Output overvoltage protection
- ◆ Over temperature protection
- ◆ 2mm x 2mm 8-pin MLF[®] package
- ◆ -40°C to +125°C junction temperature range

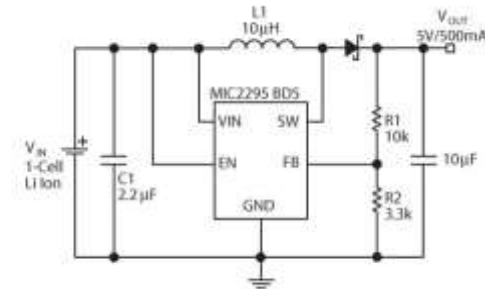
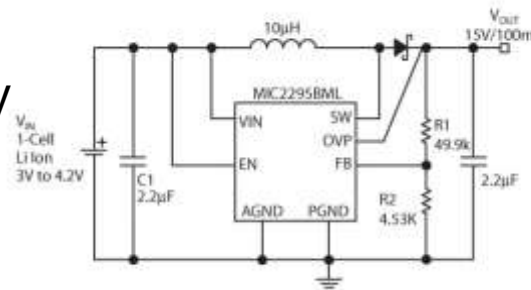




MIC2295

High Power Density 1.2A Boost Regulator

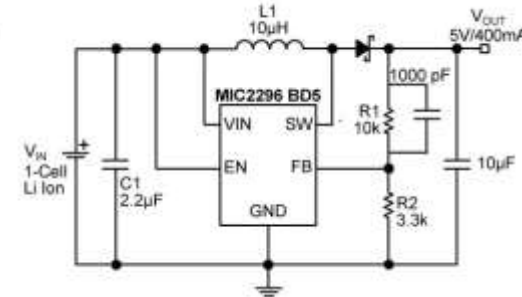
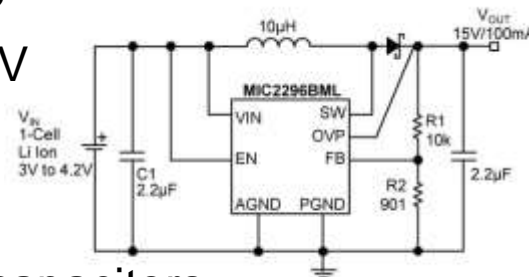
- ◆ 2.5V to 10V input voltage range
- ◆ Output voltage adjustable to 34V
- ◆ 1.2A switch current
- ◆ 1.2MHz PWM operation
- ◆ Stable with small size ceramic capacitors
- ◆ High efficiency
- ◆ Low input and output ripple
- ◆ <1μA shutdown current
- ◆ UVLO
- ◆ Output over-voltage protection (MIC2295BML)
- ◆ Over temperature shutdown
- ◆ Thin SOT23-5 package option
- ◆ 2mm x 2mm leadless 8-lead MLF[®] package option
- ◆ -40°C to +125°C junction temperature range



MIC2296

High Power Density 1.2A Boost Regulator

- ◆ 2.5V to 10V input voltage range
- ◆ Output voltage adjustable to 34V
- ◆ 1.2A switch current
- ◆ 600kHz PWM operation
- ◆ Stable with small size ceramic capacitors
- ◆ High efficiency
- ◆ Low input and output ripple
- ◆ <1 μ A shutdown current
- ◆ UVLO
- ◆ Output over-voltage protection (MIC2296BML)
- ◆ Over temperature shutdown
- ◆ 2mm x 2mm leadless 8-lead MLF[®] package option
- ◆ -40 °C to +125 °C junction temperature range

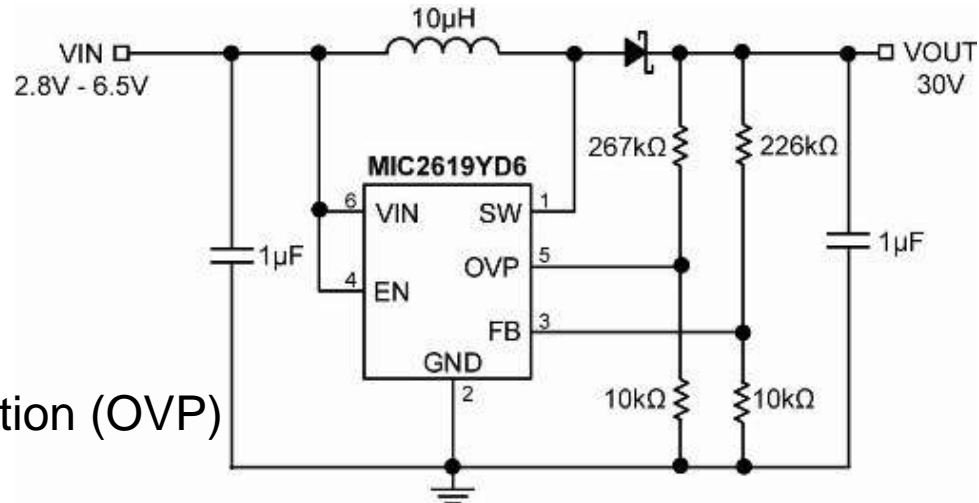




MIC2619

1.2MHz PWM Boost Converter with OVP

- ◆ 2.8V to 6.5V input voltage
- ◆ 350mA switch current
- ◆ Output voltage up to 35V
- ◆ 1.2MHz PWM operation
- ◆ 1.265V feedback voltage
- ◆ Programmable over-voltage protection (OVP)
- ◆ <1% line regulation
- ◆ <1μA shutdown current
- ◆ Over-temperature protection
- ◆ Under-voltage lock out (UVLO)
- ◆ Low profile Thin SOT-23-6 package
- ◆ -40°C to +125°C junction temperature range

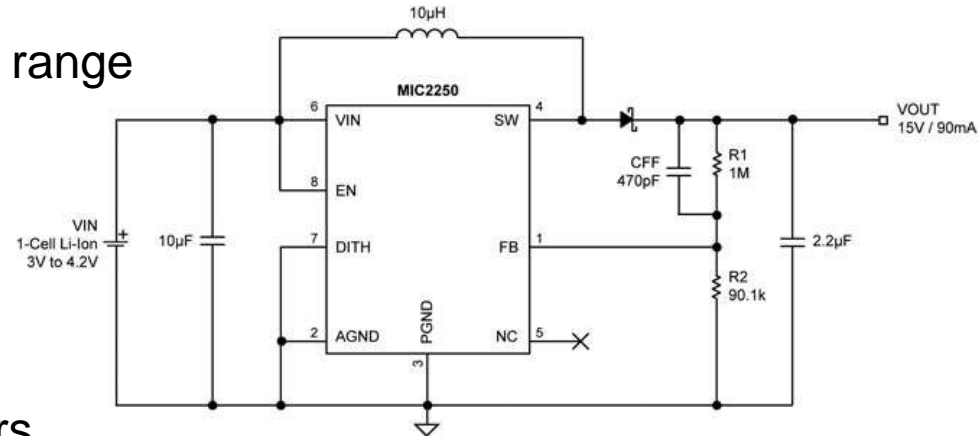




MIC2250

High Efficiency Low EMI Boost Regulator

- ◆ Over 80% efficient for a 300:1 load range
- ◆ 2.5V to 5.5V input voltage range
- ◆ Output voltage adjustable to 32V
- ◆ 52 μ A (typ) quiescent current
- ◆ EMI reduction circuitry
- ◆ Stable with small ceramic capacitors
- ◆ <1 μ A shutdown current
- ◆ Constant peak current control reduces output ripple
- ◆ UVLO and thermal shutdown
- ◆ 8-pin 2mm x 2mm leadless MLF[®] package (MIC2250)
- ◆ 5-pin Thin SOT-23 package (MIC2250-1 and -2)
- ◆ -40°C to +125°C junction temperature range

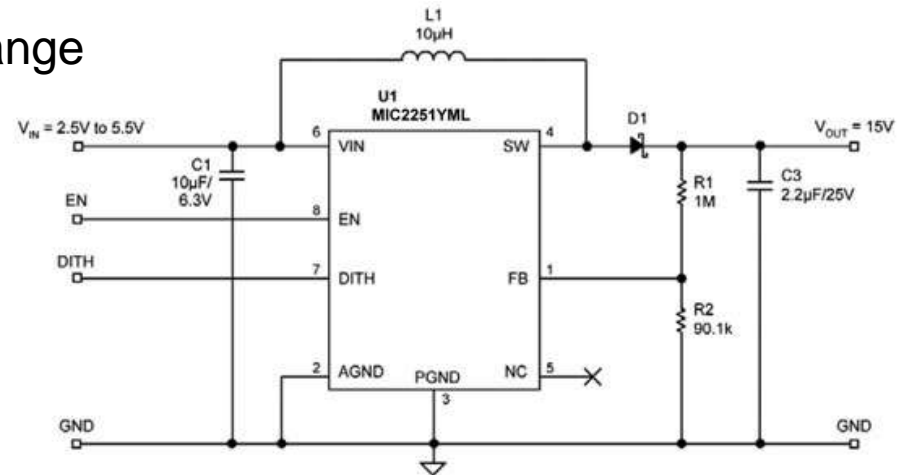




MIC2251

High Efficiency Low EMI Boost Regulator

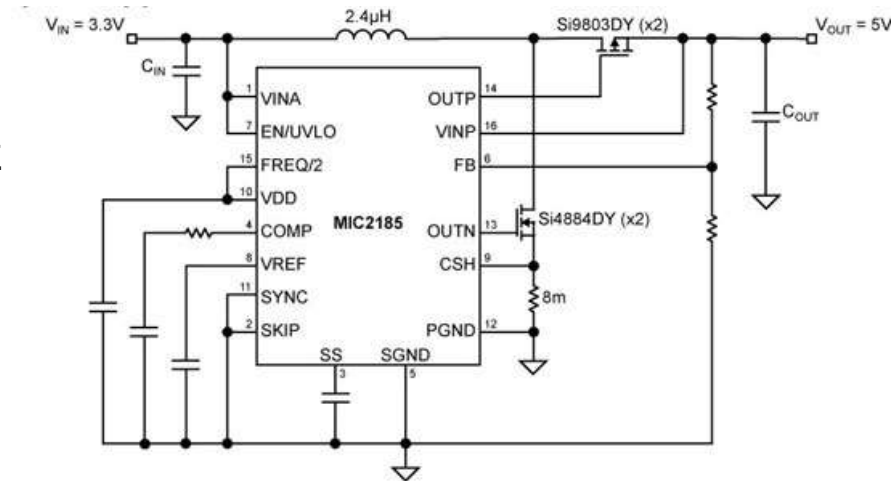
- ◆ Over 80% efficient for a 300:1 load range
- ◆ 2.5V to 5.5V input voltage range
- ◆ Output voltage adjustable to 37V
- ◆ 52 μ A (typ) quiescent current
- ◆ EMI reduction circuitry
- ◆ Stable with small ceramic capacitors
- ◆ <1 μ A shutdown current
- ◆ UVLO and thermal shutdown
- ◆ Constant peak current control reduces output ripple
- ◆ 8-pin 2mm x 2mm leadless MLF[®] package (MIC2251)
- ◆ 5-pin Thin SOT-23 package (MIC2251-1 and -2)
- ◆ -40°C to +125°C junction temperature range



MIC2185

Low Voltage Synchronous Boost PWM Control IC

- ◆ Input voltage range: 2.9V to 14V
- ◆ 95% efficiency
- ◆ Oscillator frequency of 200kHz/400kHz
- ◆ Frequency sync to 600kHz
- ◆ 0.5μA shutdown current
- ◆ Two 5Ω output drivers
- ◆ Front edge blanking
- ◆ PWM current mode control
- ◆ Cycle-by-cycle current limiting
- ◆ Frequency foldback protection
- ◆ Adjustable under-voltage lockout
- ◆ Precision 1.245V reference output
- ◆ 16-pin SOIC narrow body package

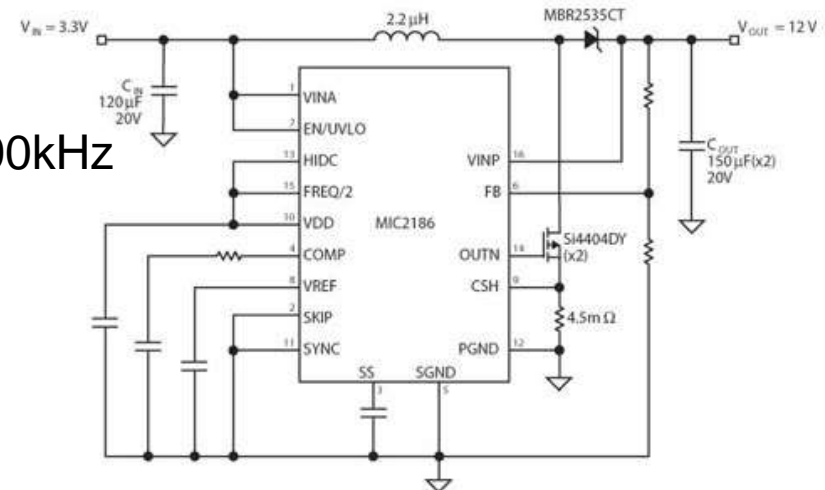




MIC2186

Low Voltage Boost PWM Control IC

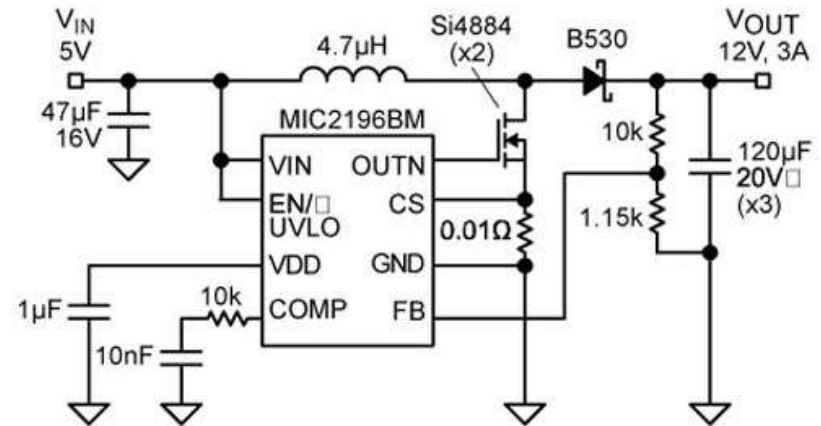
- ◆ Input voltage range: 2.9V to 14V
- ◆ 1.6Ω output driver
- ◆ Oscillator frequency of 100kHz/200kHz/400kHz
- ◆ Frequency sync to 600kHz
- ◆ Front edge blanking
- ◆ PWM Current Mode Control
- ◆ Selectable light load SKIP mode
- ◆ 600μA quiescent current (SKIP-Mode)
- ◆ 0.5μA shutdown current
- ◆ Cycle-by-cycle current limiting
- ◆ Frequency foldback protection
- ◆ Precision 1.245V reference output
- ◆ 16-pin SOIC and QSOP package options
- ◆ Selectable 50% maximum duty cycle for flyback applications



MIC2196

Low Voltage Boost PWM Control IC in SO-8

- ◆ 2.9V to 14V input voltage range
- ◆ >90% efficiency
- ◆ 2Ω output driver
- ◆ 400kHz oscillator frequency
- ◆ PWM current mode control
- ◆ 0.5μA micro-power shutdown
- ◆ Programmable UVLO
- ◆ Front edge blanking
- ◆ Cycle-by-cycle current limiting
- ◆ Frequency foldback short-circuit protection
- ◆ 8-pin SOIC package

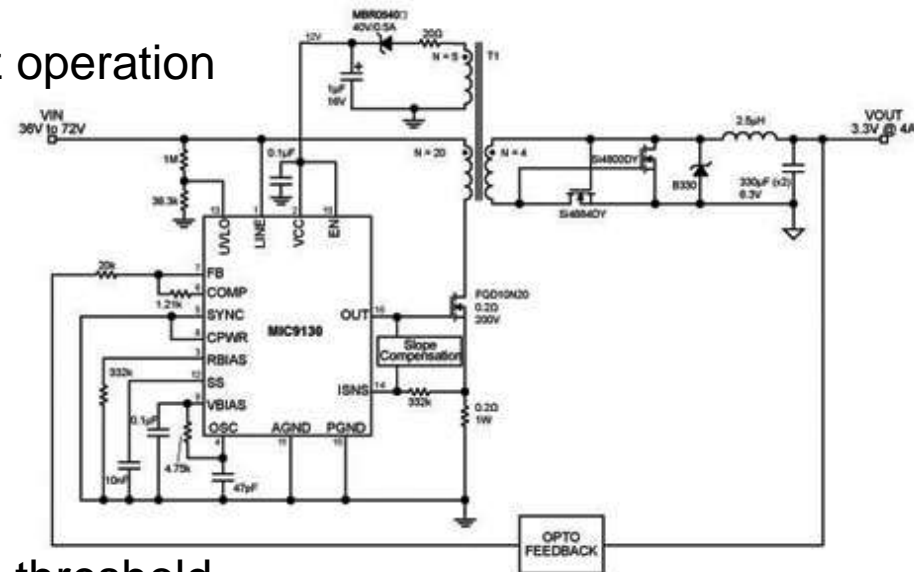




MIC9130

High-Voltage, High-Speed Telecom DC-to-DC Controller

- ◆ Input voltages up to 180V
- ◆ Internal oscillator capable of >2.5MHz operation
- ◆ Synchronization capability to 4MHz
- ◆ Current sense delay of 34ns
- ◆ Minimum pulse width <25ns
- ◆ 90% efficiency
- ◆ 1.3mA quiescent current
- ◆ 1μA shutdown current
- ◆ Resistor programmable current sense threshold
- ◆ Selectable sort-start retry
- ◆ 4Ω sink, 12Ω source output driver
- ◆ Programmable under-voltage lockout
- ◆ Constant-frequency PWM current-mode control
- ◆ 16-pin SOIC and 16-pin QSOP

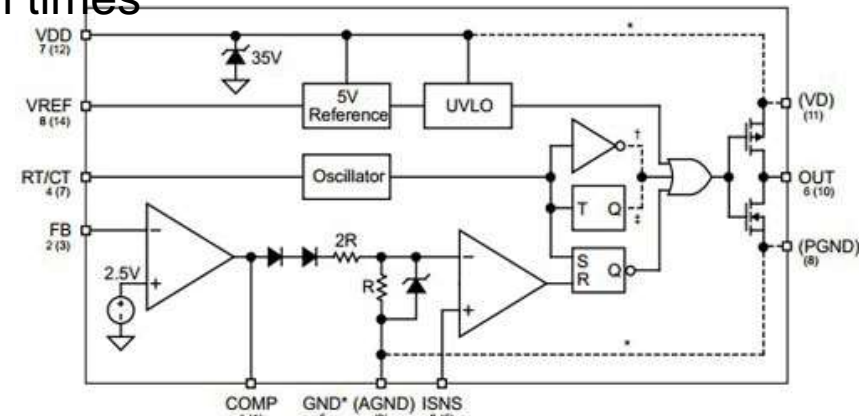




MIC38C42/43/44/45

BiCMOS Current-Mode PWM Controller

- ◆ Fast 40ns output rise and 30ns output fall times
- ◆ Ultra-low start-up current (50μA typical)
- ◆ Low operating current (4mA typical)
- ◆ CMOS outputs with rail-to-rail swing
- ◆ ≥500kHz current-mode operation
- ◆ Trimmed 5V bandgap reference
- ◆ Trimmed oscillator discharge current
- ◆ -40°C to +85°C temperature range meets UC284x specifications
- ◆ High-performance, low-power BiCMOS Process
- ◆ UVLO with hysteresis
- ◆ Pin-for-pin compatible with UC3842/3843/3844/3845(A)
- ◆ Low cross-conduction currents



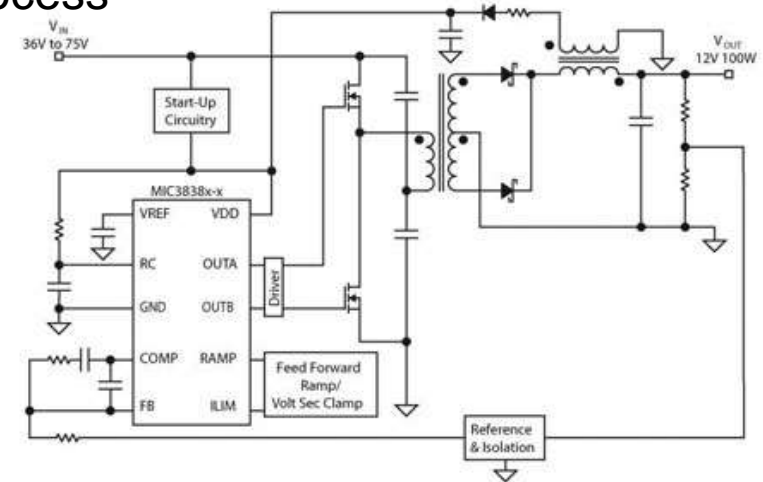
() pins are on MIC38C4x-1 (14-lead) versions only
 * MIC38C4x, (8-lead) versions only
 † MIC38C42, MIC38C43 (96% max. duty cycle) versions only
 ‡ MIC38C44, MIC38C45 (50% max. duty cycle) versions only



MIC38C42A/43A/44A/45A

BiCMOS Current-Mode PWM Controllers

- ◆ Fast 40ns output rise and 30ns output fall times
- ◆ -40°C to +85°C temperature range meets UC284x specifications
- ◆ High-performance, low-power BiCMOS Process
- ◆ Ultra-low start-up current (100μA typical)
- ◆ Low operating current (4mA typical)
- ◆ CMOS outputs with rail-to-rail swing
- ◆ CMOS outputs with rail-to-rail swing
- ◆ Current-mode operation up to 500kHz
- ◆ Trimmed 5V bandgap reference
- ◆ Pin-for-pin compatible with UC3842/3843/3844/3845(A)
- ◆ Trimmed oscillator discharge current
- ◆ UVLO with hysteresis
- ◆ Low cross-conduction currents

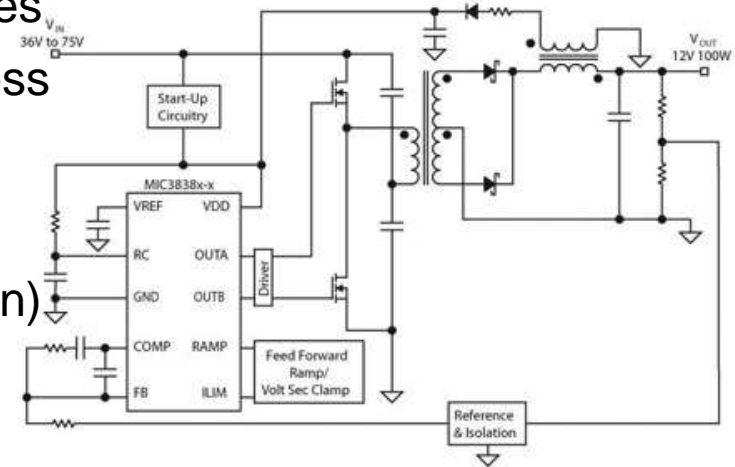




MIC38HC42/43/44/45

BiCMOS 1A Current-Mode PWM Controllers

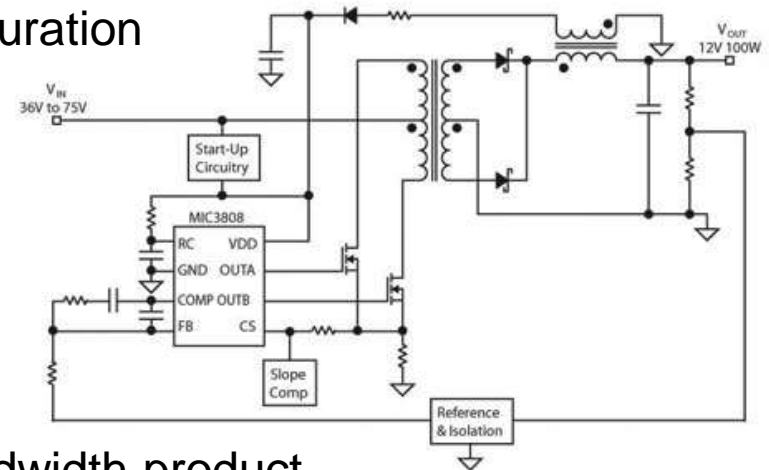
- ◆ Fast 20ns output rise and 15ns output fall times
- ◆ High-performance, low-power BiCMOS Process
- ◆ Ultra-low start-up current (50μA typical)
- ◆ Low operating current (4mA typical)
- ◆ High output drive (1A peak current, HC version)
- ◆ CMOS outputs with rail-to-rail swing
- ◆ Current-mode operation up to 500kHz
- ◆ Trimmed 5V bandgap reference
- ◆ -40°C to +85°C temperature range exceeds UC284x specifications
- ◆ Pin-for-pin compatible with UC3842/3843/3844/3845(A)
- ◆ Trimmed oscillator discharge current
- ◆ UVLO with hysteresis
- ◆ Low cross-conduction currents



MIC3808/9

Push-Pull PWM Controller

- ◆ Dual output drive stages in push-pull configuration
- ◆ Leading edge current-sense blanking
- ◆ 130 μ A typical start-up current
- ◆ 1mA typical run current
- ◆ Operation to 1MHz
- ◆ Internal soft start
- ◆ On-chip error amplifier with 4MHz gain bandwidth product
- ◆ On-chip VDD clamping
- ◆ Output drive stages capable of 500mA peak source current, 1A peak sink current

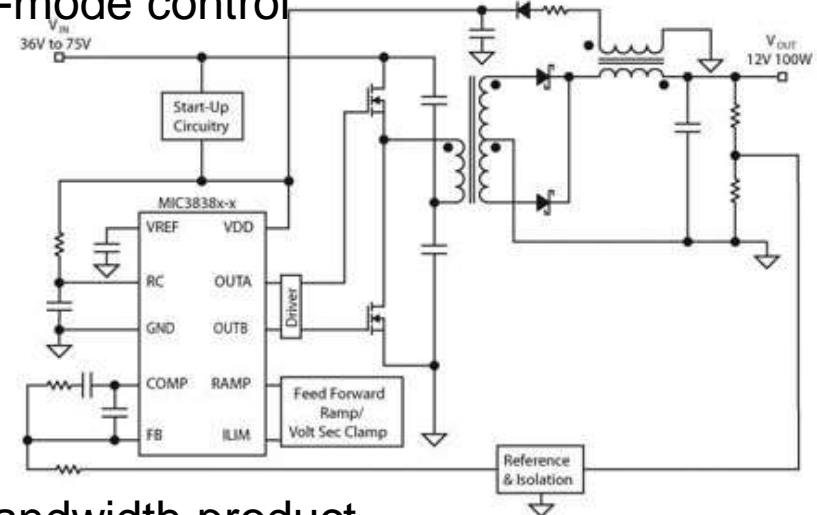




MIC3838/9

Flexible Push-Pull PWM Controller

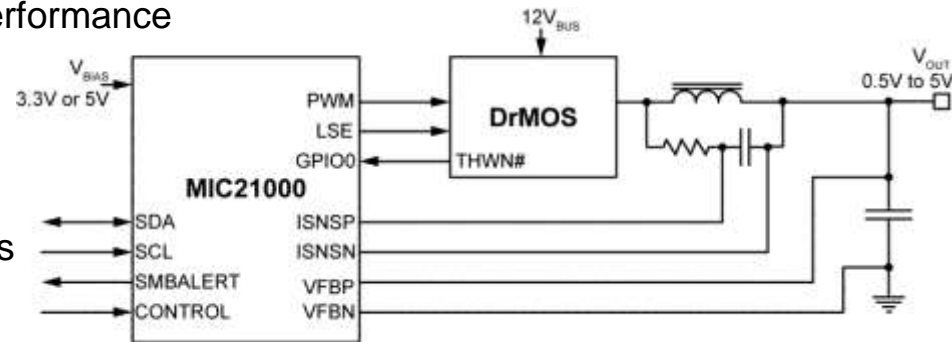
- ◆ Dual output drive stages in push-pull configuration
- ◆ Configurable for current-mode or voltage-mode control
- ◆ Easily implements volt-second clamp
- ◆ Leading edge current-sense blanking
- ◆ 3V reference output available
- ◆ 130 μ A typical start-up current
- ◆ 1mA typical run current
- ◆ Operation to 1MHz
- ◆ On-chip error amplifier with 4MHz gain bandwidth product
- ◆ Internal soft start
- ◆ On-chip V_{DD} clamping
- ◆ Output drive stages capable of 500mA peak source current, 1A peak sink current



MIC21000

Digital PWM Controller with PMBus™

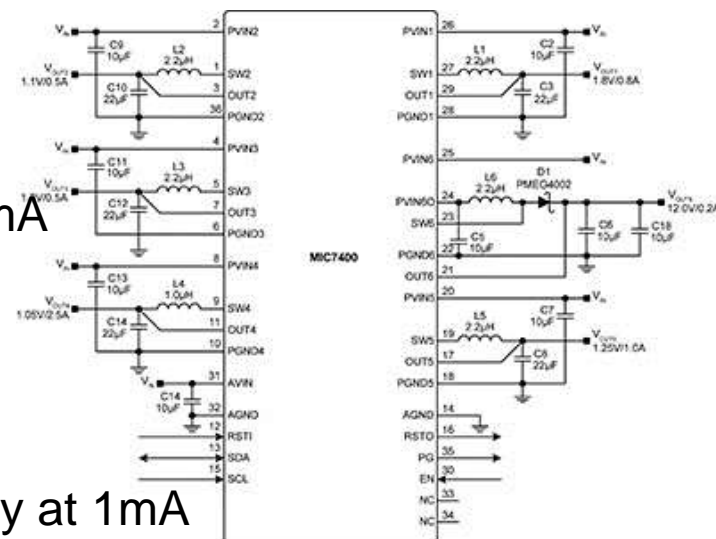
- ◆ Small solution size and low system cost
 - Ultra-fast transient response to reduce output capacitance
 - Non-linear control to improve transient performance
- ◆ High accuracy and performance
 - Optimized steady-state performance
 - High-resolution DAC for output
 - High power efficiency with power modules
- ◆ Fast time to market
 - Programmable control loop to tailor transient response
 - Design flexibility with Micrel Digital Designer GUI
- ◆ System management and diagnostics
 - Digital communication through PMBus™
 - System-level integration with host
- ◆ System protection
 - Programmable UVLO, OCP, OTP, OVP
 - Dedicated temperature monitoring



MIC7400

Five-Channel Buck Regulator Plus One-Boost with HyperLight Load® and I2C Control

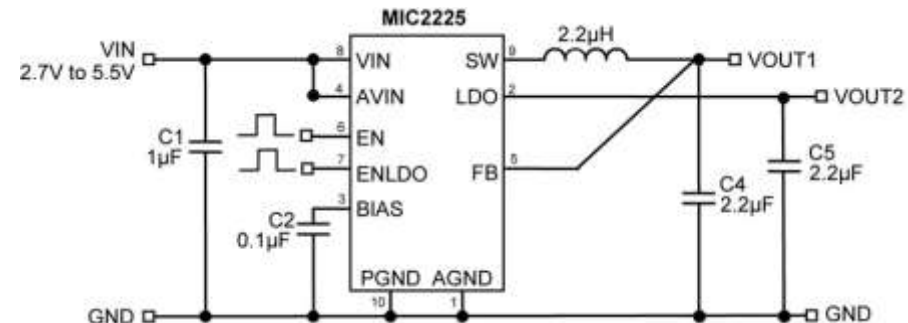
- ◆ Input voltage: 2.4V to 5.5V
- ◆ Five independent synchronous bucks up to 3A
- ◆ One independent non-synchronous boost 200mA
- ◆ 200 μ A quiescent current (all regulators on)
- ◆ Dual power mode: stand-by and normal mode
- ◆ I²C interface up to 3.4MHz
- ◆ 93% peak buck efficiency, 85% typical efficiency at 1mA
- ◆ I²C on-the-fly EEPROM programmability, featuring:
 - Buck and boost output voltage scaling
 - Power-on-reset threshold and delay
 - Power-up sequencing/sequencing delay
 - Buck and boost current limit
 - Buck and boost pull-down when disabled
 - Individual ON, OFF, and standby modes
 - Soft-start and global power-good masking
- ◆ 1.5% output accuracy over temperature/line/load



MIC2225

2MHz PWM Synchronous Buck Regulator with 300mA LDO

- ◆ 2.7V to 5.5V supply voltage
- ◆ 2MHz PWM mode
- ◆ Output current to 600mA
- ◆ >95% efficiency
- ◆ Stable with 2.2 μ F ceramic output capacitor
- ◆ Fully integrated MOSFET switches
- ◆ Micropower shutdown (1mA in shutdown)
- ◆ Pb-free 10-pin 2mm x 2mm Thin MLF[®] package
- ◆ -40°C to +125°C junction temperature range



LDO

- ◆ V_{IN} range 2.7V to 5.5V
- ◆ 300mA output current
- ◆ Output voltage down to 0.8V
- ◆ Thermal shutdown protection





MIC23060

Sequenced Power Management IC with HyperLight Load® DC/DC and Dual Input LDO

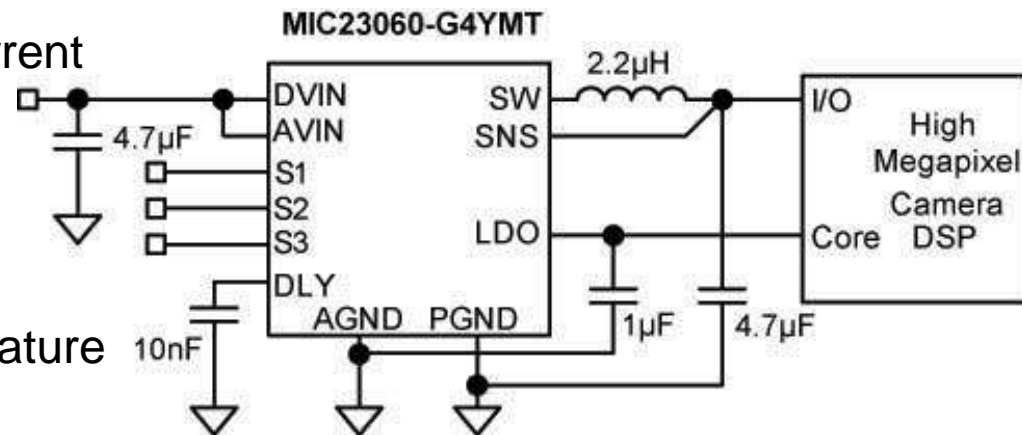
- ◆ 2.7V to 5.5V supply voltage range
- ◆ Tiny 12-pin 2.5mm x 2.5mm Thin MLF® package
- ◆ Dual Input LDO™ can turn-on prior to DC/DC converter and automatically switch post regulation from the DC/DC converter after it starts

HyperLight Load® DC/DC Converter

- ◆ 4MHz frequency in continuous PWM mode
- ◆ Tiny 2.2μH inductor, 4.7μF capacitor
- ◆ 85% Efficiency at 1mA output current
- ◆ >90% peak efficiency

LDO Regulator

- ◆ 300mA output current capability
- ◆ High Accuracy: ±3% over temperature
- ◆ High PSRR: greater than 60dB
- ◆ Very low quiescent current: 16μA



MIC2807

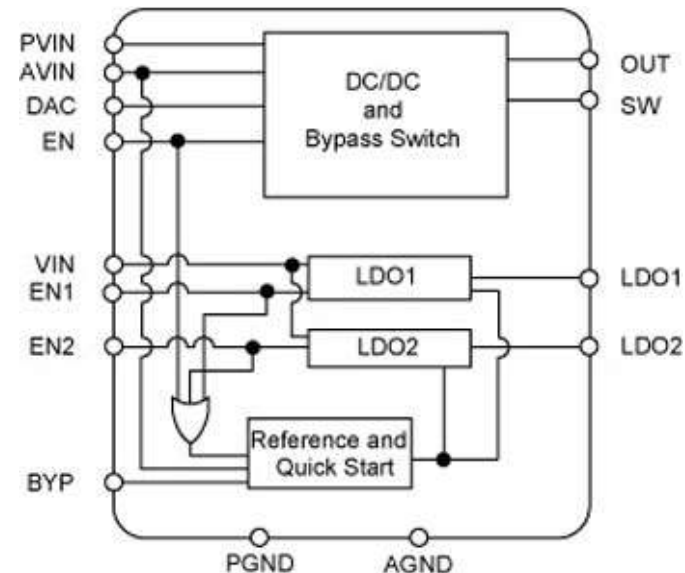


RF PA Power Management IC 2MHz, 500mA DC/DC w/DAC Input and Bypass Switch,
Dual Low Noise 200mA/30mA LDO Regulators

- ◆ 2.7V to 5.5V input voltage range
- ◆ Stable with ceramic output capacitors
- ◆ Tiny 17-pin 2.5mm x 2.8mm MLF[®] Package

RF PA Power Supply DC/DC Converter

- ◆ Adjustable output power supply - DAC controlled
 - $V_{OUT} = V_{DAC} \times 3$
- ◆ Bypass mode operation
 - Internal 95mΩ switch between PVIN and OUT pins
 - $V_{DAC} > 1.2V$
- ◆ Tiny 4.7μH, 1μF output inductor and capacitor



Dual Low Noise Low Dropout Regulators

- ◆ High accuracy: ±2% over temperature
- ◆ Very low output noise: 32 μV_{rms}
- ◆ LDO1: 200mA output current capability
- ◆ LDO2: 30mA output current capability



MIC2808



RF PA Power Management IC 2MHz, 600mA DC/DC w/DAC Input and Bypass Switch,
Dual Low Noise 200mA/30mA LDO Regulators

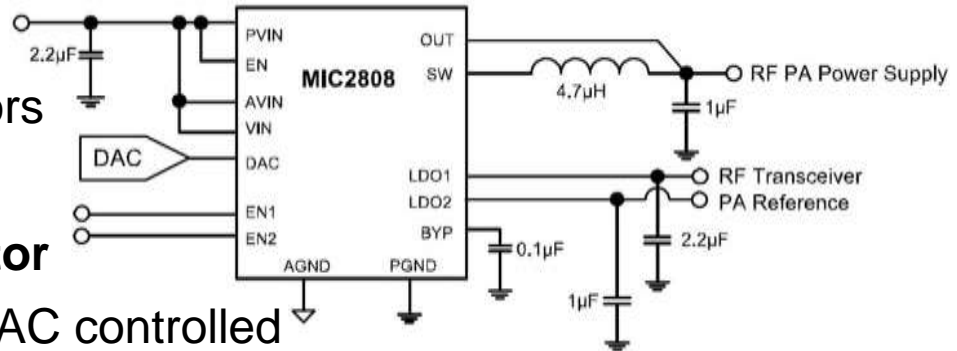
- ◆ Tiny 16-pin 2.0mm x 2.5mm TMLF® Package
- ◆ 2.7V to 5.5V input voltage range
- ◆ Stable with ceramic output capacitors
- ◆ Current limit protection

RF PA Power Supply DC/DC Regulator

- ◆ Adjustable output power supply - DAC controlled
- ◆ $V_{OUT} = V_{DAC} \times 3$
- ◆ Internal 95m Ω switch between PVIN and OUT pins
- ◆ Tiny 4.7 μ H, 1 μ F output inductor and capacitor
- ◆ Low-noise 2MHz PWM operation

Dual Low Noise Low Dropout Regulators

- ◆ High accuracy: $\pm 2\%$ over temperature
- ◆ High PSRR: greater than 70dB
- ◆ Very low output noise: 32 μ V_{rms}



MIC2810

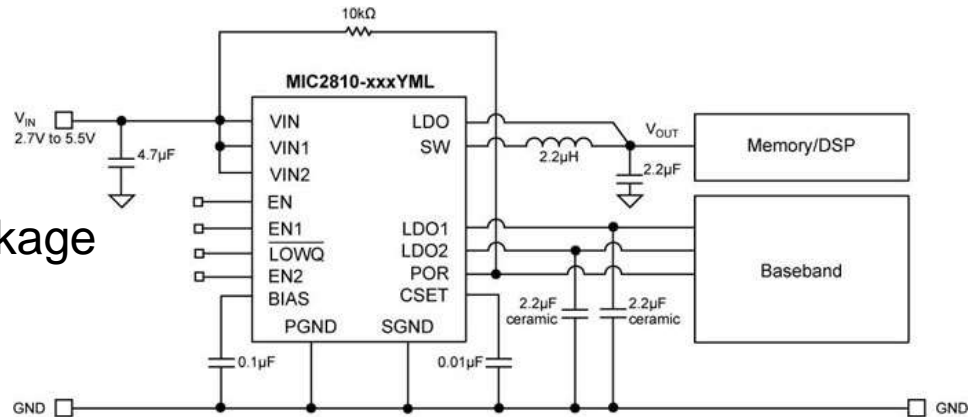


Digital Power Management IC 2MHz, 600mA DC/DC w/Dual 300mA/300mA Low VIN LDOs

- ◆ LowQ[®] mode
 - 30 μ A Total I_Q when in LowQ[®] mode
- ◆ Tiny 16-pin 3mm x 3mm MLF[®] package

DC/DC Converter

- ◆ 2.7V to 5.5V input voltage range
- ◆ Output current to 600mA in PWM mode
- ◆ LowQ[®] Mode: no noise light load mode
 - 53 μ V_{rms} Output noise in LowQ[®] mode



LDOs

- ◆ LDO1
 - 1.65V to 5.5V input voltage range
 - 300mA Output current
- ◆ LDO2
 - 2.7V to 5.5V input voltage range
 - 300mA Output current



MIC2811

Digital Power Management IC 2MHz, 600mA DC/DC with Triple 300mA LDOs

- ◆ 2MHz DC/DC converter and 3 LDOs
- ◆ $\pm 2\%$ Output Voltage Accuracy on all outputs

DC/DC Converter

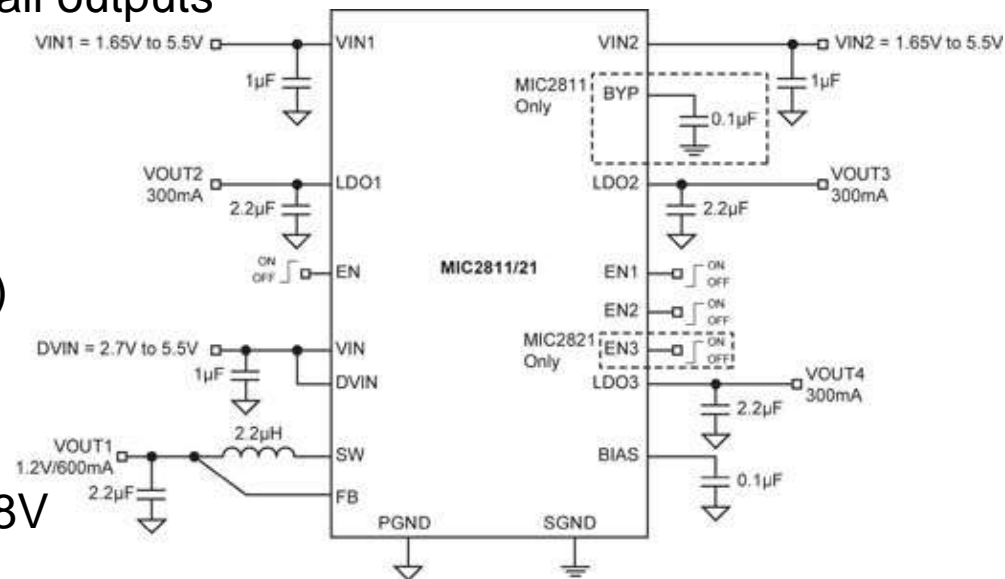
- ◆ 2.7V to 5.5V input voltage range
- ◆ Output current to 600mA
- ◆ Up to 86% efficiency (1.2V output)

LDO 1 and 2

- ◆ 1.65V to 5.5V input voltage range
- ◆ Fixed Output voltage as low as 0.8V
- ◆ 70dB PSRR at 1kHz

LDO 3

- ◆ 2.7V to 5.5V input voltage range
- ◆ 300mA output current
- ◆ Fixed Output voltage as low as 1.0V



MIC2826

Quad Output PMIC with HyperLight Load® DC/DC, 3 LDOs and I2C control

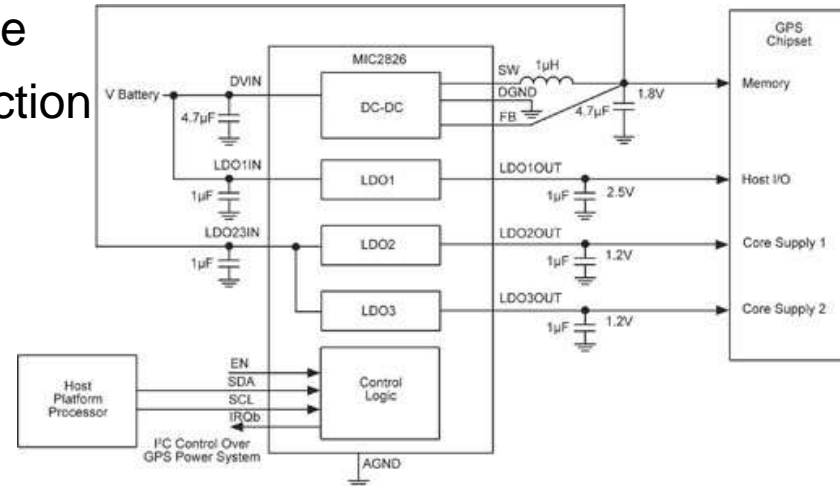
- ◆ -40°C to 125°C junction temperature range
- ◆ Thermal shutdown and current-limit protection
- ◆ Power On After Fault (POAF) function

DC-DC Synchronous Buck

- ◆ 2.7V to 5.5V input voltage range
- ◆ 500mA continuous output current
- ◆ HyperLight Load® mode
- ◆ Dynamic Voltage Scaling (DVS) range: 0.8V to 1.8V

LDOs

- ◆ 1.8V to VDVIN input voltage range
- ◆ 150mA output current (each LDO)
- ◆ Dynamic Voltage Scaling (each LDO)
- ◆ Low quiescent current: 50µA (each LDO)
- ◆ Low dropout voltage: 50mV @ 50mA



MIC2827

Triple Output PMIC with HyperLight Load® DC-DC, two LDOs, and I²C Control

- ◆ Tiny 14-pin 2.5mm x 2.5mm MLF® package
- ◆ -40°C to 125°C junction temperature range
- ◆ Power On After Fault (POAF) function

DC-DC Synchronous Buck

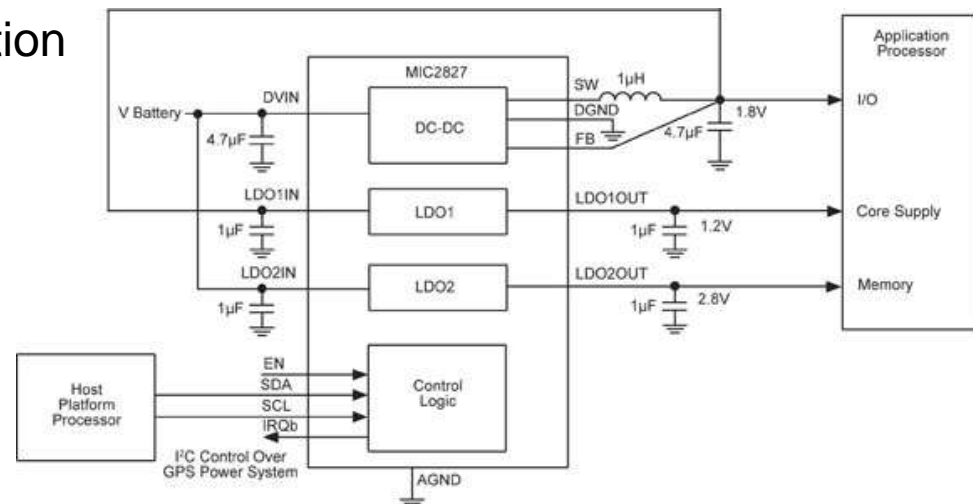
- ◆ 2.7V to 5.5V input voltage range
- ◆ 500mA continuous output current

HyperLight Load® mode

- ◆ 25µA quiescent current
- ◆ 90% peak efficiency; 85% at 1mA
- ◆ Dynamic Voltage Scaling (DVS) range: 0.8V to 1.8V

LDOs

- ◆ 150mA output current (each LDO)
- ◆ Dynamic Voltage Scaling (each LDO)
- ◆ Low quiescent current - 50µA (each LDO)



MIC2829



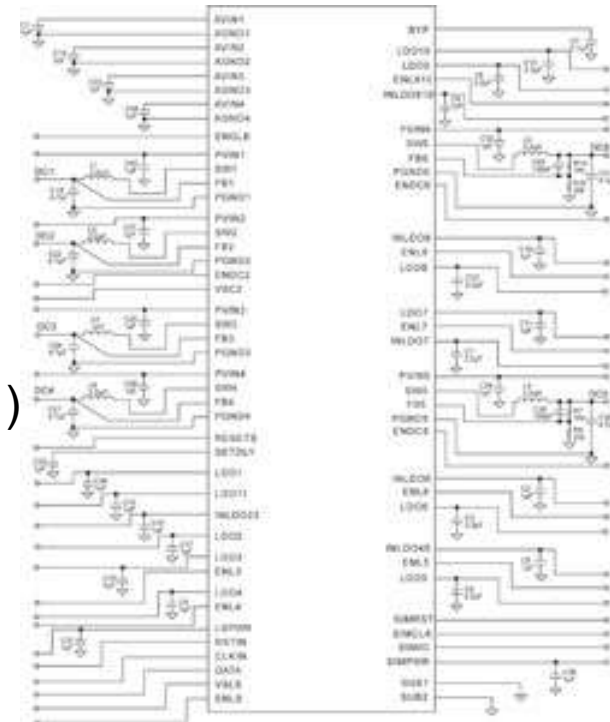
3G/4G HEDGE/LTE PMIC with Six Buck Converters, Eleven LDOs and SIM Card Level Translation

Four HyperLight Load® step-down regulators

- DC1: 4MHz / 1000mA
- DC2: 4MHz / 300mA (with voltage scaling)
- DC3: 2.5MHz / 600mA
- DC4: 4MHz / 600mA (with adjustable delay POR)

Eleven Low Dropout Regulators (LDOs)

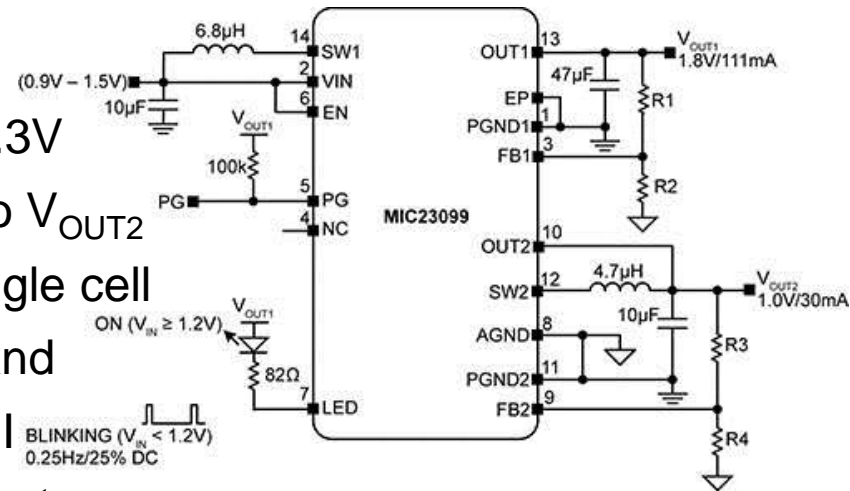
- ◆ Five general purpose 200mA LDOs (LDO1-4, LDO11)
 - LDO3: 38mV dropout at 100mA
 - LDO2 and LDO4: 80mV dropout at 100mA
 - LDO1 and LDO11: 115mV dropout at 100mA
 - Output accuracy $\pm 3\%$
 - 40 μ A ground current
- ◆ Six high performance 200mA LNRs (LDO5-10)
 - High PSRR 70dB at 1kHz
 - Low noise: 20 μ V_{rms}
 - 40mV dropout at 100mA
 - Output accuracy $\pm 3\%$
 - 20 μ A ground current



MIC23099

Single AA/AAA Cell Step-Up/Step-Down Regulators with Battery Monitoring

- ◆ V_{IN} range from 0.85V to 1.6V
- ◆ V_{OUT1} (step-up) adjustable from 1.8V to 3.3V
- ◆ V_{OUT2} (step-down) adjustable from 1.0V to V_{OUT2}
- ◆ $V_{OUT1}/400\text{mW}$ and $V_{OUT2}/30\text{mA}$ from a single cell
- ◆ Minimizes switching noise in the audio band
- ◆ Anti-ringing control circuit to minimize EMI
- ◆ Turn-on inrush current limiting and soft-start
- ◆ Automatic output discharge
- ◆ Step-up regulator with output disconnect in shutdown
- ◆ Low-battery indicator
- ◆ Power Good (PG) output
- ◆ Low output ripple < 10mV
- ◆ 14-pin 2.5mm × 2.5mm × 0.55mm thin QFN (TQFN) package
- ◆ -40°C to +125°C junction temperature range

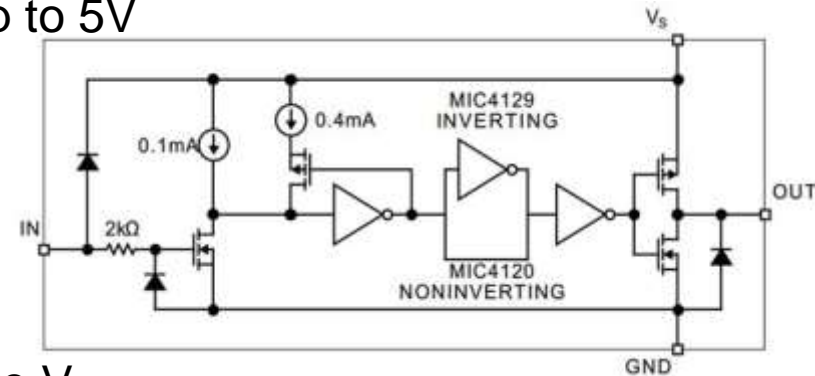




MIC4120/9

6A-Peak Low-Side MOSFET Driver Bipolar/CMOS/DMOS Process

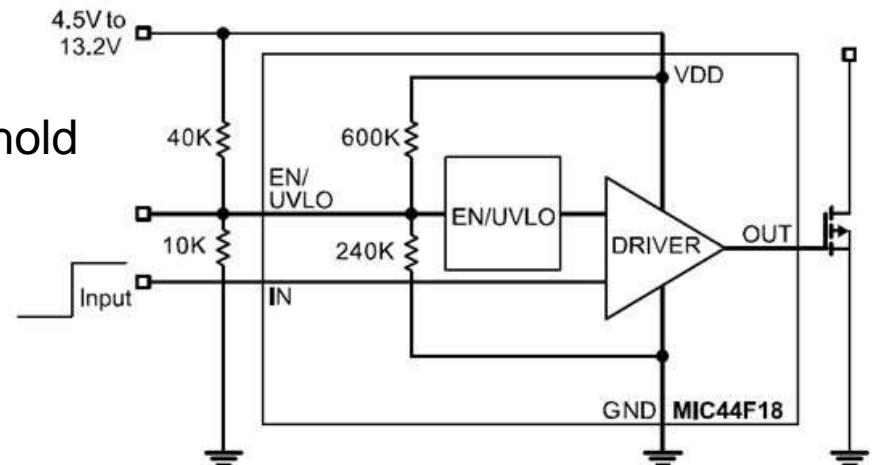
- ◆ Latch-up protected: will withstand $>200\text{mA}$ reverse output current
- ◆ Logic input withstands negative swing of up to 5V
- ◆ Matched rise and fall times of 25ns
- ◆ High peak output current at 6A
- ◆ Wide operating range from 4.5V to 20V
- ◆ High capacitive load drive of $10,000\text{pF}$
- ◆ Logic high input for any voltage from 2.4V to V_S
- ◆ Low equivalent input capacitance (typ) at 6pF
- ◆ Low supply current is $450\mu\text{A}$ with logic 1 input
- ◆ Low output impedance is 2.5Ω
- ◆ Output voltage swing within 25mV of ground or V_S
- ◆ Exposed backside pad packaging reduces heat
 - ePad SOIC-8L ($\theta_{JA} = 58^\circ\text{C/W}$)
 - $3\text{mm} \times 3\text{mm}$ MLF[®]-8L ($\theta_{JA} = 60^\circ\text{C/W}$)



MIC44F18/19/20

6A High Speed MOSFET Drivers in 2mm x 2mm Package

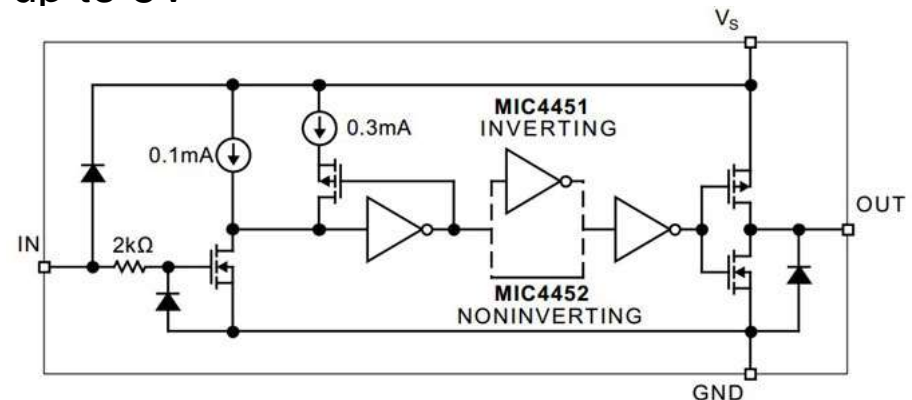
- ◆ 4.5V to 13.2V input operating range
- ◆ 6A peak output current
- ◆ High accuracy $\pm 5\%$ enable input threshold
- ◆ High speed switching capability
 - 10ns rise time in 1000pF load
 - <15ns propagation delay time
- ◆ Flexible UVLO function
 - 4.2V internally set UVLO
 - Programmable with external resistors
- ◆ Latch-up protection to >500mA reverse current on the output pin
- ◆ Enable function
- ◆ Thermally enhanced ePad MSOP-8 package option
- ◆ Miniature 2mm x 2mm MLF[®]-8 package option
- ◆ Pb-free packaging



MIC4451/2

12A Peak Low-Side MOSFET Driver Bipolar/CMOS/DMOS Process

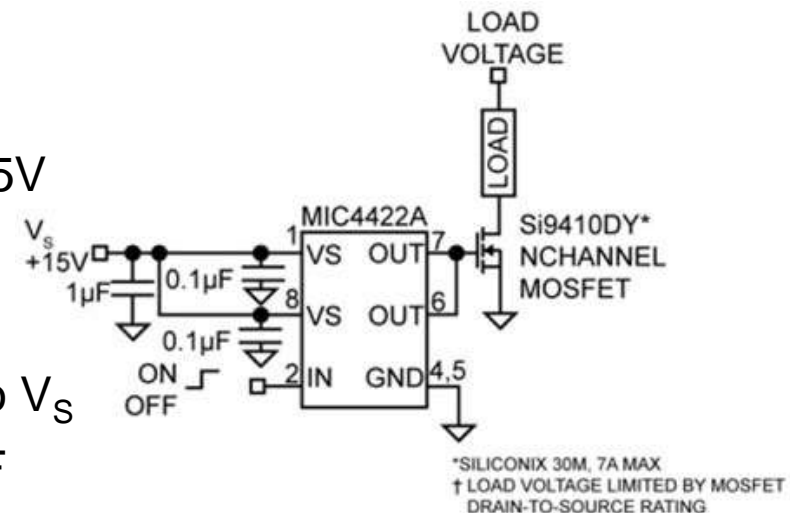
- ◆ BiCMOS/DMOS construction
- ◆ Latch-up proof: fully isolated process is inherently immune to any latch-up.
- ◆ Input will withstand negative swing of up to 5V
- ◆ Matched rise and fall times 25ns
- ◆ High peak output current 12A peak
- ◆ Wide operating range 4.5V to 18V
- ◆ High capacitive load drive 62,000pF
- ◆ Low delay time 30ns typ.
- ◆ Logic high input for any voltage from 2.4V to V_S
- ◆ Low equivalent input capacitance (typ.) 7pF
- ◆ Low supply current 450 μ A with logic 1 input
- ◆ Low output impedance 1.0 Ω
- ◆ Output voltage swing to within 25mV of ground or V_S



MIC4421A/2A

12A Peak Low-Side MOSFET Driver Bipolar/CMOS/DMOS Process

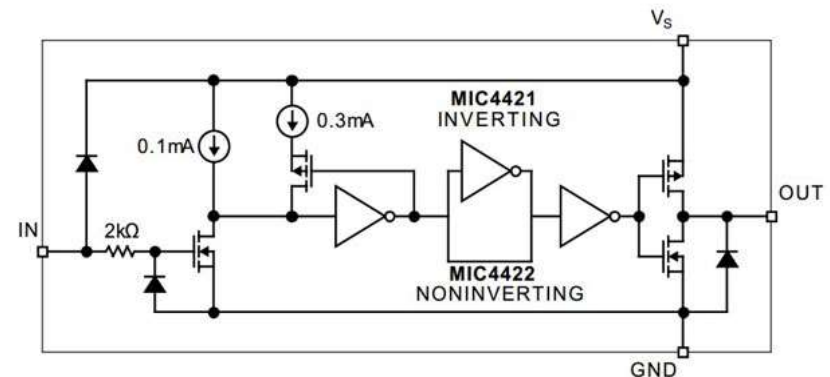
- ◆ High peak-output current: 9A peak (typ.)
- ◆ Wide operating range: 4.5V to 18V (typ.)
- ◆ Minimum pulse width: 50ns
- ◆ Input will withstand negative swing of up to 5V
- ◆ High capacitive load drive: 47,000pF
- ◆ Low delay time: 15ns (typ.)
- ◆ Logic high input for any voltage from 2.4V to V_S
- ◆ Low equivalent input capacitance (typ.): 7pF
- ◆ Low supply current: 500 μ A (typ.)
- ◆ Latch-up proof: fully isolated process is inherently immune to any latch-up.
- ◆ Output voltage swing to within 25mV of ground or V_S



MIC4421/2

9A Peak Low-Side MOSFET Driver

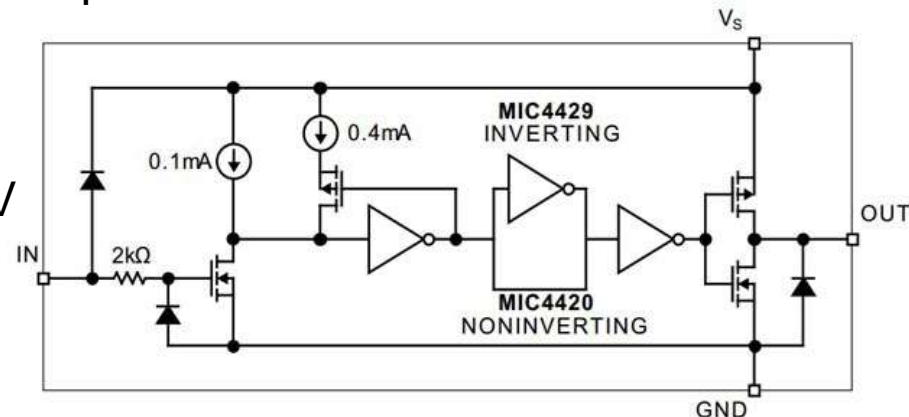
- ◆ BiCMOS/DMOS construction
- ◆ Latch-up proof: fully isolated process is inherently immune to any latch-up.
- ◆ Input will withstand negative swing of up to 5V
- ◆ Matched rise and fall times 25ns
- ◆ High peak output current 9A peak
- ◆ Wide operating range 4.5V to 18V
- ◆ High capacitive load drive 47,000pF
- ◆ Low delay time 30ns typ.
- ◆ Logic high input for any voltage from 2.4V to V_S
- ◆ Low equivalent input capacitance (typ.) 7pF
- ◆ Low supply current 450 μ A with logic 1 input
- ◆ Low output impedance 1.5 Ω
- ◆ Output voltage swing to within 25mV of ground or V_S



MIC4420/9

6A-Peak Low-Side MOSFET Driver Bipolar/CMOS/DMOS Process

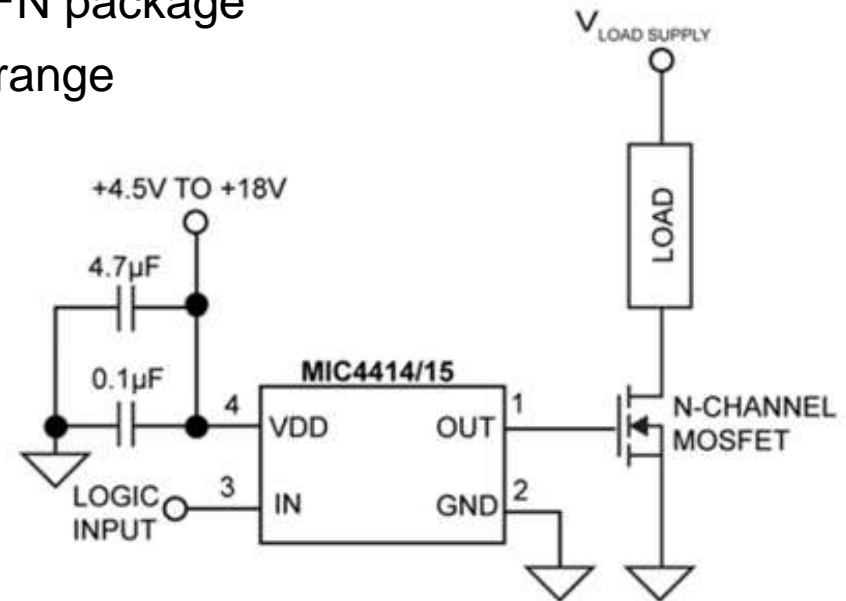
- ◆ CMOS construction
- ◆ Latch-up protected: will withstand $>500\text{mA}$ reverse output current
- ◆ Logic input withstands negative swing of up to 5V
- ◆ Matched rise and fall times of 25ns
- ◆ High peak output current at 6A
- ◆ Wide operating range from 4.5V to 18V
- ◆ High capacitive load drive of $10,000\text{pF}$
- ◆ Low delay time of 55ns typical
- ◆ Low delay time 55ns typ.
- ◆ Logic high input for any voltage from 2.4V to V_S
- ◆ Low equivalent input capacitance (typ.) 6pF
- ◆ Low supply current $450\mu\text{A}$ with logic 1 input
- ◆ Low output impedance 2.5Ω
- ◆ Output voltage swing within 25mV of ground or V_S



MIC4414/5

1.5A, 4.5V to 18V, Low-Side MOSFET Driver

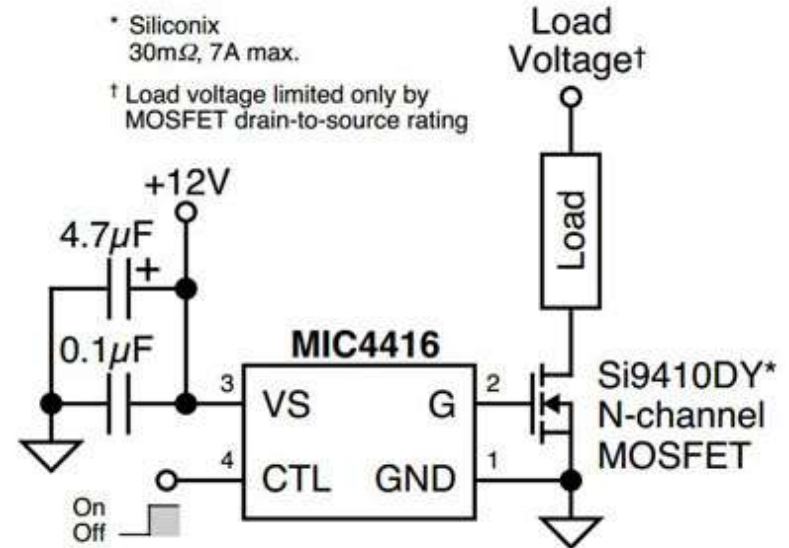
- ◆ Ultra-small 4-pin 1.2mm x 1.2mm thin QFN package
- ◆ +4.5V to +18V operating supply voltage range
- ◆ 1.5A peak current
 - 3.5Ω output resistance at 18V
 - 9Ω output resistance at 5V
- ◆ Low steady-state supply current
 - 77μA control input low
 - 445μA control input high
- ◆ 12ns rise and fall times into 1000pF load
- ◆ MIC4414 (non-inverting)
- ◆ MIC4415 (inverting)
- ◆ -40°C to +125°C junction temperature range
- ◆ 12ns rise and fall times into 1000pF load
- ◆ MIC4414 (non-inverting)
- ◆ MIC4415 (inverting)



MIC4416/7

IttyBitty® Low-Side MOSFET Driver

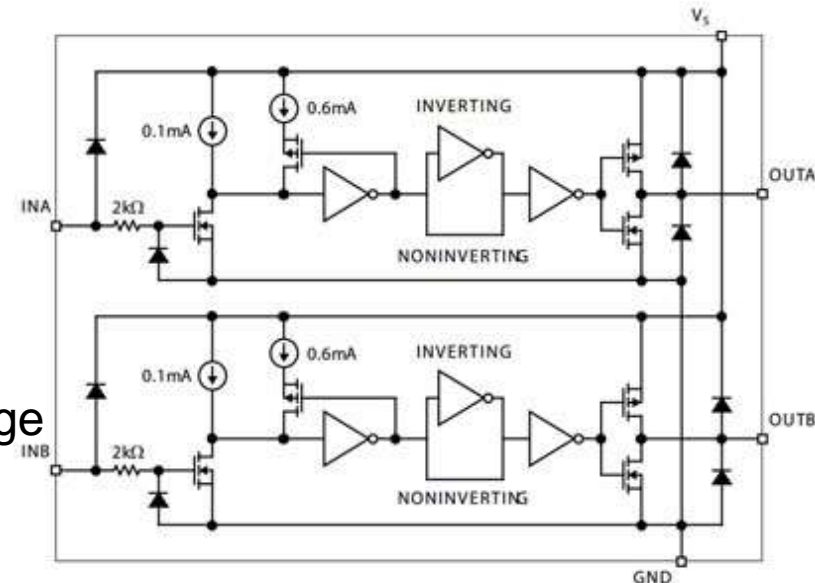
- ◆ +4.5V to +18V operation
- ◆ Low steady-state supply current
 - 50 μ A typical, control input low
 - 370 μ A typical, control input high
- ◆ 1.2A nominal peak output
 - 3.5 Ω typical output resistance at 18V supply
 - 7.8 Ω typical output resistance at 5V supply
- ◆ Operates in low-side switch circuits
- ◆ TTL-compatible input withstands -20V
- ◆ ESD protection
- ◆ 25mV maximum output offset from supply or ground
- ◆ Inverting and noninverting versions



MIC4123/4/5

Dual 3A-Peak Low-Side MOSFET Driver Bipolar/CMOS/DMOS Process

- ◆ Latch-up protected to >200mA reverse current
- ◆ Logic input withstands swing to -5V
- ◆ High 3A peak output current
- ◆ Wide 4.5V to 20V operating range
- ◆ Drives 1800pF capacitance in 25ns
- ◆ Short <50ns typical delay time
- ◆ TTL logic input independent of supply voltage
- ◆ Low equivalent 6pF input capacitance
- ◆ Low supply current
 - 3.5mA with logic 1 input
 - 350μA with logic 0 input
- ◆ Output voltage swings within 25mV of ground or V_S .
- ◆ '426/7/8-, '1426/7/8-, '4426/7/8-compatible pinout
- ◆ Exposed backside pad packaging reduces heat ePad SOIC-8L ($\theta_{JA} = 58^\circ\text{C/W}$)
4mm x 4mm MLF[®]-8L ($\theta_{JA} = 45^\circ\text{C/W}$)

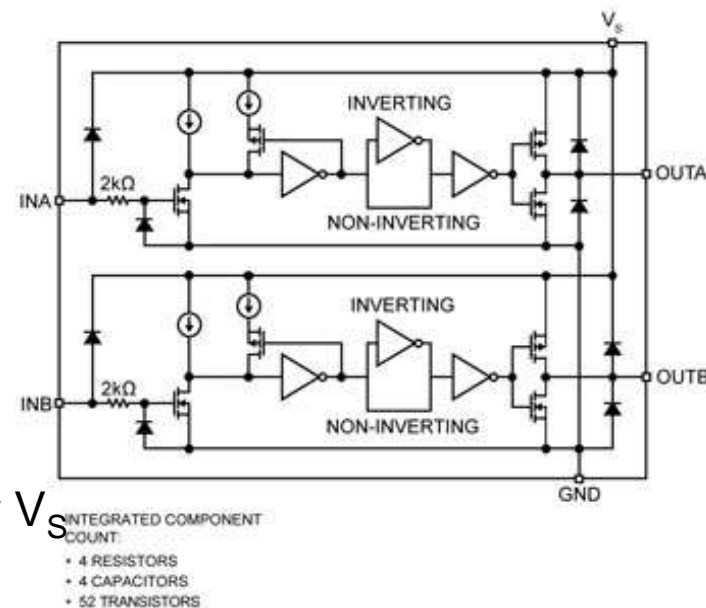


MAQ4123/4/5



Automotive AEC-Q100 Qualified Dual 3A Peak Low-Side MOSFET Driver Bipolar/CMOS/DMOS Process

- ◆ Automotive AEC-Q100 qualified
- ◆ High $\pm 3\text{A}$ peak output current
- ◆ Wide 4.5V to 20V supply voltage range
- ◆ Low 2.3Ω output resistance
- ◆ Logic input withstands swing to -5V
- ◆ Output voltage swings within 25mV of ground or V_S
- ◆ Low supply current
 - 2.0mA with logic 1 input (maximum over temperature)
 - 300 μA with logic 0 input (maximum over temperature)
- ◆ '426/7/8-, '1426/7/8-, '4426/7/8 industry standard pin out
- ◆ Fast 10ns rise/fall times with 1800pF capacitive load
- ◆ TTL/CMOS logic inputs independent of supply voltage
- ◆ Inverting, non-inverting, and differential configurations
- ◆ -40°C to +125°C temperature range

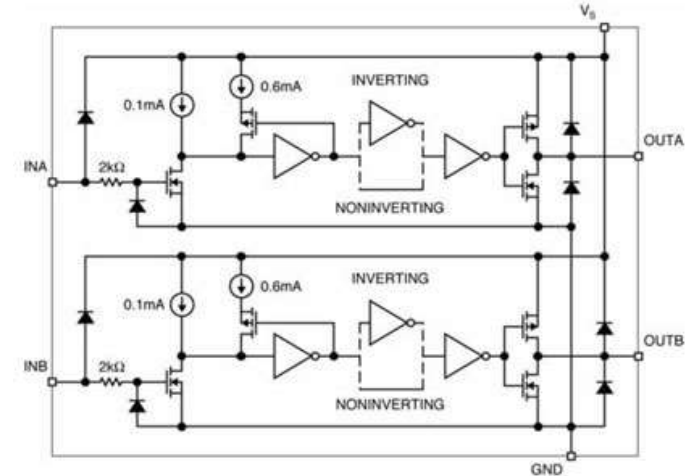




MIC4126/7/8

Dual 1.5A-Peak Low-Side MOSFET Drivers in Advanced Packaging

- ◆ Dual 1.5A-peak drivers
- ◆ 4.5V to 20V operating range
- ◆ Exposed backside pad packaging reduces heat
 - ePad SOIC-8L ($\theta_{JA} = 58^{\circ}\text{C/W}$)
 - ePad MSOP-8L ($\theta_{JA} = 60^{\circ}\text{C/W}$)
 - 3mm x 3mm MLF[®]-10L ($\theta_{JA} = 60^{\circ}\text{C/W}$)
- ◆ Bipolar/CMOS/DMOS construction
- ◆ 25mV maximum output offset from supply or ground
- ◆ Latch-up protection to >500mA reverse current
- ◆ Switches 1000pF in 25ns
- ◆ Logic-input threshold independent of supply voltage
- ◆ Logic-input protection to -5V
- ◆ 6pF typical equivalent input capacitance
- ◆ -40°C to +125°C operating junction temperature range

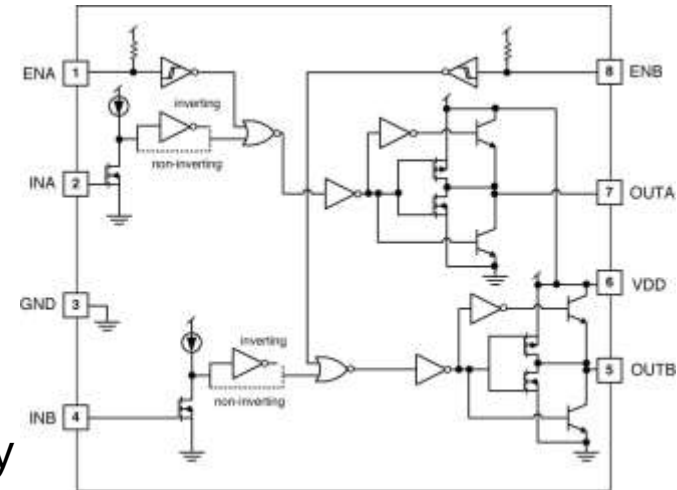




MIC4223/4/5

Dual 4A, 4.5V to 18V, 15ns Switch Time, Low-Side MOSFET Drivers with Enable

- ◆ 4.5V to 18V supply voltage operating range
- ◆ High peak source/sink current
 - $\pm 3\text{A}$ at $V_{DD} = 8\text{V}$
 - $\pm 4\text{A}$ at $V_{DD} = 12\text{V}$
- ◆ 15ns/15ns rise and fall times with 2000pF load
- ◆ 25ns/35ns (rising/falling) input propagation delay
- ◆ 20ns/45ns (rising/falling) enable propagation delay
- ◆ Active-high driver enable inputs with 100k Ω pull-ups
- ◆ Output latch-up protection to >500mA reverse current
- ◆ Industry standard pin out with two package options
 - ePad MSOP-8 ($\theta_{JA} = 60^{\circ}\text{C/W}$)
 - 8-pin SOIC ($\theta_{JA} = 120^{\circ}\text{C/W}$)
- ◆ Available in dual-inverting (MIC4223), dual non-inverting (MIC4224) and complementary (MIC4225)
- ◆ -40°C to +125°C operating junction temperature range

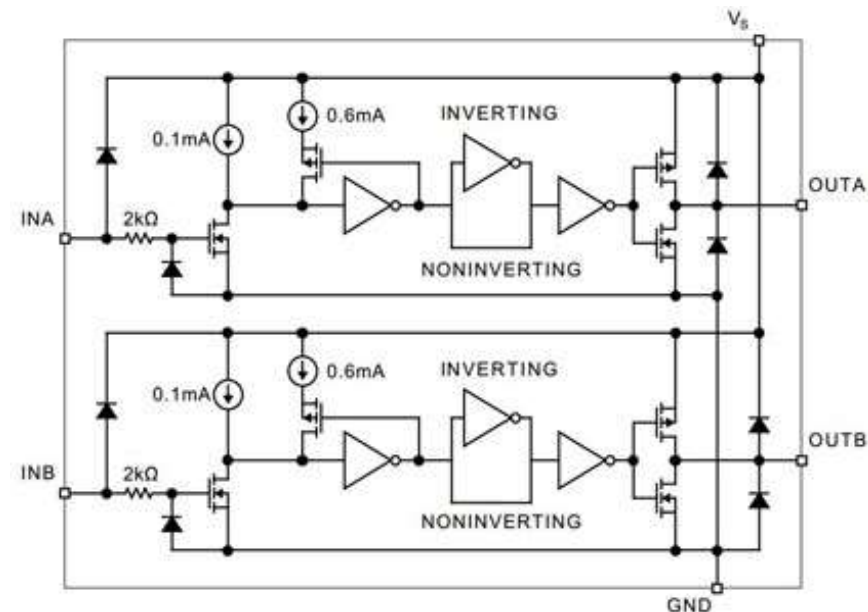




MIC4423/4/5

Dual 3A-Peak Low-Side MOSFET Driver Bipolar/CMOS/DMOS Process

- ◆ Reliable, low-power bipolar/CMOS/DMOS construction
- ◆ Latch-up protected to >500mA reverse current
- ◆ Logic input withstands swing to -5V
- ◆ High 3A peak output current
- ◆ Wide 4.5V to 18V operating range
- ◆ Drives 1800pF capacitance in 25ns
- ◆ Short <40ns typical delay time
- ◆ Low equivalent 6pF input capacitance
- ◆ 3.5mA with logic 1 input
- ◆ 350μA with logic 0 input
- ◆ Low 3.5Ω typical output impedance
- ◆ Output voltage swings within 25mV of ground or V_S .
- ◆ '426/7/8-, '1426/7/8-, '4426/7/8-compatible pinout
- ◆ Inverting, noninverting, and differential configurations

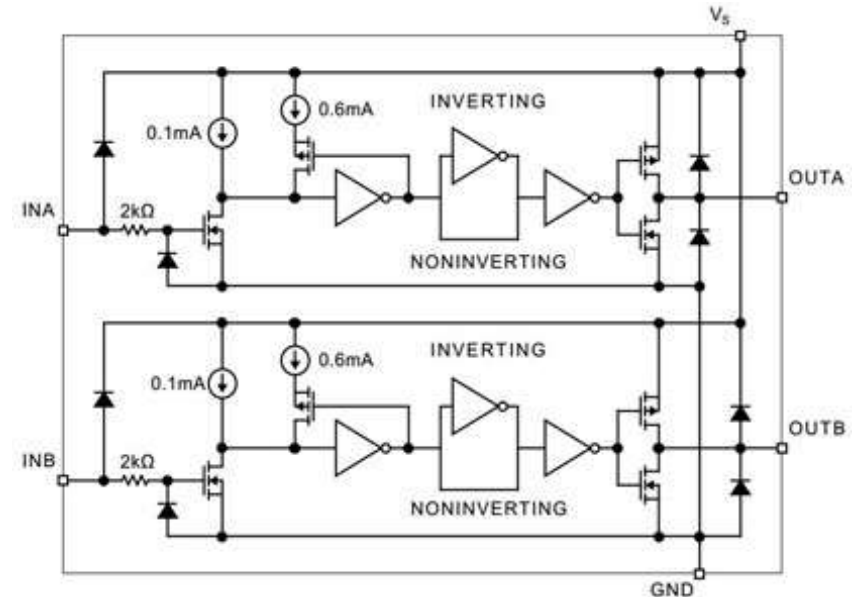




MIC4426/7/8

Dual 1.5A-Peak Low-Side MOSFET Driver

- ◆ Latch-up protection to >500mA reverse current
- ◆ 1.5A peak output current
- ◆ 4.5V to 18V operating range
- ◆ Low quiescent supply current
 - 4mA at logic 1 input
 - 400μA at logic 0 input
- ◆ Switches 1000pF in 25ns
- ◆ 7Ω output impedance
- ◆ <40ns typical delay
- ◆ 6pF typical equivalent input capacitance
- ◆ 25mV max. output offset from supply or ground
- ◆ Replaces MIC426/427/428 and MIC1426/1427/1428
- ◆ Dual inverting, dual noninverting, and inverting/noninverting configurations
- ◆ ESD protection

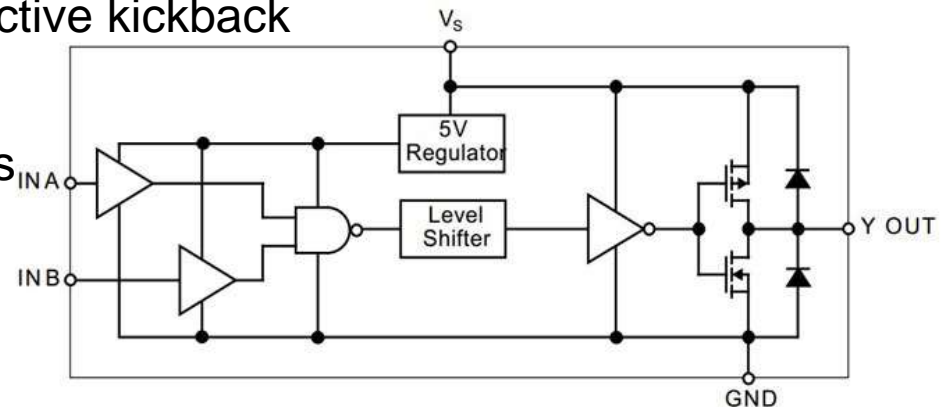




MIC4467/8/9

Quad 1.2A-Peak Low-Side MOSFET Driver

- ◆ Built using reliable, low power CMOS processes
- ◆ Latchproof: withstands 500mA inductive kickback
- ◆ Three input logic choices
- ◆ Symmetrical rise and fall times 25ns
- ◆ Short, equal delay times 75ns
- ◆ High peak output current 1.2A
- ◆ Wide operating range 4.5 to 18V
- ◆ Low equivalent input capacitance (typ) 6pF
- ◆ Inputs = Logic 1 for any input from 2.4V to V_S
- ◆ ESD protected

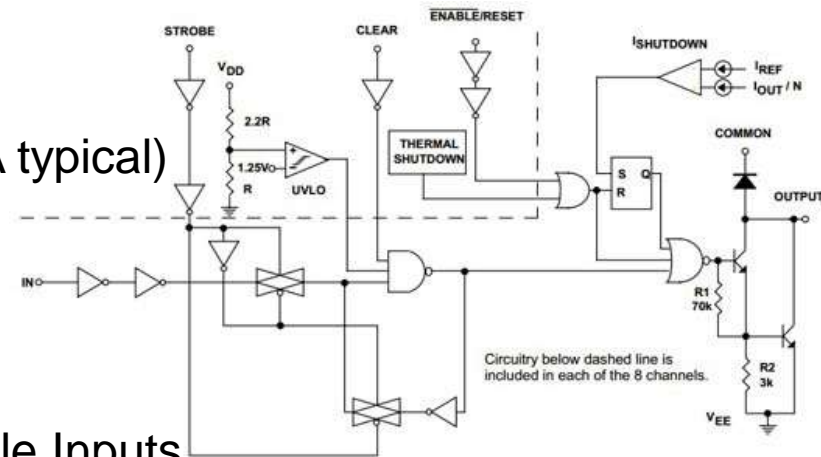




MIC58P01

8-Bit Parallel-Input Protected Latched Driver

- ◆ 4.4MHz Minimum Data Input Rate
- ◆ High-Voltage, High-Current Outputs
- ◆ Per-Output Overcurrent Shutdown (500mA typical)
- ◆ Under Voltage Lockout
- ◆ Thermal Shutdown
- ◆ Output Transient Protection Diodes
- ◆ CMOS, PMOS, NMOS, and TTL Compatible Inputs
- ◆ Internal Pull-Down Resistors
- ◆ Low-Power CMOS Latches

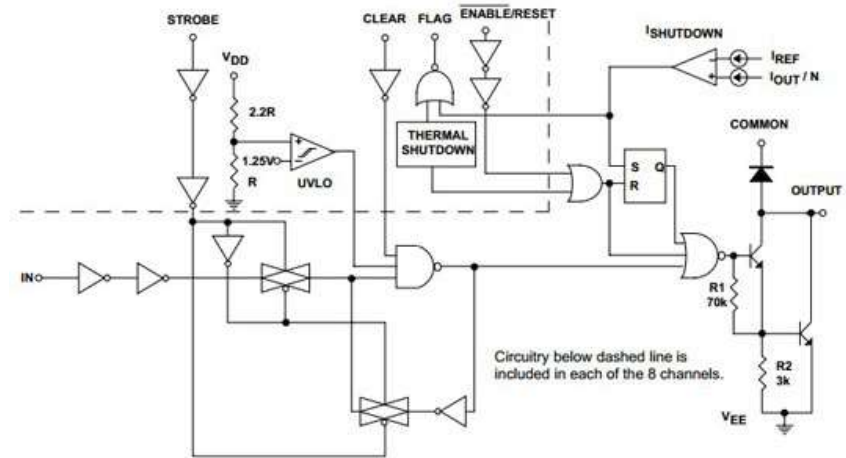




MIC59P50

8-Bit Parallel-Input Protected Latched Driver

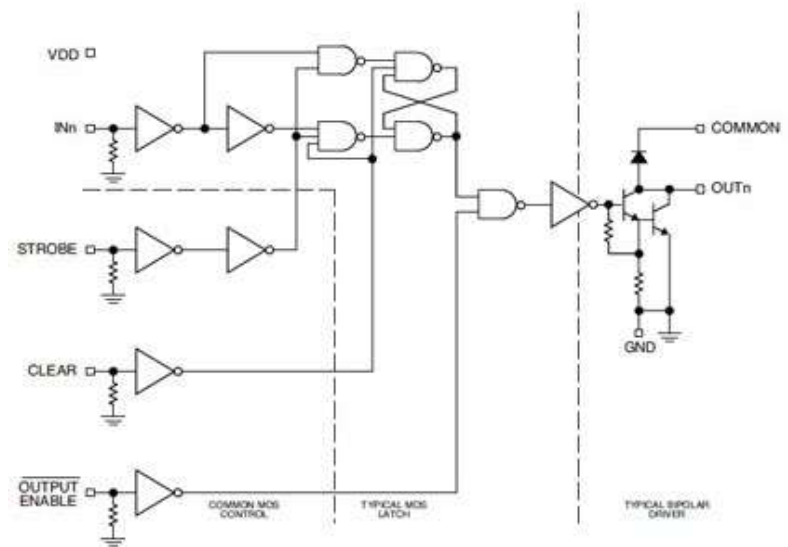
- ◆ 4.4 MHz Minimum Data Input Rate
- ◆ High-Voltage, High-Current Outputs
- ◆ Undervoltage Lockout
- ◆ Thermal Shutdown
- ◆ Output Fault Flag
- ◆ Output Transient Protection Diodes
- ◆ CMOS-, PMOS-, NMOS-, and TTL-compatible Inputs
- ◆ Internal Pull-Down Resistors
- ◆ Per-Output Over-Current Shutdown (500mA Typical)
- ◆ Low-Power CMOS Latches
- ◆ Single or Split Supply Operation



MIC5800/1

4/8-Bit Parallel-Input Latched Drivers

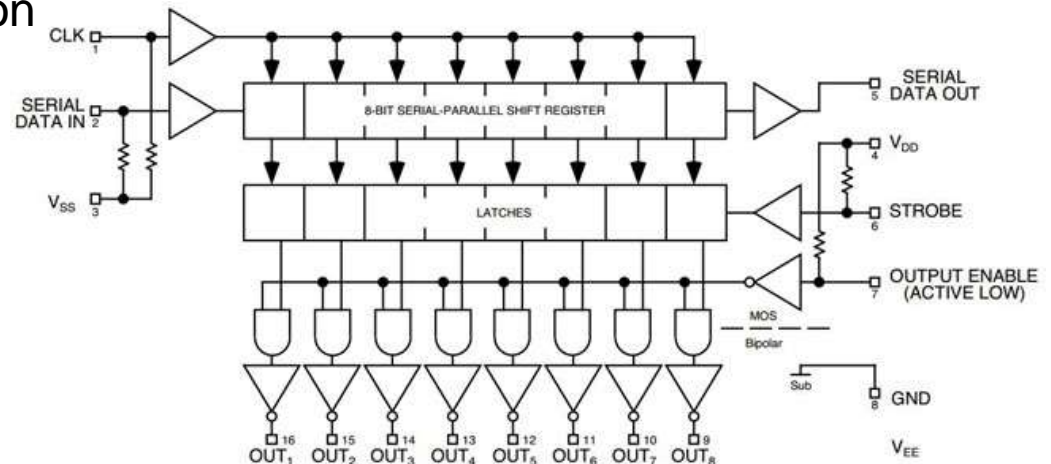
- ◆ CMOS, PMOS, NMOS, and TTL Compatible Inputs
- ◆ 4.4MHz Minimum Data Input Rate
- ◆ High-Voltage, Current Sink Outputs
- ◆ Output Transient Protection
- ◆ Internal Pull-Down Resistors
- ◆ Low-Power CMOS Latches



MIC5822

8-Bit Serial-Input Latched Drivers

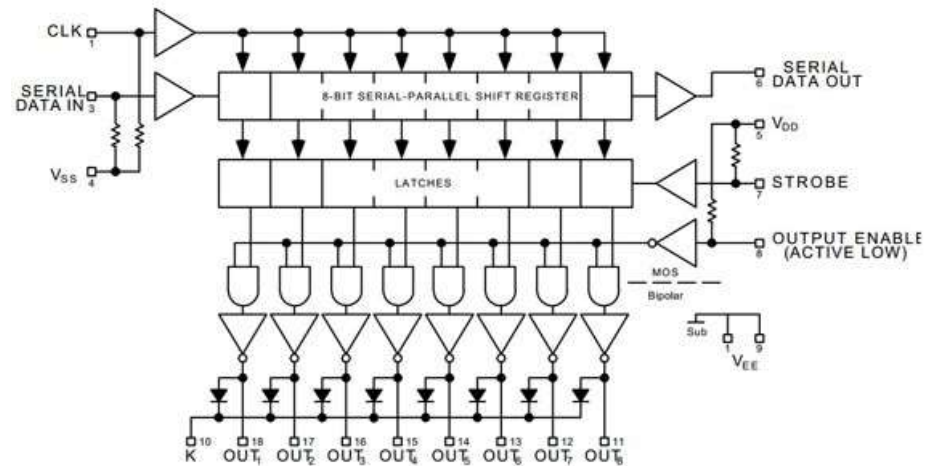
- ◆ 3.3 MHz Minimum Data-Input Rate
- ◆ CMOS, PMOS, NMOS, TTL Compatible
- ◆ Internal Pull-Down or Pull-Up Resistors
- ◆ Low-Power CMOS Logic and Latches
- ◆ High-Voltage Current-Sink Outputs
- ◆ Single or Split Supply Operation



MIC5842

8-Bit Serial-Input Latched Drivers

- ◆ 3.3 MHz Minimum Data-Input Rate
- ◆ CMOS, PMOS, NMOS, TTL Compatible
- ◆ Internal Pull-Up/Pull-Down Resistors
- ◆ Low-Power CMOS Logic and Latches
- ◆ High-Voltage Current-Sink Outputs
- ◆ Output Transient-Protection Diodes
- ◆ Single or Split Supply Operation

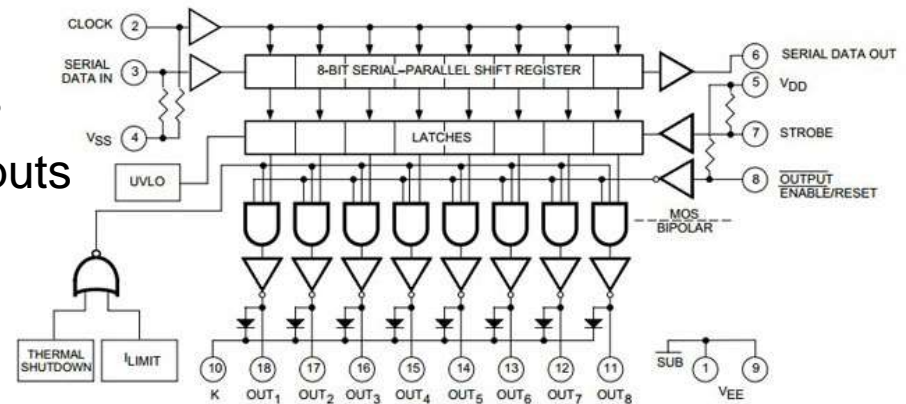




MIC58P42

8-Bit Serial-Input Protected Latched Driver

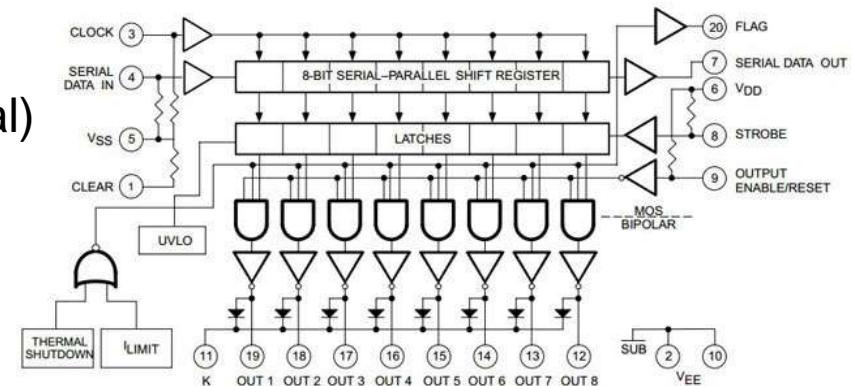
- ◆ 3.3 MHz Minimum Data-Input Rate
- ◆ CMOS, PMOS, NMOS, and TTL Compatible
- ◆ Internal Pull-Up/Pull-Down Resistors
- ◆ Low Power CMOS Logic and Latches
- ◆ High Voltage (80V) Current-Sink Outputs
- ◆ Output Transient-Protection Diodes
- ◆ Single or Split Supply Operation
- ◆ Thermal Shutdown
- ◆ Under-Voltage Lockout
- ◆ Per-Output Over-Current Shutdown (500mA typical)



MIC59P60

8-Bit Serial-Input Protected Latched Driver

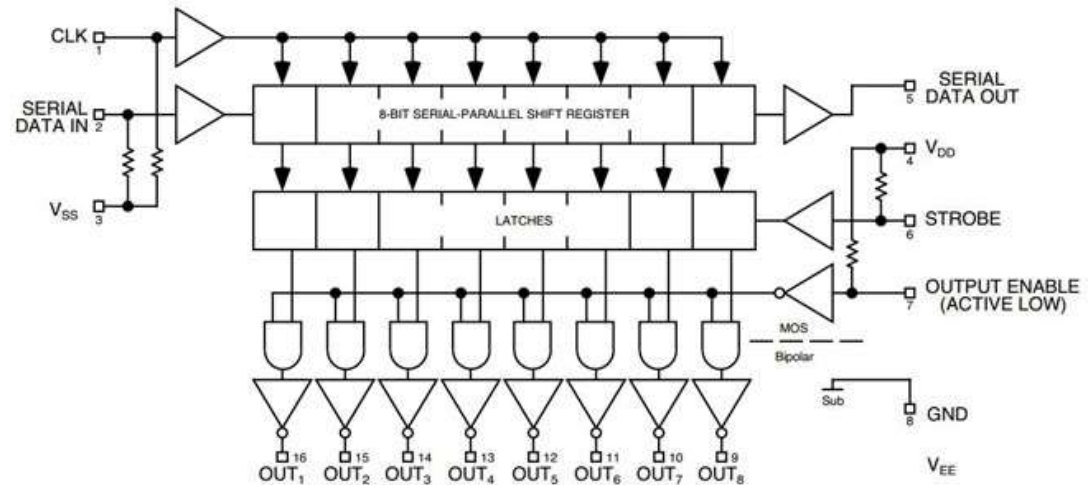
- ◆ 3.3 MHz Minimum Data-Input Rate
- ◆ Output Current Shutdown (500mA Typical)
- ◆ Under Voltage Lockout
- ◆ Thermal Shutdown
- ◆ Output Fault Flag
- ◆ CMOS, PMOS, NMOS, and TTL Compatible
- ◆ Internal Pull-Up/Pull-Down Resistors
- ◆ Low Power CMOS Logic and Latches
- ◆ High Voltage Current Sink Outputs
- ◆ Output Transient-Protection Diodes
- ◆ Single or Split Supply Operation



MIC5821

8-Bit Serial-Input Latched Drivers

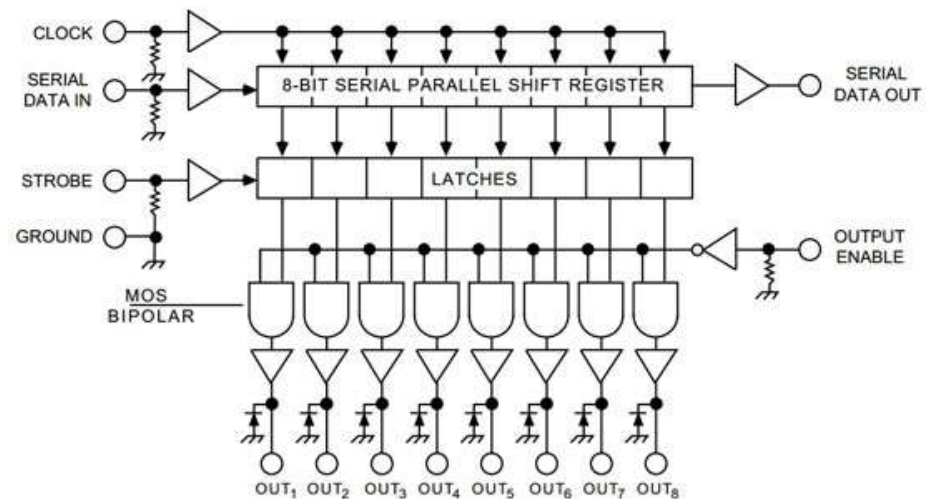
- ◆ 3.3 MHz Minimum Data-Input Rate
- ◆ CMOS, PMOS, NMOS, TTL Compatible
- ◆ Internal Pull-Down or Pull-Up Resistors
- ◆ Low-Power CMOS Logic and Latches
- ◆ High-Voltage Current-Sink Outputs
- ◆ Single or Split Supply Operation



MIC5891

8-Bit Serial-Input Latched Source Driver

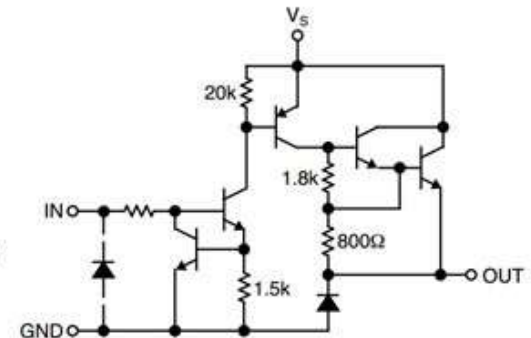
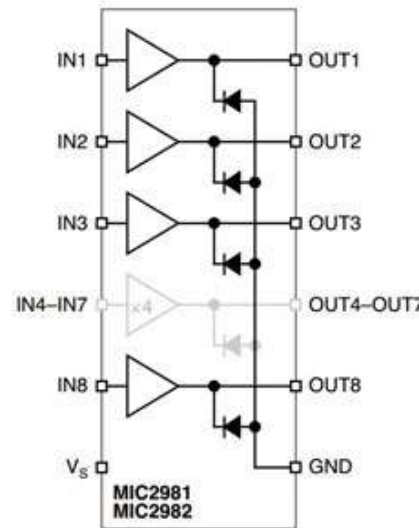
- ◆ High-voltage, high-current outputs
- ◆ Output transient protection diodes
- ◆ CMOS-, PMOS-, NMOS-, and TTL-compatible inputs
- ◆ 5MHz typical data input rate
- ◆ Low-power CMOS latches



MIC2981/2

High-Voltage High-Current Source Driver Array

- ◆ Output voltage to 50V
- ◆ Output current to 500mA
- ◆ Transient-protected outputs
- ◆ Integral clamp diodes
- ◆ TTL-, CMOS-, or PMOS-compatible inputs



Typical MIC2981/2982 Source Driver

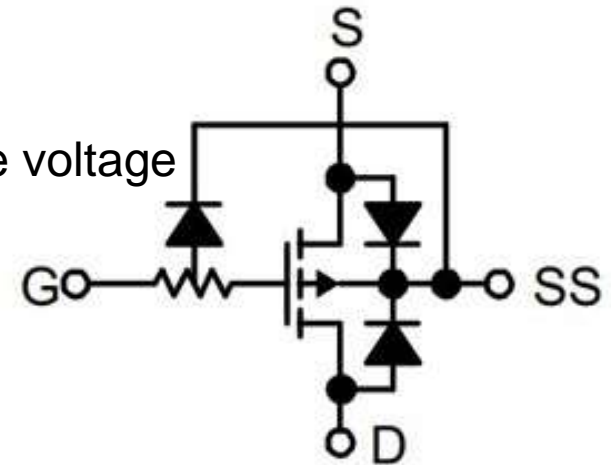




MIC94030/31

TinyFET® P-Channel MOSFET

- ◆ 13.5V minimum drain-to-source breakdown
- ◆ 0.75Ω typical on-resistance at 4.5V gate-to-source voltage
- ◆ 0.45Ω typical on-resistance at 10V gate-to-source voltage
- ◆ Operates with 2.7V gate-to-source voltage
- ◆ Separate substrate connection for added control
- ◆ Industry's smallest surface mount package



MIC94030

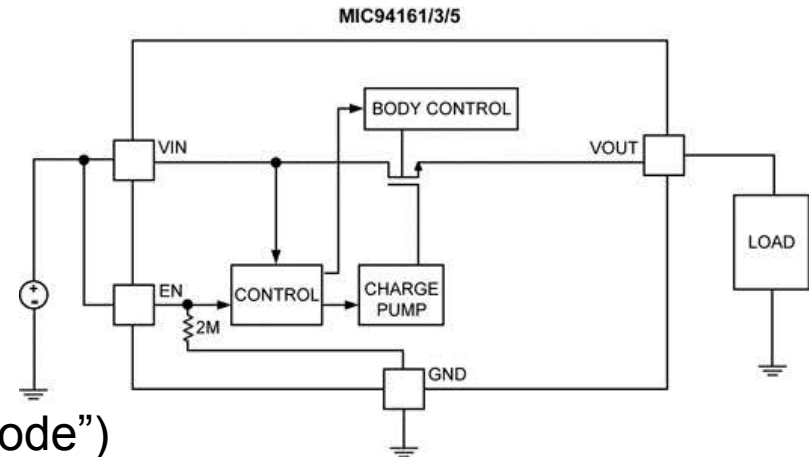




MIC94161/2/3/4/5

3A High-Side Load Switch with Reverse Blocking

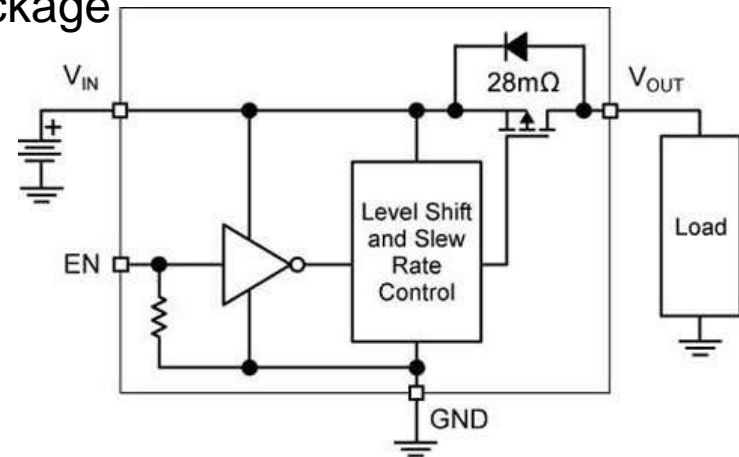
- ◆ 1.5mm × 1mm 6-ball WLCSP package
- ◆ 14.5mΩ $R_{DS(on)}$
- ◆ 1.7V to 5.5V input voltage range
- ◆ 3A continuous operating current
- ◆ Ultra-low quiescent current
- ◆ Reverse current flow blocking (no “body diode”)
- ◆ Internal level shift for CMOS/TTL control logic
- ◆ Micropower shutdown current
- ◆ Soft-start: MIC94161/4/5 (2.7ms)
- ◆ Load discharge circuit: MIC94162/4
- ◆ Ultra-fast turn-off time
- ◆ Junction operating temperature from -40°C to +125°C



MIC94040/1/2/3

28mΩ RDSON 3A High Side Load Switch in 1.2mm x 1.2mm MLF® package

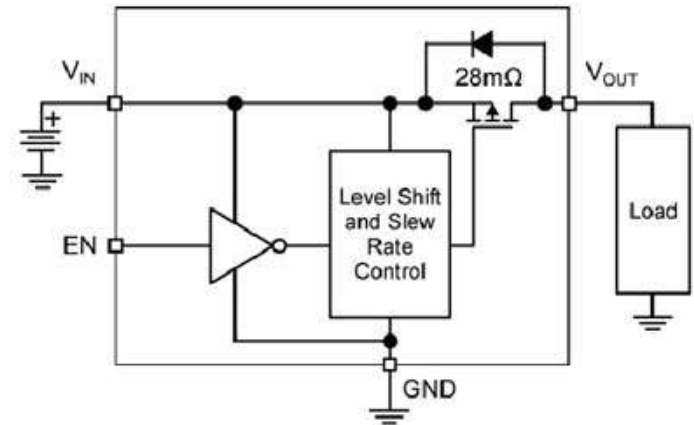
- ◆ 28mΩ $R_{DS(on)}$
- ◆ 3A continuous operating current
- ◆ 1.2mm x 1.2mm space saving 4-pin MLF® package
- ◆ 1.7V to 5.5V input voltage range
- ◆ Internal level shift for CMOS/TTL control logic
- ◆ Ultra low quiescent current
- ◆ Micro-power shutdown current
- ◆ Soft-Start: MIC94042, MIC94043
- ◆ Load discharge circuit: MIC94041, MIC94043
- ◆ Ultra fast turn off time
- ◆ Junction operating temperature from -40°C to +125°C



MIC94044/5

28mΩ RDSON 3A High Side Load Switch in 1.2mm x 1.2mm MLF® Package

- ◆ 28mΩ $R_{DS(on)}$
- ◆ 3A continuous operating current
- ◆ 1.2mm x 1.2mm space saving 4-pin MLF® package
- ◆ 1.7V to 5.5V input voltage range
- ◆ Internal level shift for CMOS/TTL control logic
- ◆ Ultra low quiescent current
- ◆ Micro-power shutdown current
- ◆ Soft-Start: 1ms
- ◆ Load discharge circuit: MIC94045
- ◆ Ultra fast turn off time
- ◆ Junction operating temperature from -40°C to +125°C



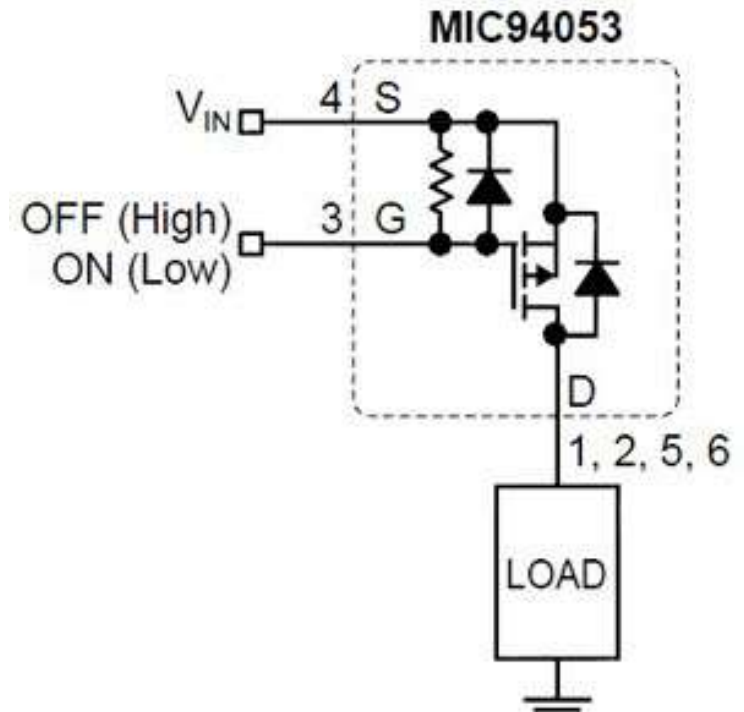
MIC94044 (1ms soft-start)



MIC94052/3

84mW P-Channel MOSFET in SC-70-6

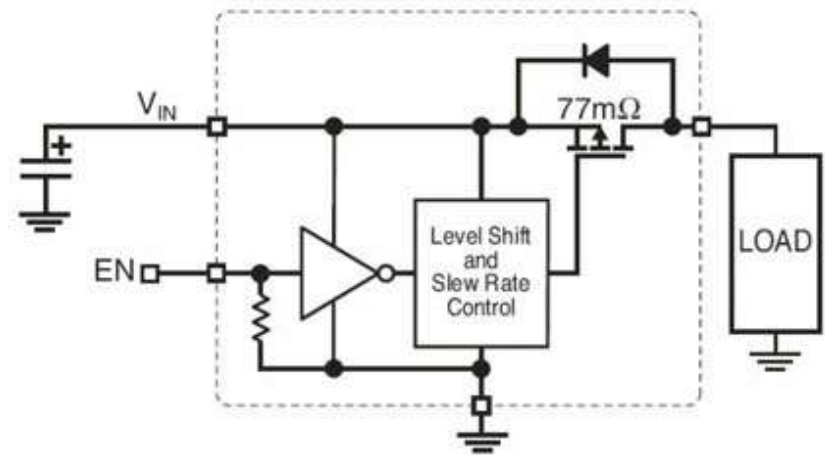
- ◆ 1.8V to 5.5V input voltage range
- ◆ Low on-resistance P-channel MOSFET:
- ◆ 70mΩ at $V_{GS} = 4.5V$ (typ)
- ◆ 2A continuous current
- ◆ V_{GS} pull-up resistor (MIC94053)
- ◆ Teeny™ SC-70-6 package
- ◆ -40°C to +150°C junction temperature range



MIC94060/1/2/3

High Side Power Switches

- ◆ 1.7V to 5.5V input voltage range
- ◆ 2A continuous operating current
- ◆ 77mΩ (typ) R_{ON}
- ◆ Low 2μA quiescent current
- ◆ Soft-Start: MIC94062-63
- ◆ Micro-power shutdown <1μA
- ◆ Load discharge circuit: MIC94061, MIC94063
- ◆ Space saving 1.2mm x 1.6mm Thin MLF[®] package
- ◆ Built-in level shift for control logic; can be operated by 1.5V logic.



MIC94060, 62
Load Switch Application

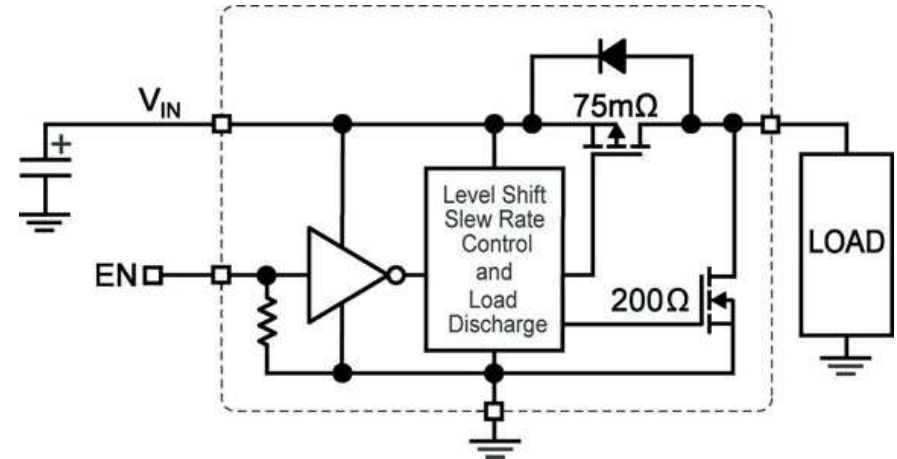




MIC94064/5

High Side Power Switches

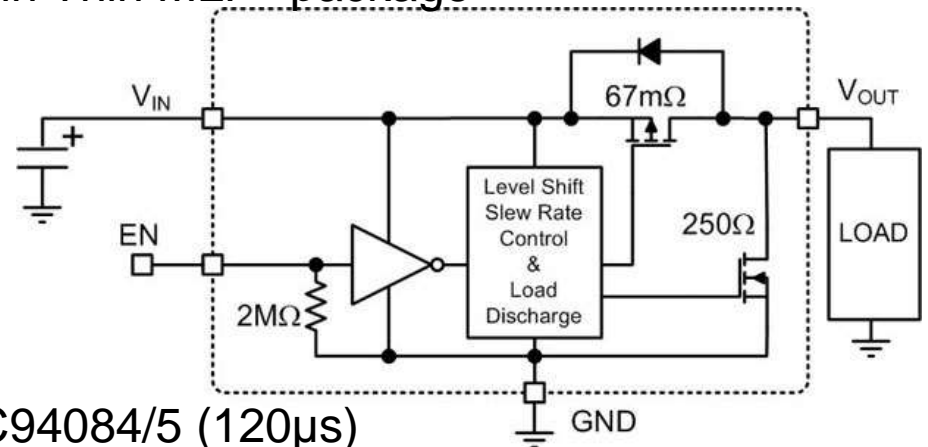
- ◆ 1.7V to 5.5V input voltage range
- ◆ 2A continuous operating current
- ◆ 77mΩ (typ) $R_{DS(on)}$
- ◆ Low 2μA quiescent current
- ◆ Soft-Start: 115μs
- ◆ Micro-power shutdown <1μA
- ◆ Load discharge circuit: MIC94065
- ◆ Built-in level shift for control logic; can be operated by 1.5V logic
- ◆ Space saving 1.2mm x 1.6mm Thin MLF[®] package



MIC94080/1/2/3/4/5

67mΩ RDSON 2A High Side Load Switch in 0.85mm x 0.85mm Thin MLF® package

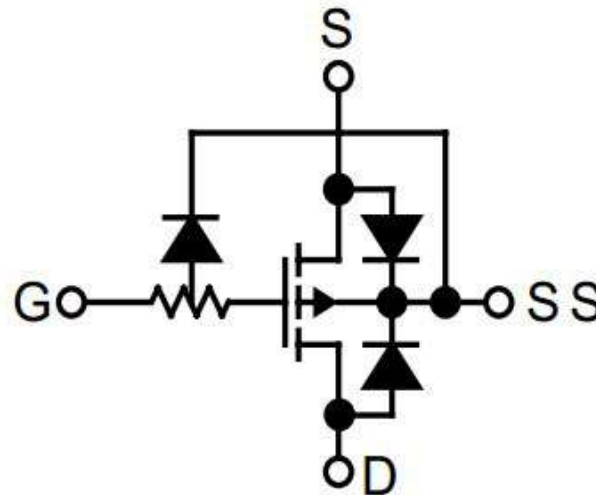
- ◆ 0.85mm x 0.85mm space saving 4-pin Thin MLF® package
- ◆ 1.7V to 5.5V input voltage range
- ◆ 2A continuous operating current
- ◆ 67mΩ $R_{DS(on)}$
- ◆ Ultra low quiescent current
- ◆ Micro-power shutdown current
- ◆ Soft-Start: MIC94082/3 (800μs), MIC94084/5 (120μs)
- ◆ Load discharge circuit: MIC94081, MIC94083, MIC94085
- ◆ Ultra fast turn off time
- ◆ Internal level shift for CMOS/TTL control logic
- ◆ Junction operating temperature from -40°C to +125°C



MIC94050/1

4-Terminal TinyFET® P-Channel MOSFET

- ◆ 0.125Ω typical on-resistance at 4.5V gate-to-source voltage
- ◆ Operates with 1.8V gate-to-source voltage
- ◆ Separate substrate connection allows reverse-blocking



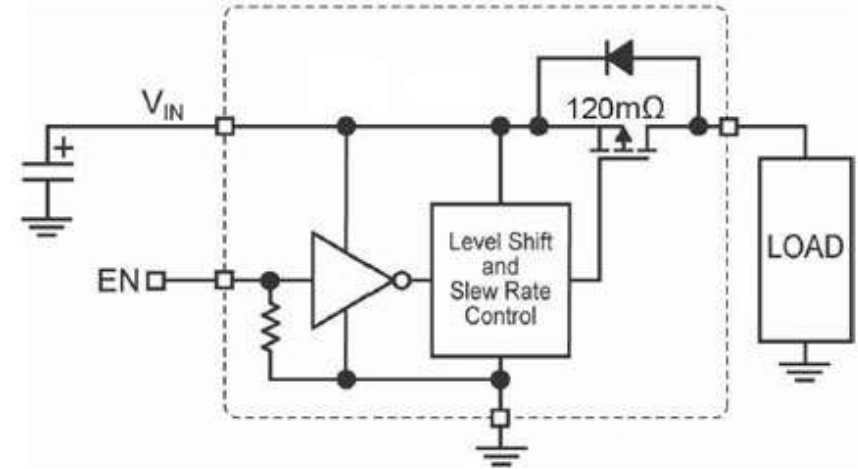
MIC94050



MIC94070/1/2/3

High Side Power Switches

- ◆ 1.7V to 5.5V input voltage range
- ◆ 1.2A continuous operating current
- ◆ 3A pulse current
- ◆ 120mΩ $R_{DS(on)}$ (typical)
- ◆ Low 2μA quiescent current
- ◆ Soft-Start: MIC94072/73
- ◆ Micro-power shutdown <1μA
- ◆ Load discharge circuit: MIC94071, MIC94073
- ◆ Built-in level shift for control logic; can be operated by 1.5V logic
- ◆ Space saving 1.2mm x 1.6mm Thin MLF® package



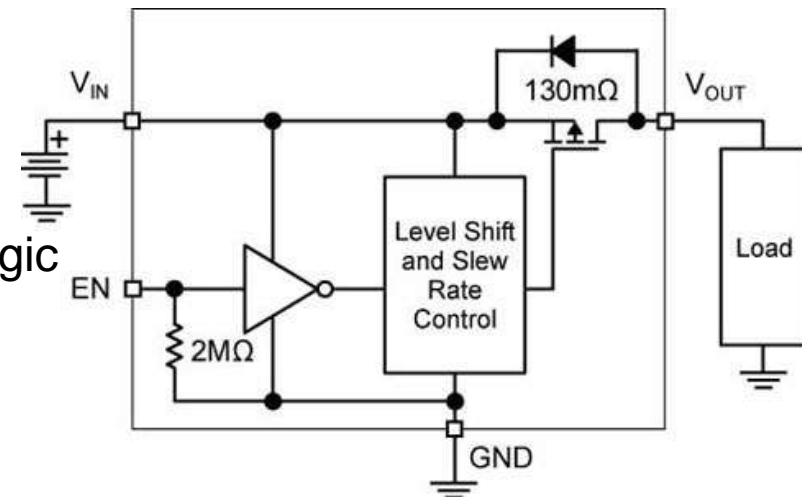
MIC94070, 72
Load Switch Application



MIC94090/1/2/3/4/5

High Side Load Switches for Consumer Applications

- ◆ 1.7V to 5.5V input voltage range
- ◆ 1.2A continuous operating current
- ◆ 130mΩ $R_{DS(ON)}$
- ◆ Internal level shift for CMOS/TTL control logic
- ◆ Ultra low quiescent current
- ◆ Micro-power shutdown current
- ◆ Rapid turn-on: MIC94090/1
- ◆ Soft-Start: MIC94092/3 (790μs), MIC94094/5 (120μs)
- ◆ Load discharge circuit: MIC94091/3/5
- ◆ Space saving and thermally capable 1.2mm x 1.2mm Thin MLF® package
- ◆ Industry standard SC-70-6 package

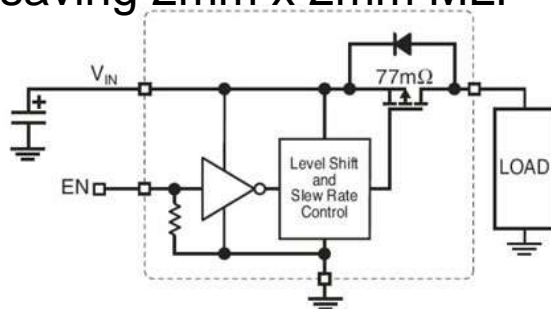




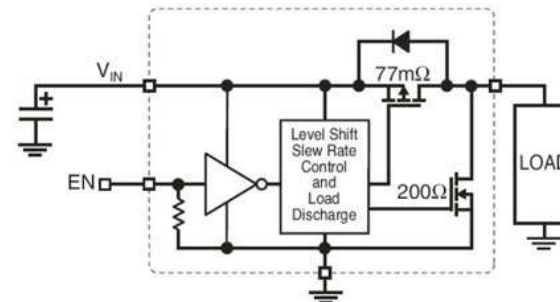
MIC94066/7/8/9

Dual High Side Power Switches

- ◆ 1.7V to 5.5V input voltage range
- ◆ 2A continuous operating current
- ◆ 85mΩ (typ) R_{ON}
- ◆ Built-in level shift for control logic; can be operated by 1.5V logic
- ◆ Low 2μA quiescent current
- ◆ Soft-Start: MIC94068-69
- ◆ Micro-power shutdown <1μA
- ◆ Load discharge circuit: MIC94067, MIC94069
- ◆ Space saving 2mm x 2mm MLF®



½ MIC94066, 68
Load Switch Application



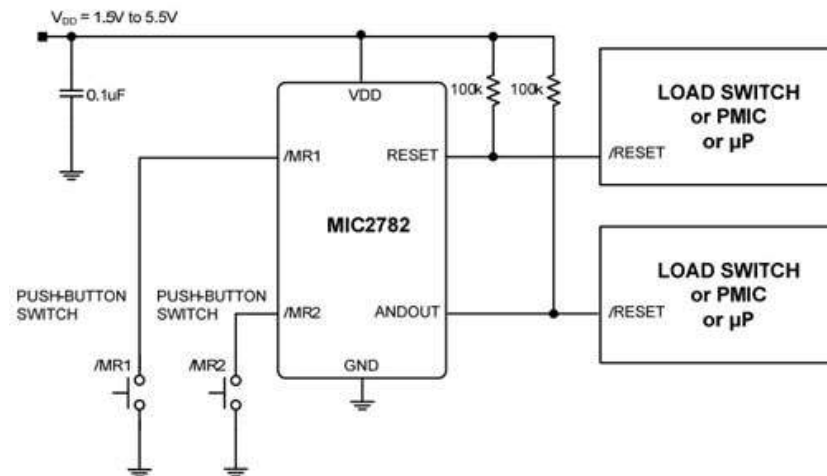
½ MIC94067, 69
Load Switch with Capacitive Load Discharge



MIC2782

Dual-Input Push Button Reset IC with Immediate and Delayed Outputs

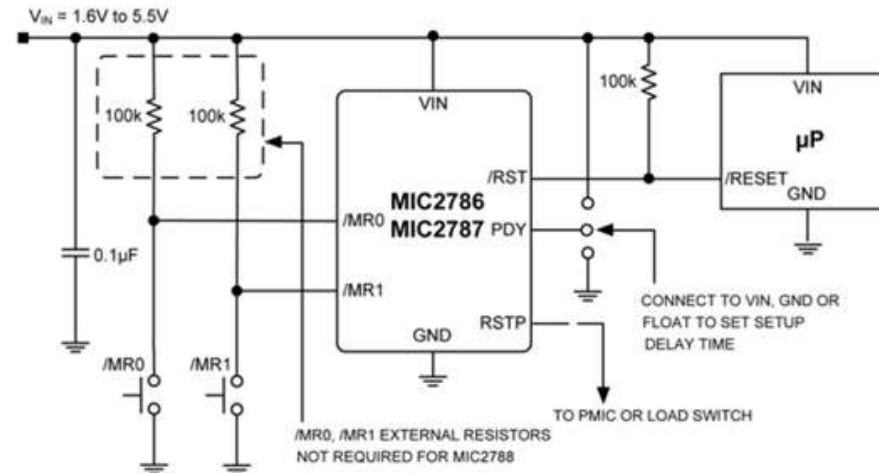
- ◆ 1.5V to 5.5V Operating Supply Voltage Range
- ◆ 2.2 μ A Supply Current with /MR1, /MR2 not asserted
- ◆ Factory programmed setup periods of 6s, 8s, 10s, or 12s
- ◆ Factory programmed reset timeout periods of 0.5s, 1s, or 2s
- ◆ Integrated 65k Ω /MR1 and /MR2 Pull-Up Resistors
- ◆ RESET asserts after /MR1 and /MR2 are asserted low for a setup period
- ◆ ANDOUT asserts after /MR1 and /MR2 are asserted low for a debounce time (1.5ms)



MIC2786/7

Push Button Reset IC with Voltage Supervisor

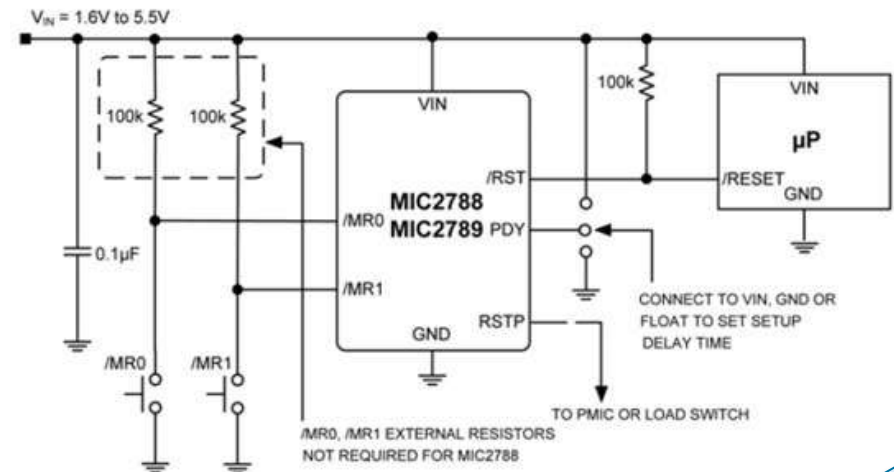
- ◆ 7.4 μ A Supply Current when /MR0, /MR1 not asserted
- ◆ 1.66V to 4.63V preset voltage threshold options
- ◆ 2.5% voltage threshold accuracy over temperature
- ◆ Integrated /MR0, /MR1 pull-up resistors (MIC2786)
- ◆ Dual reset outputs:
 - Open-drain, active-low reset output (/RST)
 - Push-pull, active-high reset output (RSTP)
- ◆ 8-pin 2mm x 2mm x 0.55mm Thin MLF[®] package



MIC2788/9

Push Button Reset IC

- ◆ 1.6V to 5.5V operating voltage
- ◆ 2.9 μ A supply current when /MR0, /MR1 are not asserted
- ◆ Asserting /MR0 and /MR1 for longer than set-up delay asserts reset output for the reset timeout period
- ◆ Programmable delay (PDY) input selects 2.0s, 4.0s, or 6.0s set-up delay
- ◆ Factory-programmed 140ms (min.) or 240ms (min.) reset timeout period
- ◆ Integrated /MR0, /MR1 pull-up resistors (MIC2788)
- ◆ Dual reset outputs:
 - Open-drain active-low reset (/RST) output
 - Push-pull active-high reset (RSTP) output

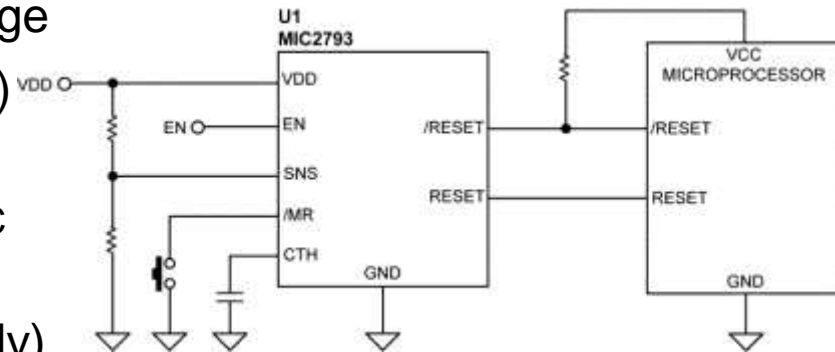


MIC2790/1/3



Supervisor with High-Accuracy, Ultra-Fast Propagation Delay, and Capacitor-Programmable Reset Delay

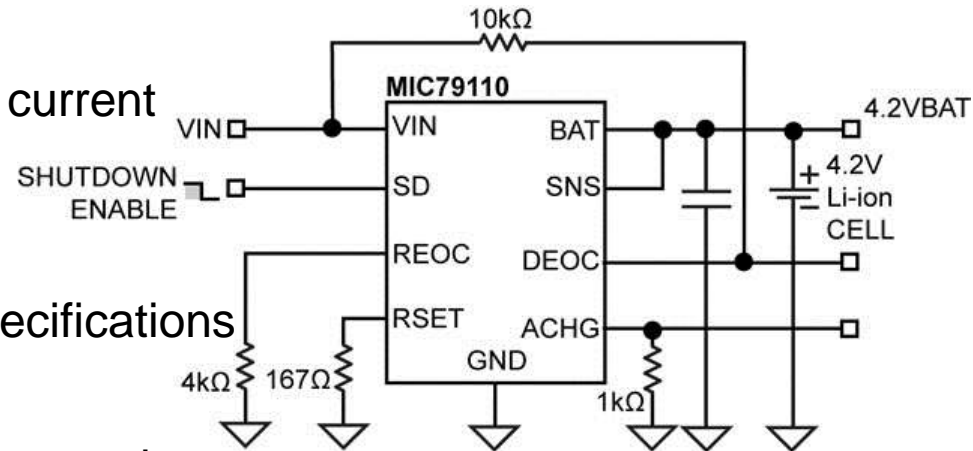
- ◆ 1.5V to 5.5V operating supply voltage range
- ◆ Ultra-fast propagation delay (1 μ s typically)
- ◆ 0.4V reference voltage (SNS pin)
 - $\pm 1.0\%$ threshold accuracy from -40°C to $+125^{\circ}\text{C}$
 - Monitored voltage range from 0.4V to 5.5V
- ◆ Active-high enable input pin (MIC2793 only)
- ◆ The MIC2790/1/3 features multiple output options:
 - Open-drain active-low (/RESET)
 - Push-pull active-low (/RESET)
 - Push-pull active-high (RESET)
- ◆ -40°C to $+125^{\circ}\text{C}$ junction temperature range
- ◆ 6-pin TSOT-23 (MIC2790)
- ◆ 6-pin 2mm \times 2mm Thin DFN (MIC2790)
- ◆ 6-pin 1.6mm \times 1.6mm Thin DFN (MIC2791)
- ◆ 8-pin 2mm \times 2mm Thin DFN (MIC2793)



MIC79110

Simple 1.2A Linear Li-Ion Battery Charger

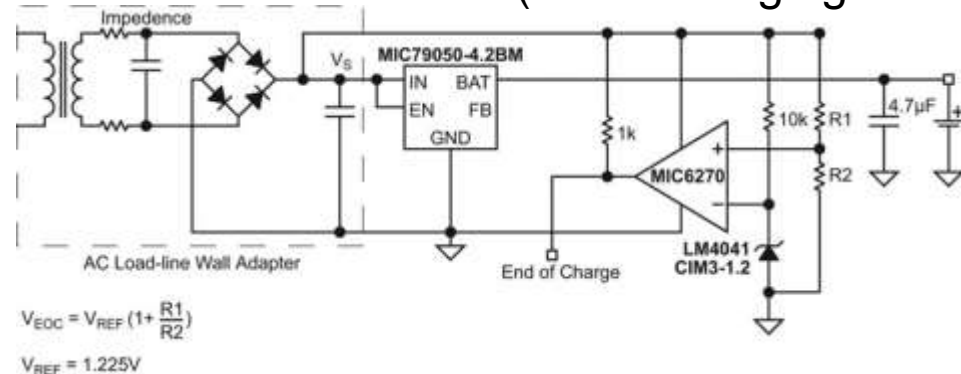
- ◆ Input voltage range: 2.5V to 16V
- ◆ High output voltage accuracy of $\pm 0.75\%$ over -5°C to $+60^{\circ}\text{C}$
- ◆ Current Limit $\pm 5\%$ accurate from $-5^{\circ}\text{C} \leq T_j \leq +125^{\circ}\text{C}$
- ◆ Programmable end-of-charge flag
- ◆ Analog output proportional to output current
- ◆ Adjustable and fixed 4.2V output
- ◆ 1.2A output current
- ◆ Excellent line and load regulation specifications
- ◆ Reverse current and protection
- ◆ Thermal shutdown and current limit protection
- ◆ Tiny 10-pin 3mm x 3mm MLF[®] package
- ◆ Junction temperature range: -40°C to $+125^{\circ}\text{C}$



MIC79050

Simple Lithium-Ion Battery Charger

- ◆ High accuracy charge voltage: $\pm 0.75\%$ over -5°C to $+60^{\circ}\text{C}$ (Li-Ion charging temperature range)
- ◆ Zero off-mode current
- ◆ $10\mu\text{A}$ reverse leakage
- ◆ Ultra-low 380mV dropout at 500mA
- ◆ Wide input voltage range
- ◆ Logic controlled enable input (8-pin devices only)
- ◆ Thermal shutdown and current limit protection
- ◆ Power MSOP-8, Power SOIC-8, and SOT-223
- ◆ Pulse charging capability

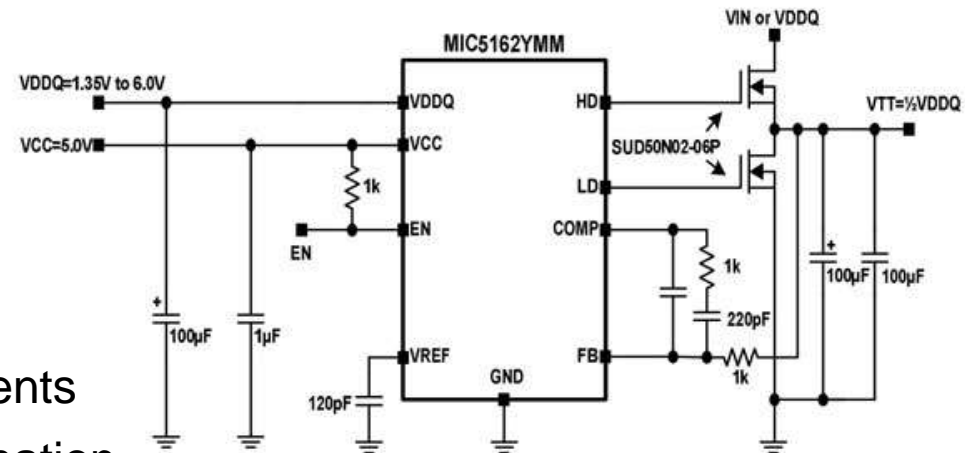


MIC5162



Dual Regulator Controller for DDR3 GDDR3/4/5 Memory and High-Speed Bus Termination

- ◆ Input voltage range: 1.35V to 6V
- ◆ Up to 7A V_{TT} Current
- ◆ Tracking programmable output
- ◆ Wide bandwidth
- ◆ Logic controlled enable input
- ◆ Requires minimal external components
- ◆ DDR, DDR2, DDR3, memory termination
- ◆ $-40^{\circ}\text{C} < T_J < +125^{\circ}\text{C}$
- ◆ JEDEC Compliant Bus termination for SCSI, GTL, SSTL, HSTL, LV-TTL, Rambus, LV-PECL, LV-ECL, etc
- ◆ Tiny MSOP-10 package

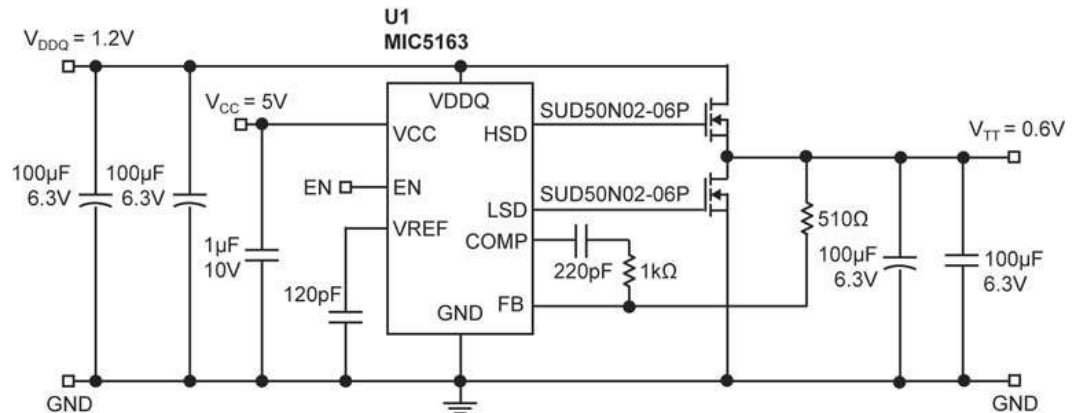




MIC5163

Dual Regulator Controller for DDR3 GDDR3/4/5 Memory Termination

- ◆ 0.75V to 6V input supply voltage
- ◆ Memory termination for: DDR3, GDDR3/4/5
- ◆ Tracking programmable output
- ◆ Logic controlled enable input
- ◆ Wide bandwidth
- ◆ Minimal external components required
- ◆ Tiny MSOP-10 package
- ◆ $-40^{\circ}\text{C} < T_J < +125^{\circ}\text{C}$

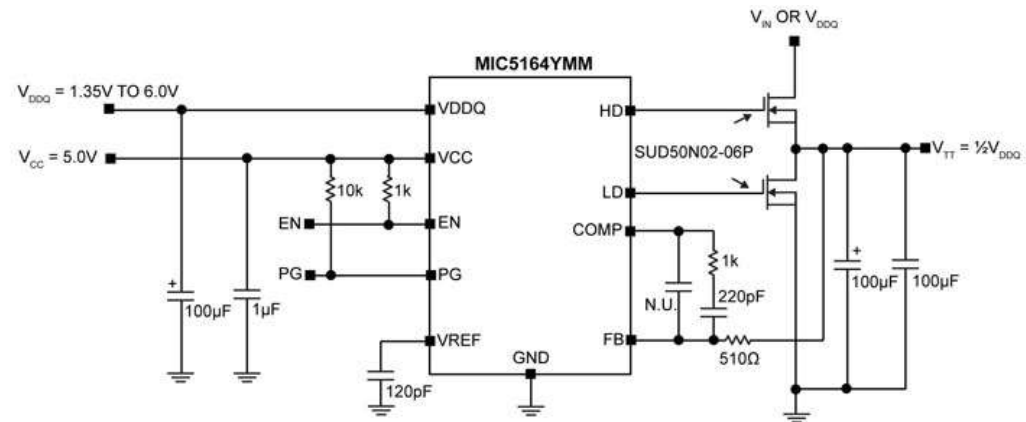


MIC5164



Dual Regulator Controller for DDR3 GDDR3/4/5 Memory and High-Speed Bus Termination

- ◆ Input voltage range: 1.35V to 6V
- ◆ Up to 7A V_{TT} Current
- ◆ Tracking programmable output
- ◆ Power Good (PG) signal
- ◆ Wide bandwidth
- ◆ Logic controlled enable input
- ◆ Requires minimal external components
- ◆ DDR, DDR2, DDR3, memory termination
- ◆ $-40^{\circ}\text{C} < T_J < +125^{\circ}\text{C}$
- ◆ JEDEC-compliant bus termination for SCSI, GTL, SSTL, HSTL, LV-TTL, Rambus, LV-PECL, LV-ECL, etc
- ◆ Tiny MSOP-10 package

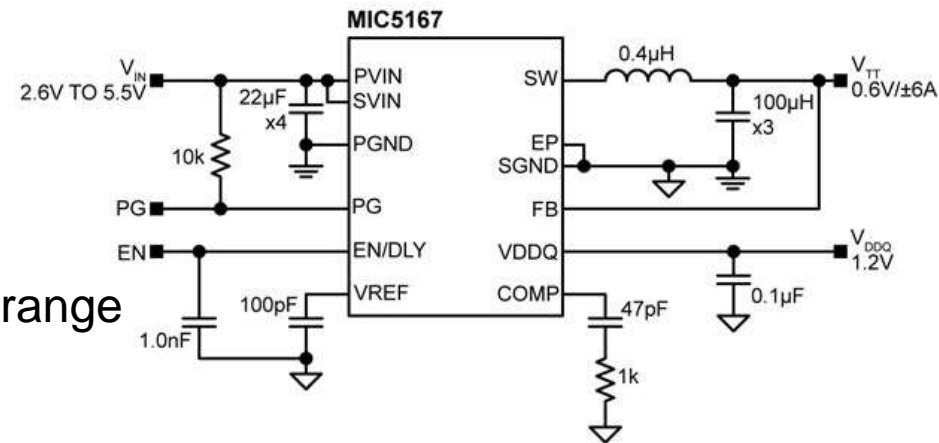


MIC5167



1MHz, 6A Integrated Switch High-Efficiency Synchronous Buck DDR Memory Terminator

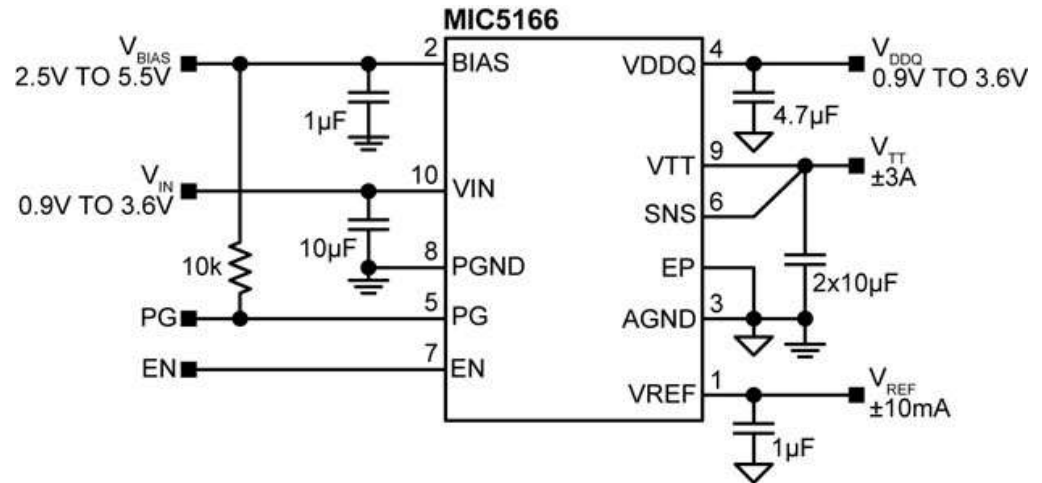
- ◆ Input voltage range: 2.6V to 5.5V
- ◆ V_{TT} voltage adjustable down to 0.35V
- ◆ Output load current up to $\pm 6A$
- ◆ Power Good fault flag
- ◆ Efficiency > 94% across a broad load range
- ◆ Ultra fast transient response
- ◆ Easy RC compensation
- ◆ 100% maximum duty cycle
- ◆ Fully integrated MOSFET switches
- ◆ Micropower shutdown
- ◆ Thermal shutdown and current-limit protection
- ◆ 24-pin 4mm x 4mm MLF[®]
- ◆ -40°C to +125°C junction temperature range



MIC5166

3A High-Speed Low VIN DDR Terminator

- ◆ Operating voltage range:
 - V_{DDQ} Supply: 0.9V to 3.6V
 - Bias Supply: 2.5V to 5.5V
- ◆ High output voltage accuracy:
 - 0.015% line regulation
 - 1.5% load regulation
- ◆ Logic level enable input
- ◆ Power Good (PG)
- ◆ High bandwidth – very fast transient response
- ◆ Stable with two 10 μ F ceramic output capacitors
- ◆ Two 10 μ F output capacitors used in most applications
- ◆ Thermally enhanced 3mm \times 3mm MLF[®]
- ◆ Junction temperature range -40°C to $+125^{\circ}\text{C}$

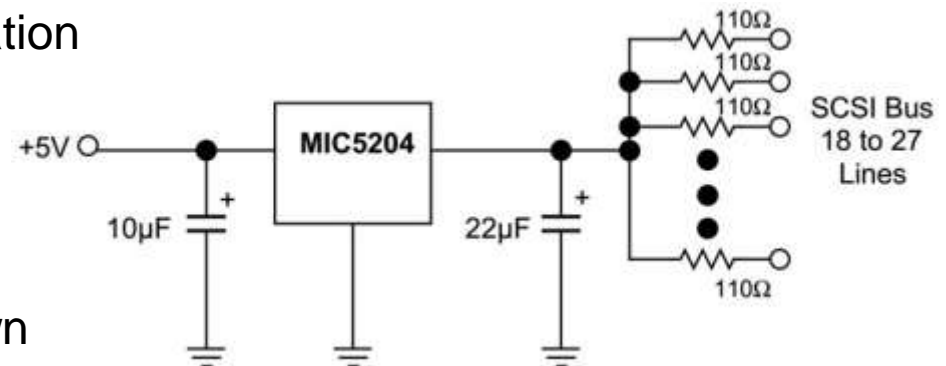




MIC5204

SCSI-II Active Terminator

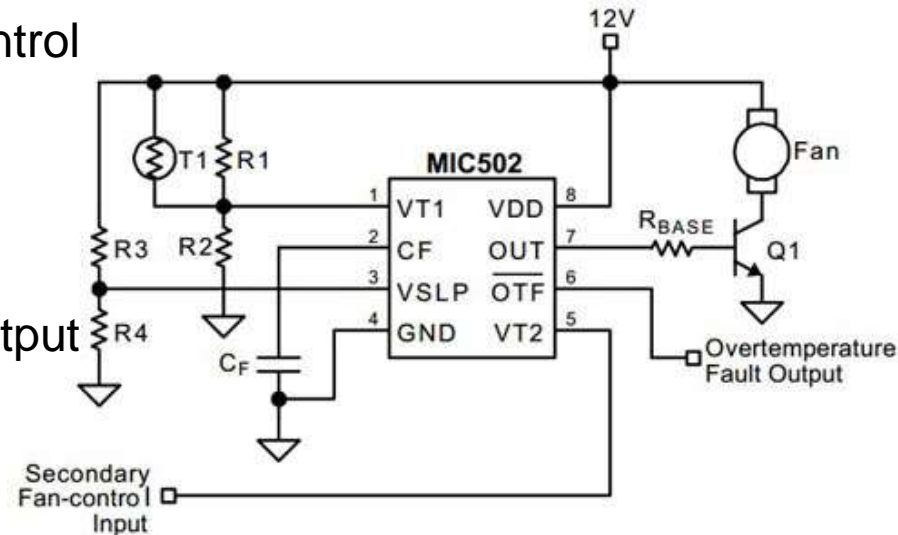
- ◆ $\pm 1\%$ output voltage accuracy
- ◆ Guaranteed 500mA output
- ◆ Low quiescent current
- ◆ Low dropout voltage
- ◆ Extremely tight load and line regulation
- ◆ Very low temperature coefficient
- ◆ Current and thermal limiting
- ◆ Zero off-mode current
- ◆ Logic-controlled electronic shutdown
- ◆ Available in SO-8 and SOT-223 packages



MIC502

Fan Management IC

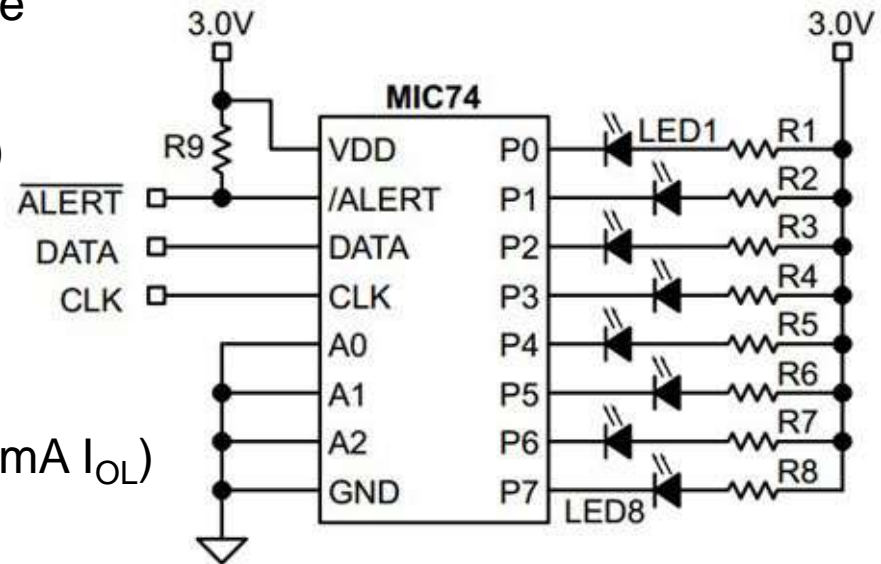
- ◆ Temperature-proportional fan speed control
- ◆ Low-cost, efficient PWM fan drive
- ◆ 4.5V to 13.2V IC supply range
- ◆ Controls any voltage fan
- ◆ Overtemperature detection with fault output
- ◆ Integrated fan startup timer
- ◆ Automatic user-specified sleep mode
- ◆ Supports low-cost NTC/PTC thermistors
- ◆ 8-pin DIP and SOIC packages



MIC74

2-Wire Serial I/O Expander and Fan Controller

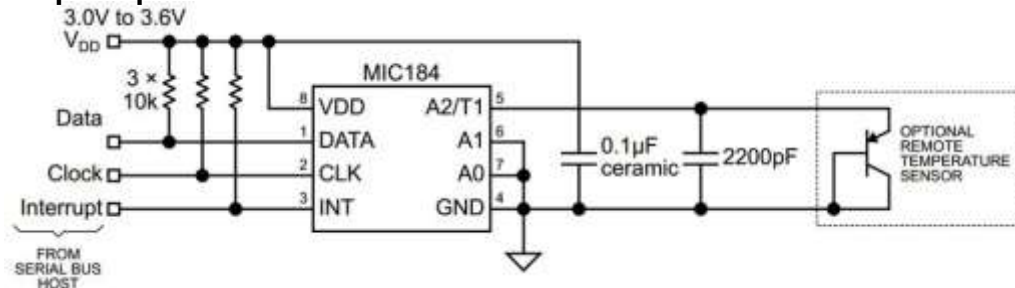
- ◆ Provides eight bits of general purpose I/O
- ◆ Built in fan speed control logic (optional)
- ◆ 2-wire SMBus™/I2C™ compatible serial interface plus interrupt output
- ◆ 2.7V to 3.6V operating voltage range
- ◆ 5V-tolerant I/O
- ◆ Low quiescent current: 2μA (typical)
- ◆ Bit-programmable I/O options:
 - Input or output
 - Push-pull or open-drain output
 - Interrupt on input changes
- ◆ Outputs can directly drive LEDs (10mA I_{OL})
- ◆ Up to 8 devices per bus



MIC184

Local/Remote Thermal Supervisor

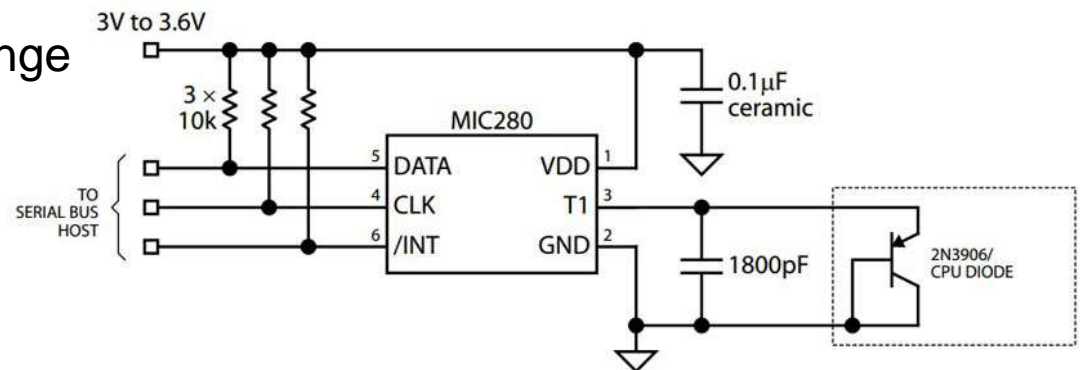
- ◆ Measures local and remote temperatures
- ◆ Pin and software backward compatible to LM75
- ◆ 9-bit sigma-delta ADC
- ◆ 2-wire I2C/SMBus compatible interface
- ◆ Programmable thermostatic settings for either internal or external zone
- ◆ Open-drain comparator/interrupt output pin
- ◆ Interrupt mask and status bits
- ◆ Low-power shutdown mode
- ◆ Fail-safe response to diode faults
- ◆ 2.7V to 5.5V power supply range
- ◆ 8-Lead SOP and MSOP Packages



MIC280

Precision IttyBitty™ Thermal Supervisor

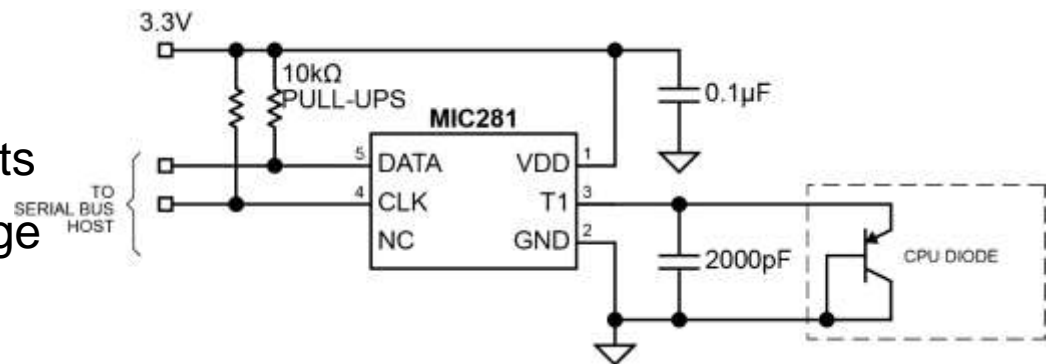
- ◆ Measures local and remote temperature
- ◆ Highly accurate remote sensing $\pm 1^\circ\text{C}$ max., 60°C to 100°C
- ◆ Superior noise immunity for reduced temperature guardbands
- ◆ 9-bit to 12-bit temperature resolution for remote zone
- ◆ Fault queues to further reduce nuisance tripping
- ◆ Programmable high, low, and over-temperature thresholds for each zone
- ◆ SMBus 2.0 compatible serial interface including device timeout to prevent bus lockup
- ◆ 3.0V to 3.6V power supply range
- ◆ IttyBitty® SOT23-6 package



MIC281

Low-Cost IttyBitty® Thermal Sensor

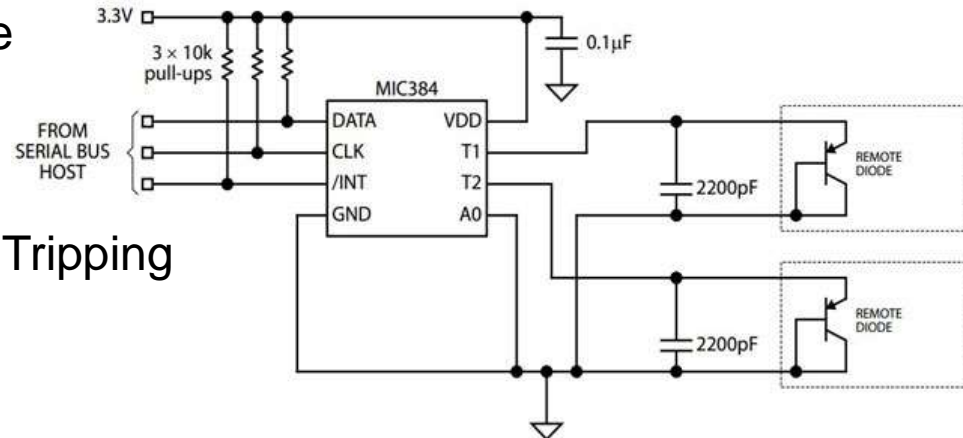
- ◆ Remote temperature measurement using embedded thermal diodes or commodity transistors
- ◆ Accurate remote sensing $\pm 3^{\circ}\text{C}$ max., 0°C to 100°C
- ◆ Excellent noise rejection
- ◆ I2C and SMBus 2.0 compatible serial interface
- ◆ SMBus timeout to prevent bus lockup
- ◆ Voltage tolerant I/Os
- ◆ Low power shutdown mode
- ◆ Failsafe response to diode faults
- ◆ 3.0V to 3.6V power supply range
- ◆ IttyBitty® SOT23-6 Package



MIC384

Three-Zone Thermal Supervisor

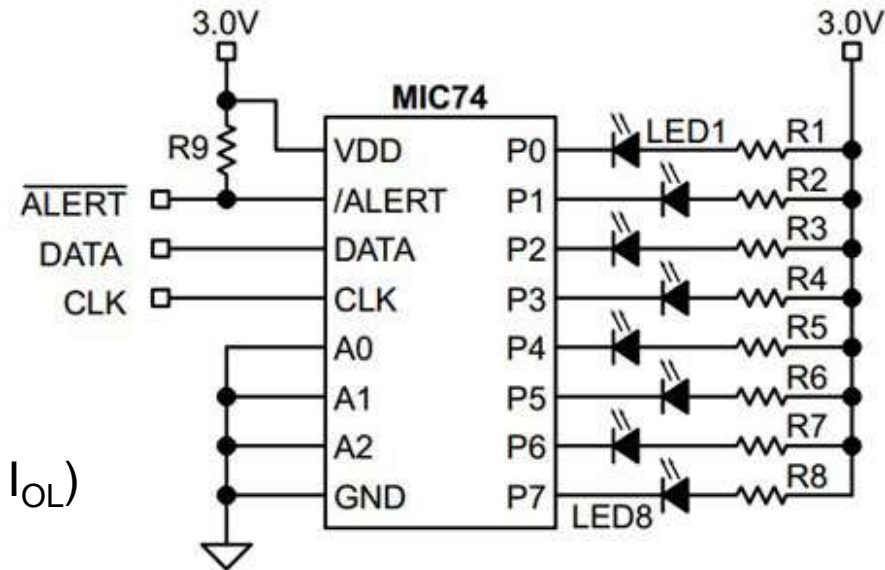
- ◆ Measures Local and Two Remote Temperatures
- ◆ 2-Wire SMBus-compatible Interface
- ◆ Open-Drain Interrupt Output Pin
- ◆ Interrupt Mask and Status Bits
- ◆ Fault Queues to Prevent Nuisance Tripping
- ◆ Low Power Shutdown Mode
- ◆ Failsafe response to diode faults
- ◆ 2.7V to 5.5V Power Supply Range
- ◆ Programmable Thermostat Settings for All Three Zones
- ◆ 8-Lead SOIC and MSOP Packages



MIC74

2-Wire Serial I/O Expander and Fan Controller

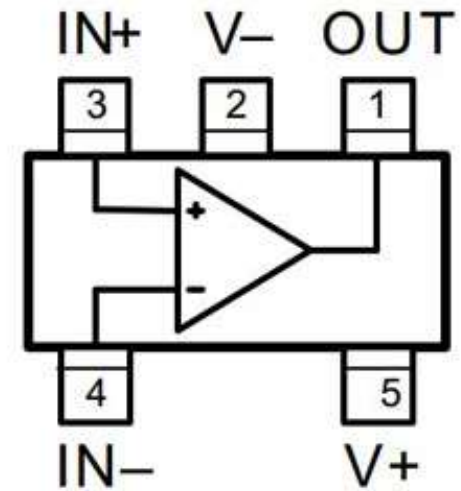
- ◆ Provides eight bits of general purpose I/O
- ◆ Built in fan speed control logic (optional)
- ◆ 2-wire SMBus™/I2C™ compatible serial interface plus interrupt output
- ◆ 2.7V to 3.6V operating voltage range
- ◆ 5V-tolerant I/O
- ◆ Low quiescent current: 2μA (typical)
- ◆ Bit-programmable I/O options:
 - Input or output
 - Push-pull or open-drain output
 - Interrupt on input changes
- ◆ Outputs can directly drive LEDs (10mA I_{OL})
- ◆ Up to 8 devices per bus



MIC6270

IttyBitty® Comparator

- ◆ 2V to 36V supply
- ◆ 300μA supply current independent of supply
- ◆ 25nA input bias current
- ◆ ±5nA input offset current
- ◆ ±3mV input offset voltage
- ◆ Input common-mode voltage range includes ground
- ◆ 250mV at 4mA output saturation voltage
- ◆ Differential input voltage range equal to the power supply voltage
- ◆ Output compatible with TTL, DTL, ECL, MOS, and CMOS logic



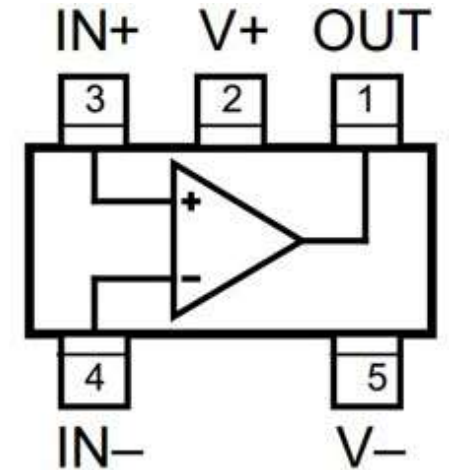
5-Pin SOT-23 (M5)



MIC7211/21

IttyBitty® Rail-to-Rail Input Comparator

- ◆ Small footprint SOT-23-5 package
- ◆ Guaranteed performance at 2.2V, 2.7V, 5V, and 10V
- ◆ 7 μ A typical supply current at 5V
- ◆ <5 μ s response time at 5V
- ◆ Push-pull output (MIC7211)
- ◆ Open-drain output (MIC7221)
- ◆ Input voltage range may exceed supply voltage by 0.3V
- ◆ >100mA typical sink or source



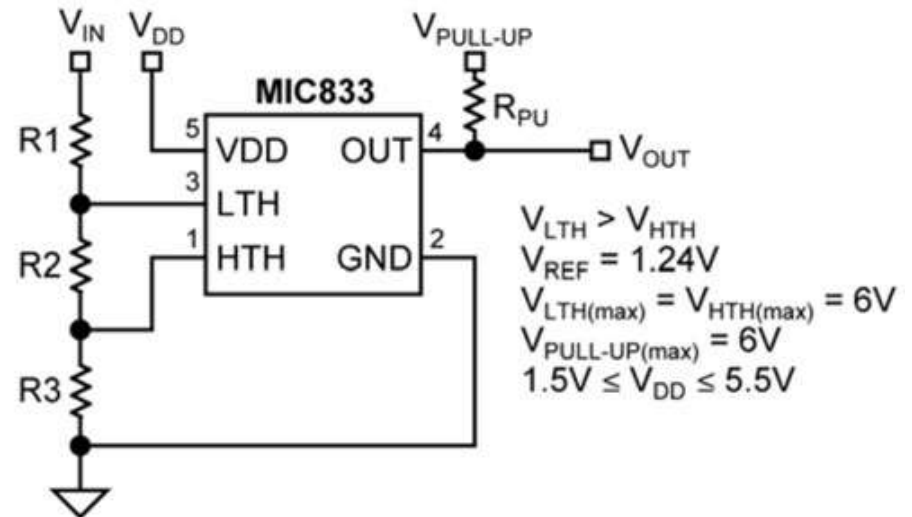
SOT-23-5 (M5)



MIC833

Comparator and Reference with Adj. Hysteresis

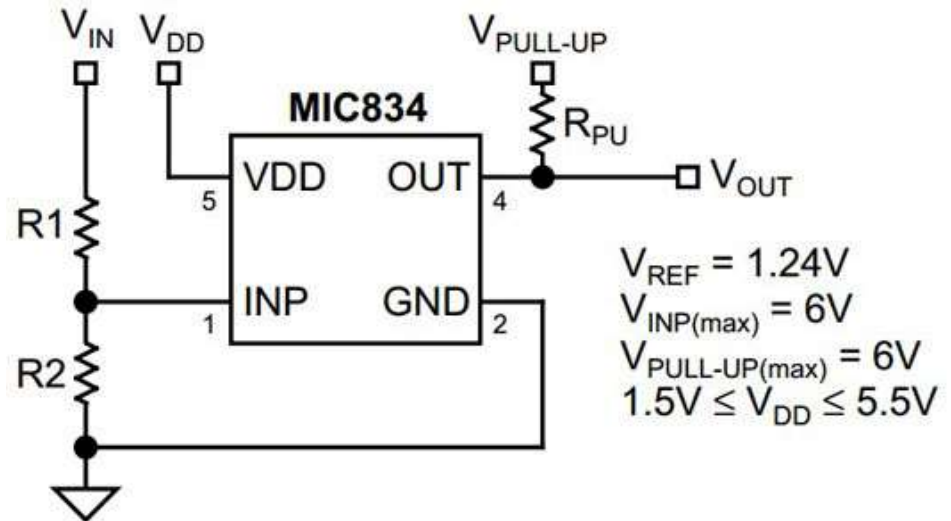
- ◆ Optimized for PDAs, cellular telephones, pagers, and other battery-powered devices
- ◆ Inputs and output can be pulled up to 6V regardless of supply voltage
- ◆ Independently adjustable high- and low-voltage thresholds
- ◆ High $\pm 1.5\%$ voltage threshold accuracy
- ◆ Extremely low $1\mu\text{A}$ typical supply current
- ◆ Immune to brief input transients
- ◆ 5-lead SOT-23 package



MIC834

Comparator with Reference

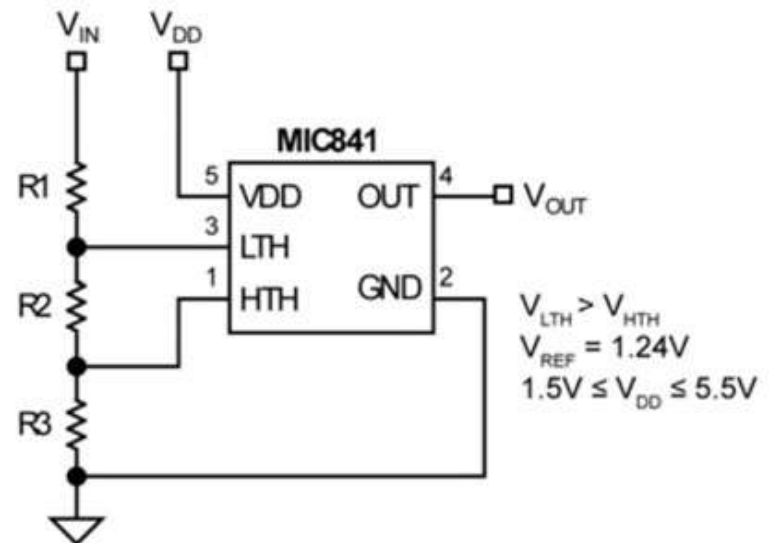
- ◆ Optimized for PDAs, cellular telephones, pagers, and other battery-powered devices
- ◆ Input and output can be pulled up to 6V regardless of supply voltage
- ◆ High $\pm 1.5\%$ voltage threshold accuracy
- ◆ Built in hysteresis for noise suppression
- ◆ Extremely low $1.5\mu\text{A}$ typical supply current
- ◆ Immune to brief input transients
- ◆ 5-lead SOT-23 package



MIC841/2

Comparator with 1.25% Reference and Adjustable Hysteresis

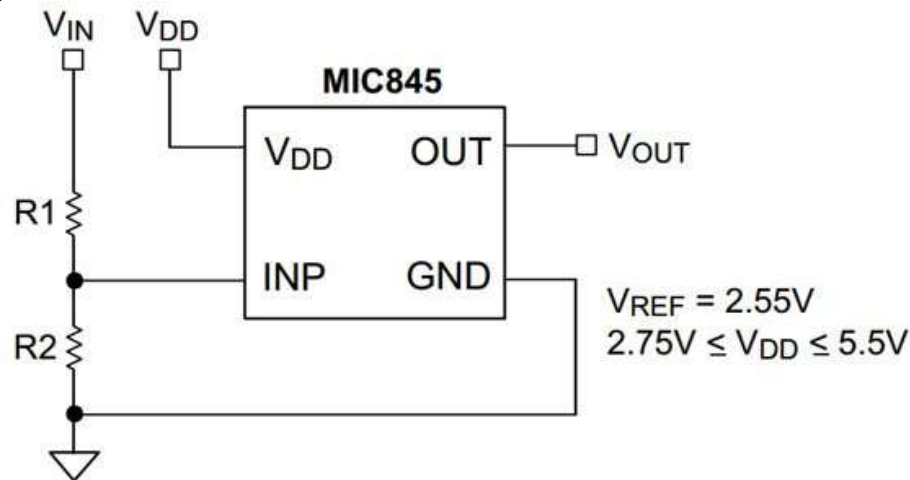
- ◆ 1.5V to 5.5V operating range
- ◆ 1.5 μ A typical supply current
- ◆ $\pm 1.25\%$ voltage threshold accuracy
- ◆ 10nA maximum input leakage current over temperature
- ◆ Externally adjustable hysteresis (MIC841)
- ◆ Internal 20mV hysteresis (MIC842)
- ◆ Output options
 - Push-pull, active high
 - Push-pull, active low
 - Open drain, active low
- ◆ Immune to brief input transients
- ◆ Teeny™ 5-pin SC-70 package
- ◆ 6-pin 1.6mm x 1.6mm TDFN (MIC841)
- ◆ 4-pin 1.2mm x 1.6mm TDFN (MIC842)



MIC845

Micro-Power Comparator / Battery Monitor

- ◆ Extremely low $1\mu\text{A}$ supply current (typical)
- ◆ 2.55V on chip reference
- ◆ $\pm 2\%$ voltage threshold accuracy
- ◆ Optimized for PDAs, cellular telephones, pagers, and other battery-powered devices
- ◆ Open-drain output can be pulled up to 6V regardless of supply voltage
- ◆ 5-lead SC-70 package

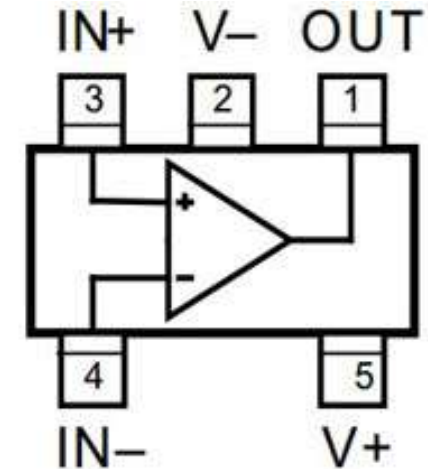




MIC6211

IttyBitty® Operational Amplifier

- ◆ 4V to 32V operation
- ◆ Small footprint package
- ◆ Unity gain stable
- ◆ 2.5 MHz unity gain bandwidth
- ◆ 6V/ μ s typical slew rate
- ◆ Short circuit protected



SOT-23-5 (M5)

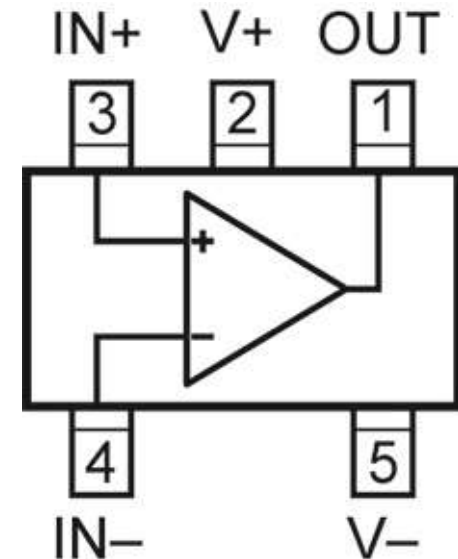




MIC910

135MHz Low-Power SOT-23-5 Op Amp

- ◆ 135MHz gain bandwidth product
- ◆ 2.4mA supply current
- ◆ Unconditionally unity-gain stable
- ◆ SOT-23-5 package
- ◆ 270V/ μ s slew rate
- ◆ Drives any capacitive load

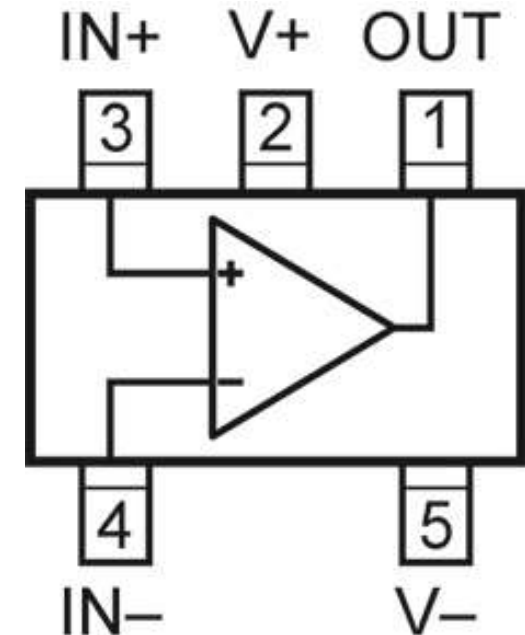




MIC911

105MHz Low-Power SOT23-5 Op Amp

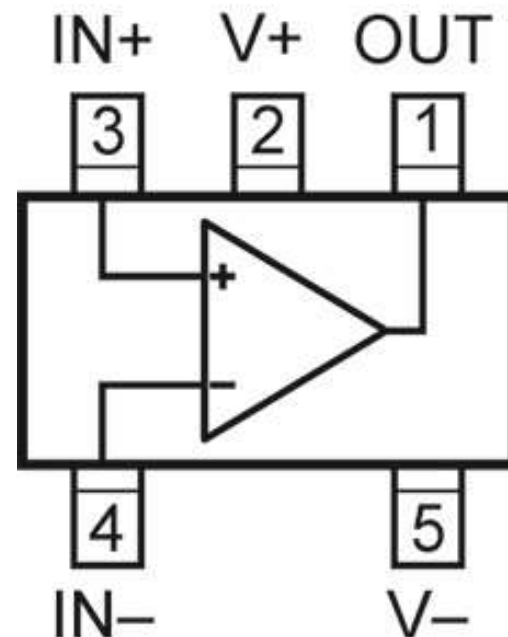
- ◆ 05MHz gain bandwidth product
- ◆ 1.25mA supply current
- ◆ Unconditionally unity gain stable
- ◆ Drives any capacitive load
- ◆ SOT23-5 package
- ◆ 120V/ μ s slew rate
- ◆ 112dB CMRR



MIC912

200MHz Low-Power SOT23-5 Op Amp

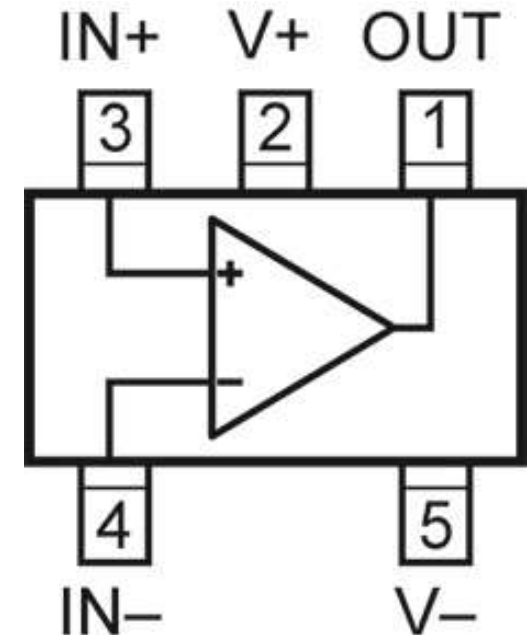
- ◆ 200MHz gain bandwidth product
- ◆ 2.4mA supply current
- ◆ SOT23-5 package
- ◆ 360V/ μ s slew rate
- ◆ Drives any capacitive load
- ◆ Unconditionally stable with gain of +2 or -1
- ◆ Conditionally stable with gain of +1



MIC913

350MHz Low-Power SOT23-5 Op Amp

- ◆ 350MHz gain bandwidth product
- ◆ 4.2mA supply current
- ◆ SOT23-5 package
- ◆ 500V/ μ s slew rate
- ◆ Drives any capacitive load
- ◆ Stable with gain of +2 or -1
- ◆ Low distortion

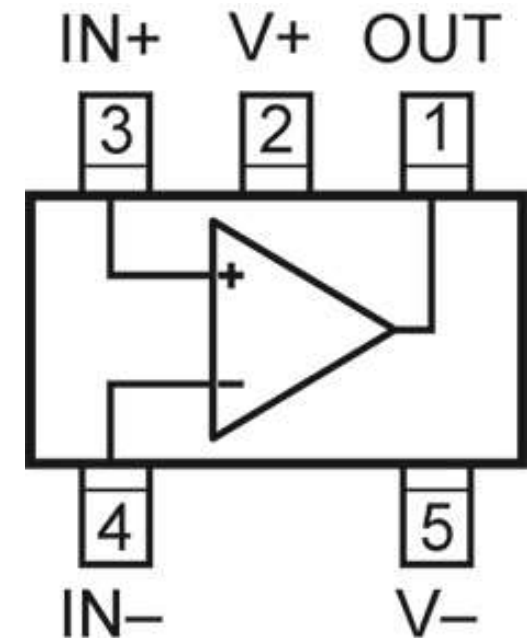




MIC914

160MHz Low-Power SOT23-5 Op Amp

- ◆ 160MHz gain bandwidth product
- ◆ 1.25mA supply current
- ◆ SOT23-5 package
- ◆ 160V/ μ s slew rate
- ◆ Drives any capacitive load
- ◆ 112dB CMRR
- ◆ Unconditionally stable with gain of +2 or -1
- ◆ Conditionally stable with gain of +1

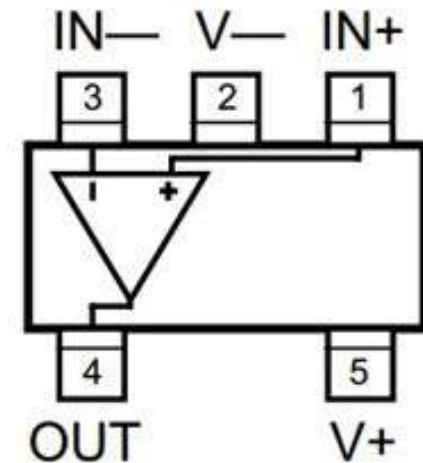




MIC918

51MHz Low-Power SOT-23-5/SC-70 Op Amp

- ◆ 51MHz gain bandwidth product
- ◆ 550 μ A supply current
- ◆ SOT-23-5 or SC-70 packages
- ◆ 1500V/ μ s slew rate
- ◆ Drives any capacitive load
- ◆ Unity gain stable



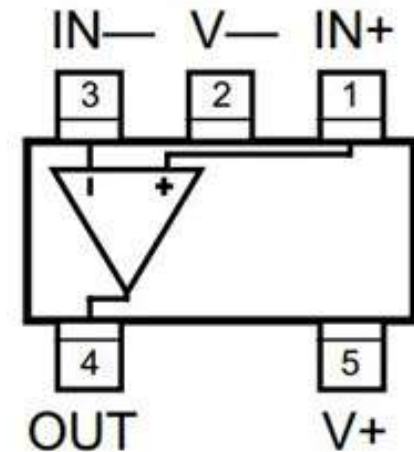
SOT-23-5 or SC-70



MIC919

27MHz Low-Power SOT-23-5/SC-70 Op Amp

- ◆ 27MHz gain bandwidth product
- ◆ 360 μ A supply current
- ◆ SOT-23-5 or SC-70 packages
- ◆ 1500V/ μ s slew rate
- ◆ Drives any capacitive load
- ◆ Unity gain stable



SOT-23-5 or SC-70

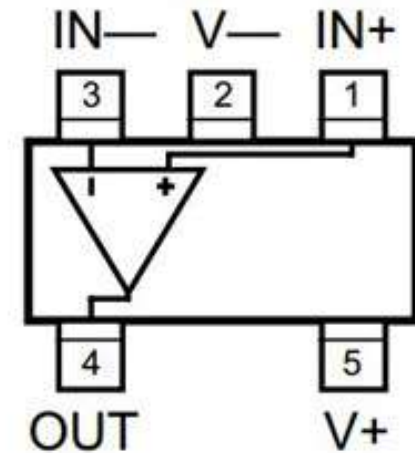




MIC920

80MHz Low-Power SC-70 Op Amp

- ◆ 80MHz gain bandwidth product
- ◆ 115MHz -3dB bandwidth
- ◆ 550 μ A supply current
- ◆ SC-70 or SOT-23-5 packages
- ◆ 3000V/ μ s slew rate
- ◆ Drives any capacitive load
- ◆ Unity gain stable



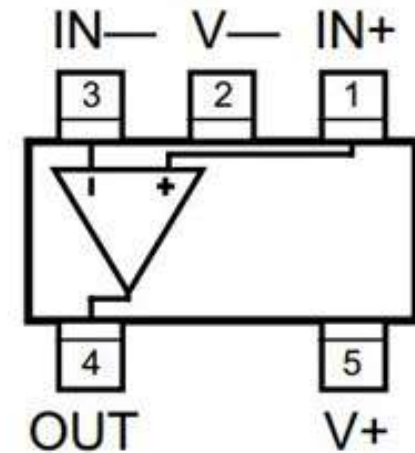
SOT-23-5 or SC-70



MIC921

45MHz Low-Power SC-70 Op Amp

- ◆ 45MHz gain bandwidth product
- ◆ 61MHz -3dB bandwidth
- ◆ 300 μ A supply current
- ◆ SC-70 or SOT-23-5 packages
- ◆ 3200V/ μ s slew rate
- ◆ Drives any capacitive load
- ◆ 112dB CMRR
- ◆ Unity gain stable



SOT-23-5 or SC-70

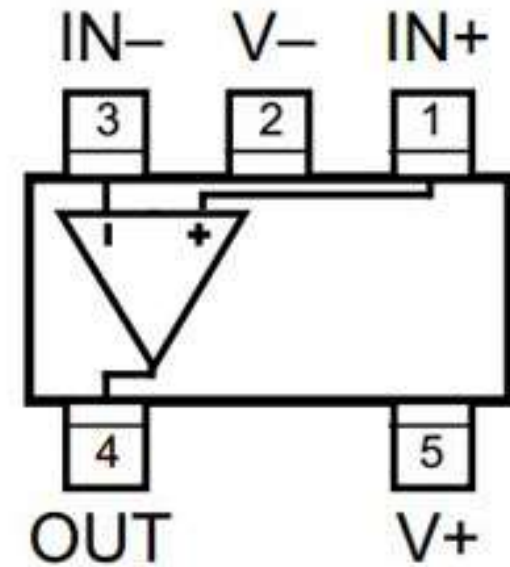




MIC922

230MHz Low-Power SC-70 Op Amp

- ◆ 230MHz gain bandwidth product
- ◆ 400MHz -3dB bandwidth
- ◆ 2.5mA supply current
- ◆ SC-70 package
- ◆ 1500V/ μ s slew rate
- ◆ Drives any capacitive load
- ◆ Unity gain stable



SC-70

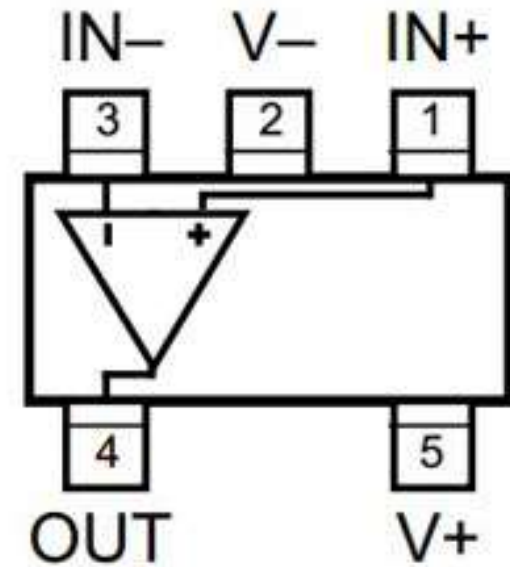




MIC923

410MHz Low-Power SC70 Op Amp

- ◆ 410MHz gain bandwidth product
- ◆ 2.5mA supply current
- ◆ Teeny™ SC70 packaging
- ◆ 2200V/ μ s slew rate
- ◆ Drives any capacitive load
- ◆ Stable with gain ≥ 2 or -1



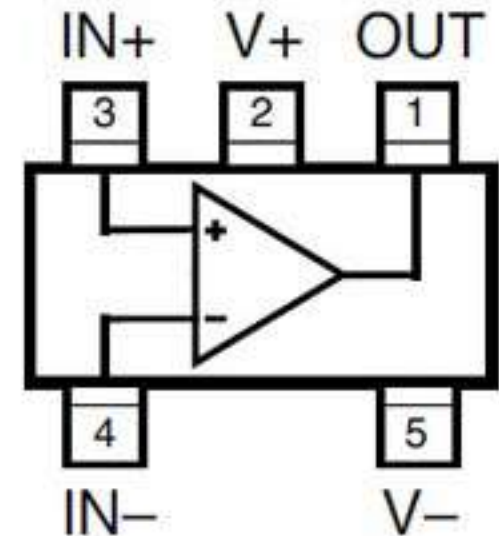
SC-70



LMC7101

Low-Power Operational Amplifier

- ◆ Small footprint SOT-23-5 package
- ◆ Guaranteed 2.7V, 3V, 5V, and 12V performance
- ◆ 500kHz gain-bandwidth
- ◆ 0.01% total harmonic distortion at 10kHz (5V, 2k Ω)
- ◆ 0.5mA typical supply current at 5V



SOT-23-5 (M5)

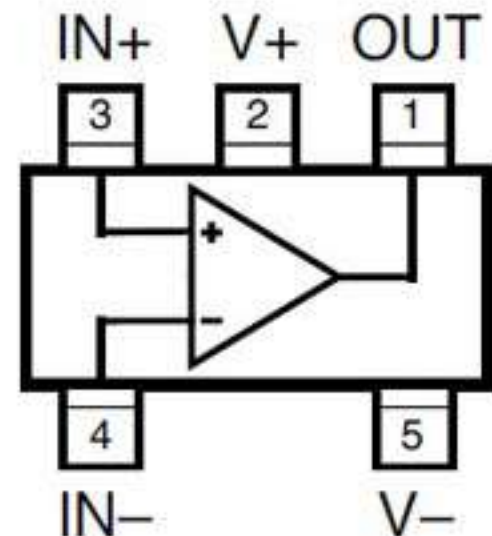




MIC7111

1.8V IttyBitty® Rail-to-Rail Input/Output Op Amp

- ◆ Output swing to within 1mV of rails with 1.8V supply and 100kΩ load
- ◆ Small footprint SOT-23-5 package
- ◆ Guaranteed performance at 1.8V, 2.7V, 5V, and 10V
- ◆ 15μA typical supply current at 1.8V
- ◆ 25kHz gain-bandwidth at 5V
- ◆ Suitable for driving capacitive loads



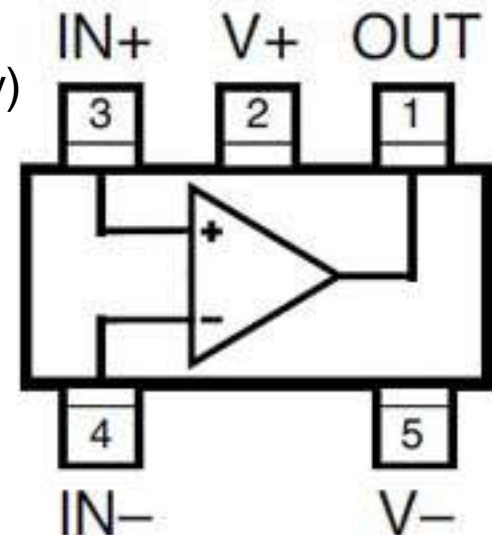
SOT-23-5 (M5)



MIC7300

High-Output Drive Rail-to-Rail Op Amp

- ◆ Small footprint SOT-23-5 and power MSOP-8 packages
- ◆ >80mA peak output sink and source with 5V supply
- ◆ Drives large capacitive loads (6000pF with 10V supply)
- ◆ Guaranteed 2.2V, 3V, 5V, and 10V performance
- ◆ 500kHz gain-bandwidth product
- ◆ 0.01% total harmonic distortion at 1kHz (10V, 2k Ω)
- ◆ 1mA typical power supply current at 5V



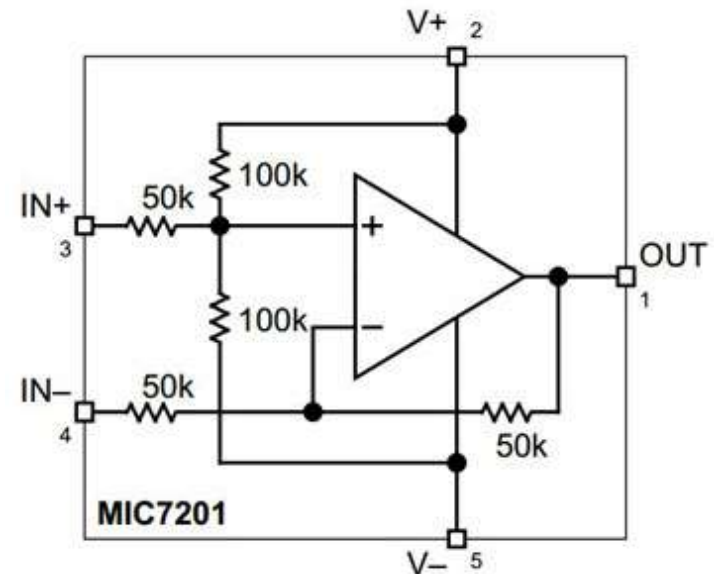
SOT-23-5 (M5)



MIC7201

GainBlock™ Difference Amplifier

- ◆ Operates from 2.2V to 10V
- ◆ $\pm 1\%$ typical gain error
- ◆ 0.6mA typical supply current at 2.2V
- ◆ 400kHz bandwidth
- ◆ Small SOT-23-5 package
- ◆ Suitable for driving capacitive loads

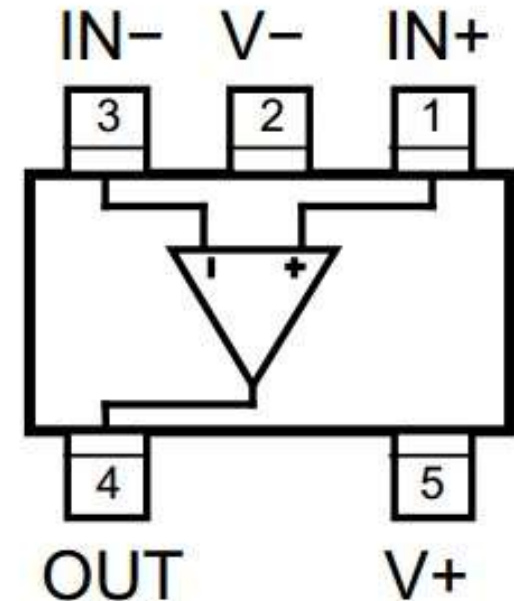




MIC860

Teeny™ Ultra-Low Power Op Amp

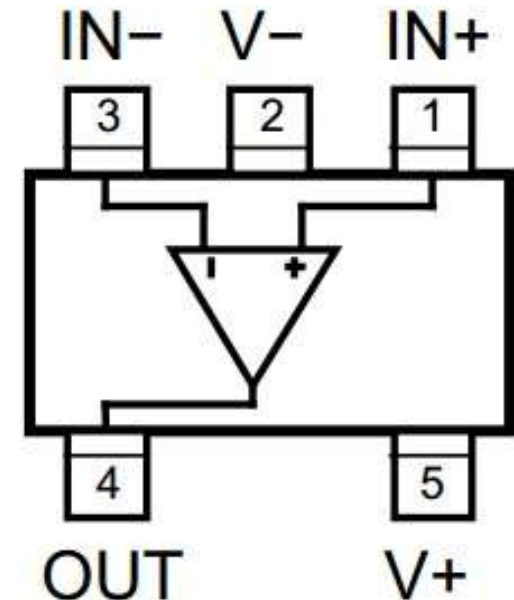
- ◆ Teeny™ SC70 packaging
- ◆ 4MHz gain-bandwidth product
- ◆ 30μA supply current
- ◆ Rail-to-rail output
- ◆ Ground sensing at input common mode to GND
- ◆ Common mode to GND
- ◆ Drive large capacitive loads



MIC861

Teeny™ Ultra-Low Power Op Amp

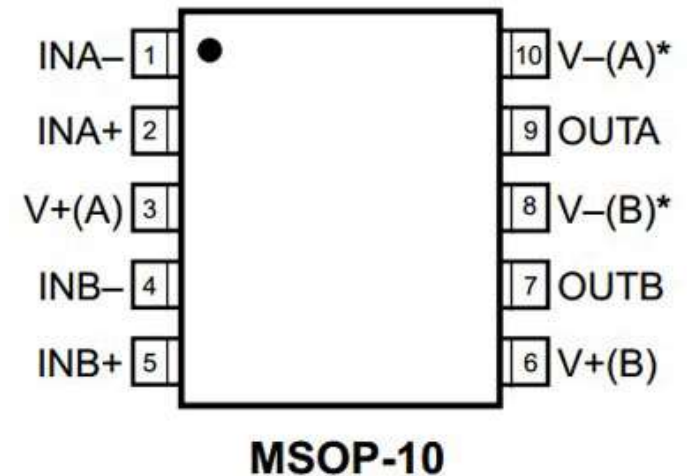
- ◆ Teeny™ SC70 packaging
- ◆ 400kHz gain-bandwidth product
- ◆ 650kHz, -3dB bandwidth
- ◆ 4.6μA supply current
- ◆ Rail-to-Rail output
- ◆ Ground sensing at input (common mode to GND)
- ◆ Drives large capacitive loads (1000pF)
- ◆ Unity gain stable



MIC915

Dual 135MHz Low-Power Op Amp

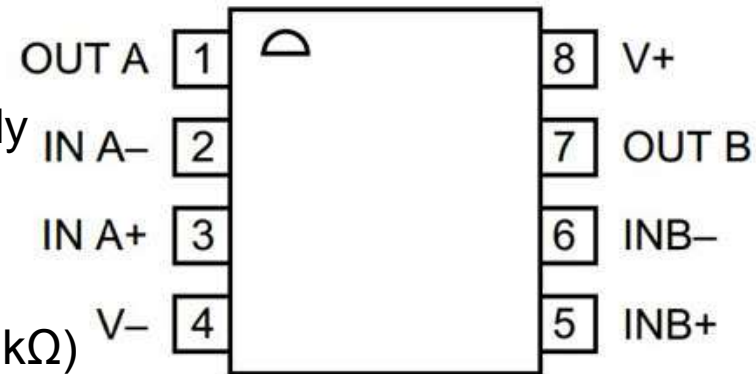
- ◆ 135MHz gain bandwidth product
- ◆ 2.4mA supply current per op amp
- ◆ MSOP-10 package
- ◆ 270V/ μ s slew rate
- ◆ Drives any capacitive load



MIC7122

Rail-to-Rail Dual Op Amp

- ◆ Small footprint MSOP-8 package
- ◆ 350 μ A supply current per op amp at 2.2V supply
- ◆ Guaranteed 2.2V, 5V, and 15V performance
- ◆ 750kHz gain-bandwidth product at 2.2V supply
- ◆ 0.01% total harmonic distortion at 1kHz (15V, 2k Ω)
- ◆ Drives 200pF at 5V and greater supply voltages



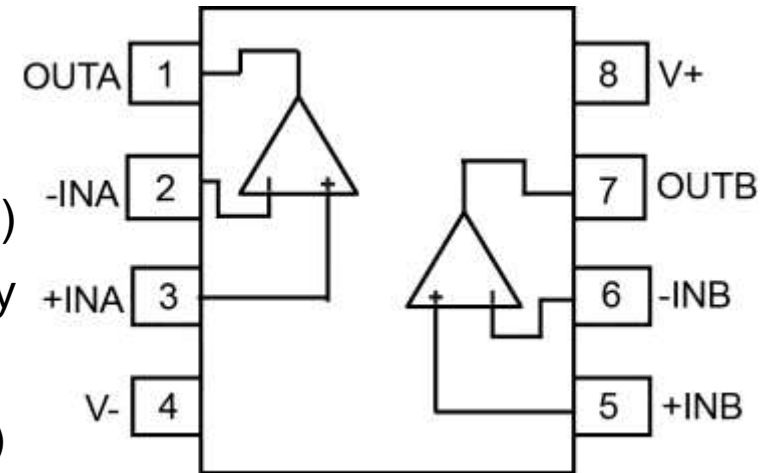
MSOP-8 (MM)



MIC864

Dual 350kHz Rail-to-Rail Operational Amplifier

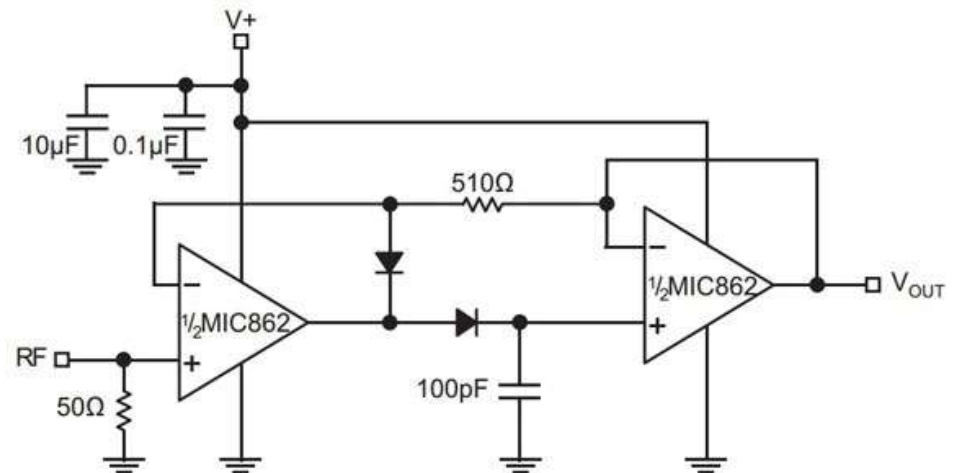
- ◆ 2.5V to 5.5V single or $\pm 1.25\text{V}$ to $\pm 2.75\text{V}$ dual supply voltage
- ◆ 33 μA per channel quiescent current
- ◆ 350kHz gain bandwidth product
- ◆ 0.2V/ μs slew rate
- ◆ 18mA output drive capability (sink or source)
- ◆ 200mV greater-than-the-rails input capability
- ◆ Rail-to-rail output (within 15mV)
- ◆ 80dB common mode rejection ratio (CMRR)
- ◆ 80dB power supply rejection ratio (PSRR)
- ◆ 8-pin SOIC package
- ◆ 10-pin 2.5mm x 2.5mm x 0.4mm XTDFN package



MIC862

Dual Ultra Low Power Op Amp in SOT23-8

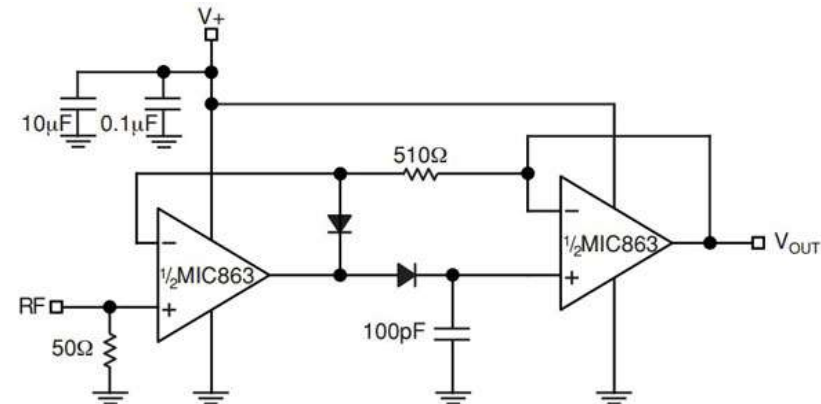
- ◆ SOT23-8 packaging
- ◆ 3MHz gain-bandwidth product
- ◆ 5MHz, -3dB bandwidth
- ◆ 31 μ A supply current
- ◆ Rail-to-rail output
- ◆ Ground sensing at input (common mode to GND)
- ◆ Drive large capacitive loads
- ◆ Unity gain stable



MIC863

Dual Ultra Low Power Op Amp in SOT23-8

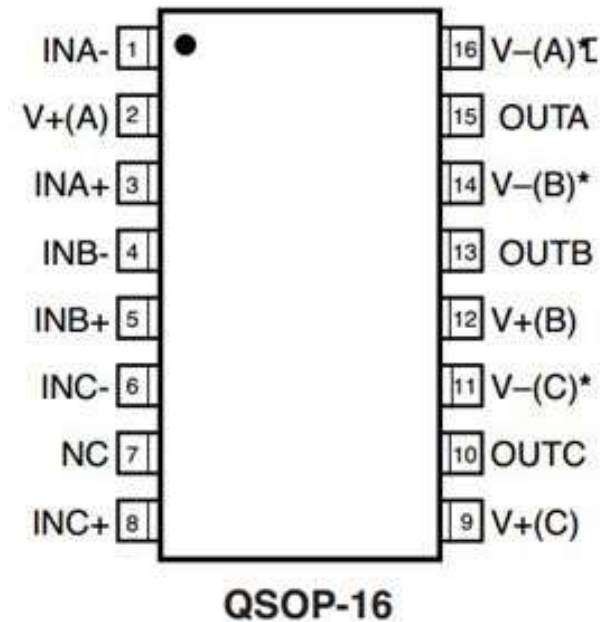
- ◆ SOT23-8 packaging
- ◆ 450kHz gain-bandwidth product
- ◆ 800kHz, -3dB bandwidth
- ◆ 4.2μA supply current/channel
- ◆ Rail-to-rail output
- ◆ Ground sensing at input (common mode to GND)
- ◆ Drives large capacitive loads (0.02μF)
- ◆ Unity gain stable



MIC916

Triple 135MHz Low-Power Op Amp

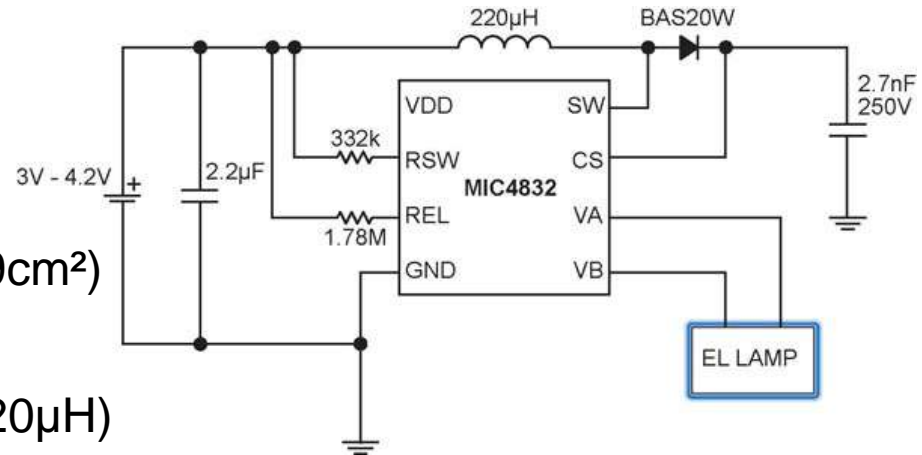
- ◆ 135MHz gain bandwidth product
- ◆ 2.4mA supply current per op amp
- ◆ QSOP-16 package
- ◆ 270V/ μ s slew rate
- ◆ Drives any capacitive load



MIC4832

Low Noise 220VPP EL Driver

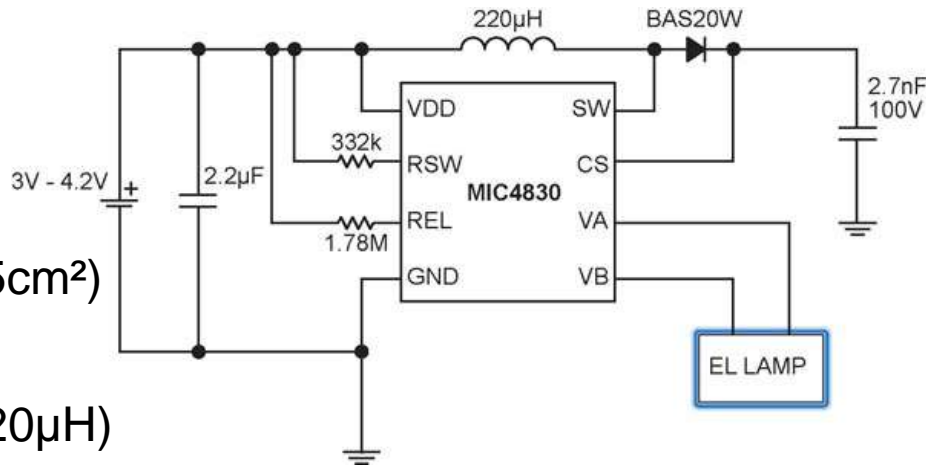
- ◆ 1.8V to 5.5V DC input voltage
- ◆ 220V_{PP} output voltage capable
- ◆ Low audible noise EL drive waveform
- ◆ Supports EL panel sizes up to 3in² (19cm²)
- ◆ Low 25μA operating supply current
- ◆ Small inductor size with low profile (220μH)
- ◆ Tiny 8-pin 3mm x 3mm MLF[®] package
- ◆ Adjustable boost converter frequency
- ◆ Adjustable EL lamp frequency
- ◆ 10nA shutdown current



MIC4830

Low Noise 180Vpp EL Driver

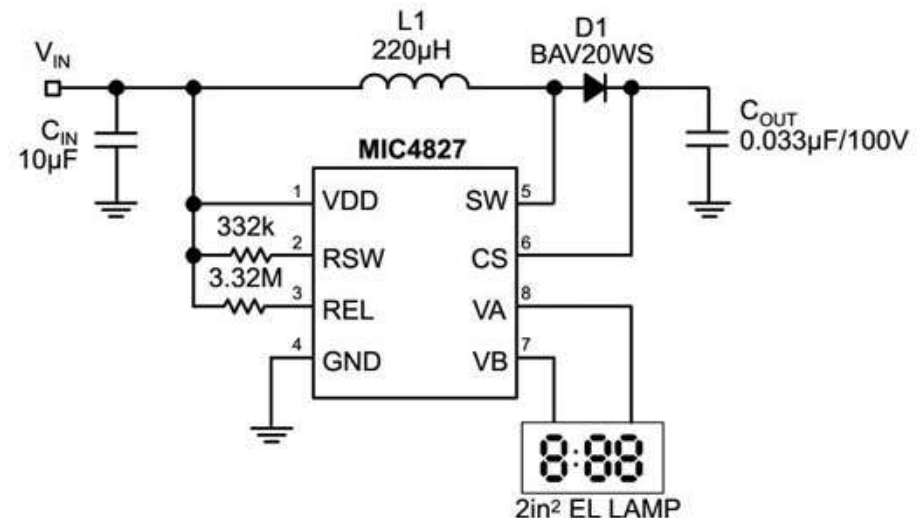
- ◆ 1.8V to 5.5V input voltage
- ◆ 180V_{PP} output voltage
- ◆ Low audible noise EL drive waveform
- ◆ Supports EL panel sizes up to 4in² (25cm²)
- ◆ Low 45μA operating supply current
- ◆ Small inductor size with low profile (220μH)
- ◆ Tiny 8-pin 3mm x 3mm MLF[®] package
- ◆ Adjustable boost converter frequency
- ◆ Adjustable EL lamp frequency
- ◆ Low 10nA shutdown current



MIC4827

Low Input Voltage, 180VPP Output Voltage, EL Driver

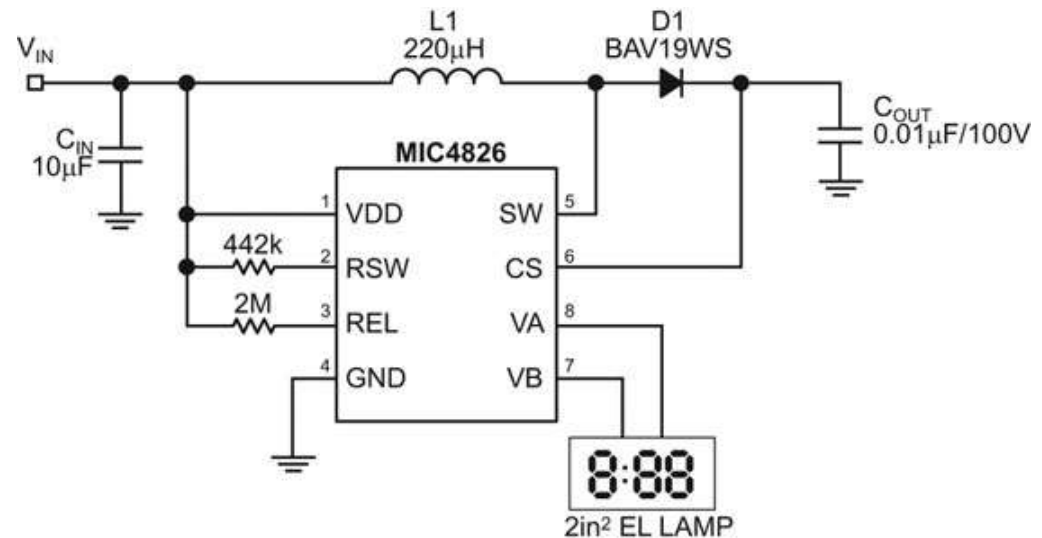
- ◆ 1.8V to 5.5V DC input voltage
- ◆ 180V_{PP} regulated AC output waveform
- ◆ Independently adjustable EL lamp frequency
- ◆ Independently adjustable boost converter frequency
- ◆ 0.1μA shutdown current



MIC4826

Low Input Voltage, 160VPP Output Voltage, EL Driver

- ◆ 1.8V to 5.5V DC input voltage
- ◆ 160V_{PP} regulated AC output waveform
- ◆ Independently adjustable EL lamp frequency
- ◆ Independently adjustable boost converter frequency
- ◆ 0.1μA shutdown current

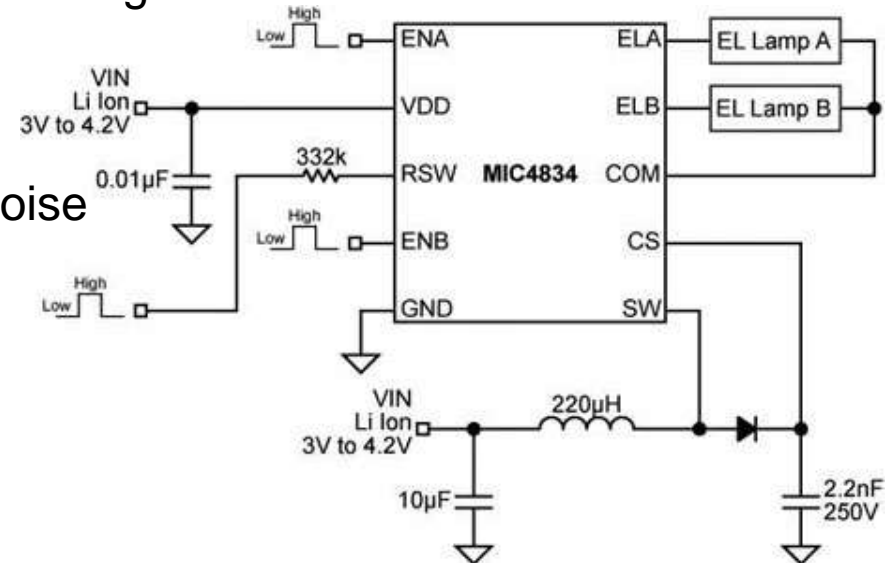




MIC4834

Low Noise Dual 220Vpp EL Driver

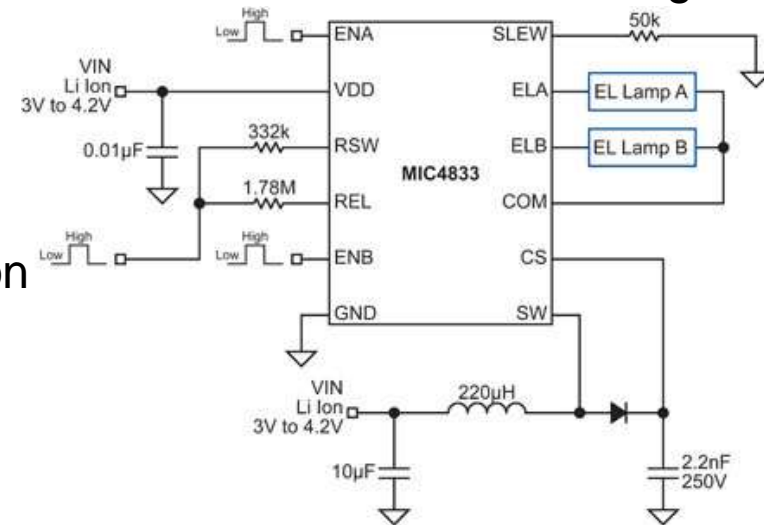
- ◆ Drives two EL panels, up to 3in² each at full brightness
- ◆ 220V_{PP} regulated AC output waveform
- ◆ 2.3V to 5.8V DC input voltage
- ◆ Wave-shaping circuit to reduce audible noise
- ◆ Adjustable boost converter frequency
- ◆ Single inductor to power both panels
- ◆ 0.1μA typical shutdown current
- ◆ Package options:
 - 10-pin 3mm x 3mm MLF[®]
 - 10-pin MSOP
- ◆ -40°C to +125°C junction temperature range



MIC4833

Low Noise Dual 220Vpp EL Driver With Output Voltage Slew Rate Control

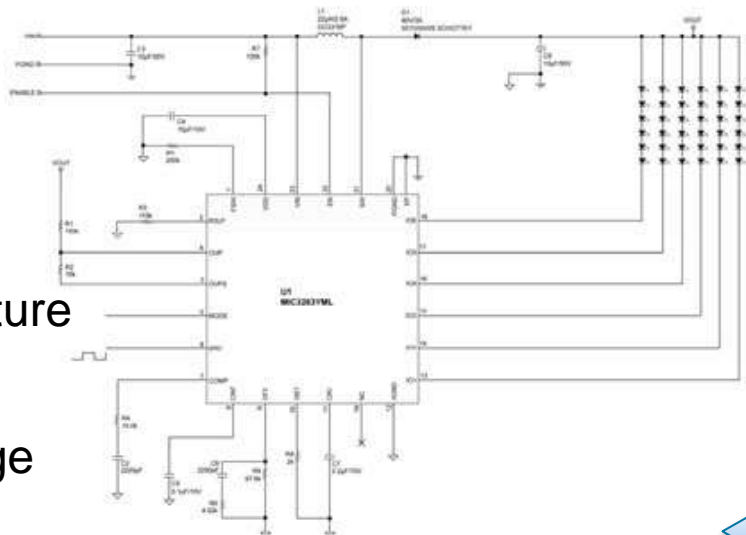
- ◆ Drives two EL panels, up to 4in² each at full brightness
- ◆ Independent input control for each of the two panels and allows PWM dimming.
- ◆ 220V_{PP} regulated AC output waveform
- ◆ 2.3V to 5.8V DC input voltage
- ◆ Wave-shaping circuit to reduce audible noise
- ◆ Adjustable slew rate for audible noise reduction
- ◆ Single inductor to power both panels
- ◆ 0.1μA typical shutdown current
- ◆ 12-pin 3mm x 3mm MLF[®] package
- ◆ -40°C to +125°C junction temperature range
- ◆ Independently adjustable boost converter and EL panel frequency



MIC3263

Six-Channel WLED Driver for Backlighting Applications with Flicker-Free Dimming

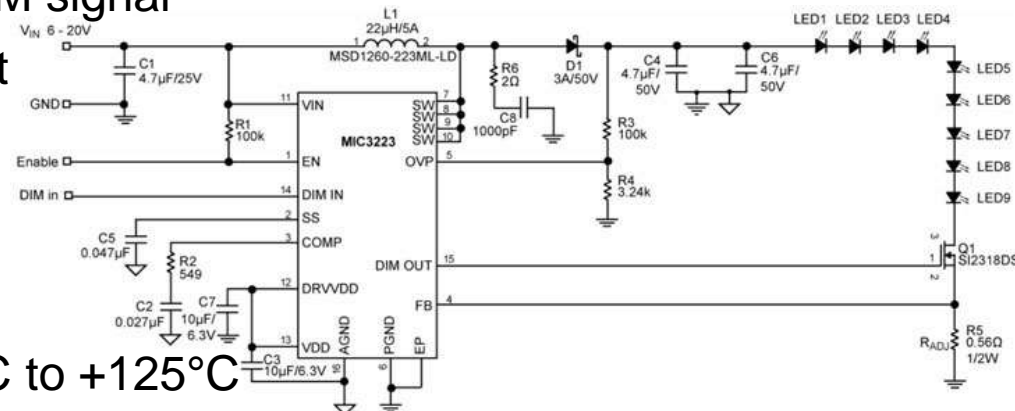
- ◆ 6V to 40V wide input voltage range
- ◆ Drives six channels of up to 10 white LEDs
- ◆ Programmable WLED current from 15mA to 30mA
- ◆ Highly reliable operation with open and short LEDs
- ◆ Accurate 16 dimming log levels sets the dimming ratio from 1% to 100%
- ◆ Flicker-Free Dimming filters the jitter from the dimming control input signal and eliminates dimming flicker
- ◆ Accurate LED channel current matching $\pm 3\%$
- ◆ Accurate initial LED current setting $\pm 2\%$
- ◆ High efficiency up to 90%
- ◆ Low ($<40\mu\text{A}$) shutdown current over temperature
- ◆ -40°C to -125°C junction temperature range
- ◆ Available in 24-pin 4mm x 4mm MLF[®] package



MIC3223

High Power Boost LED Driver with Integrated FET

- ◆ 4.5V to 20V supply voltage
- ◆ 1MHz switching frequency
- ◆ 100mΩ/3.5A internal power FET switch
- ◆ LEDs can be dimmed using a PWM signal
- ◆ Externally programmable soft-start
- ◆ Protection features that include:
 - Output over voltage protection (OVP)
 - Under voltage lockout (UVLO)
 - Over temperature protection
- ◆ Junction temperature range: -40°C to +125°C
- ◆ Available in an exposed pad 16-pin TSSOP package
- ◆ 200mV feedback voltage with an accuracy of ±5%
- ◆ Step-up output voltage (boost) conversion up to 37V

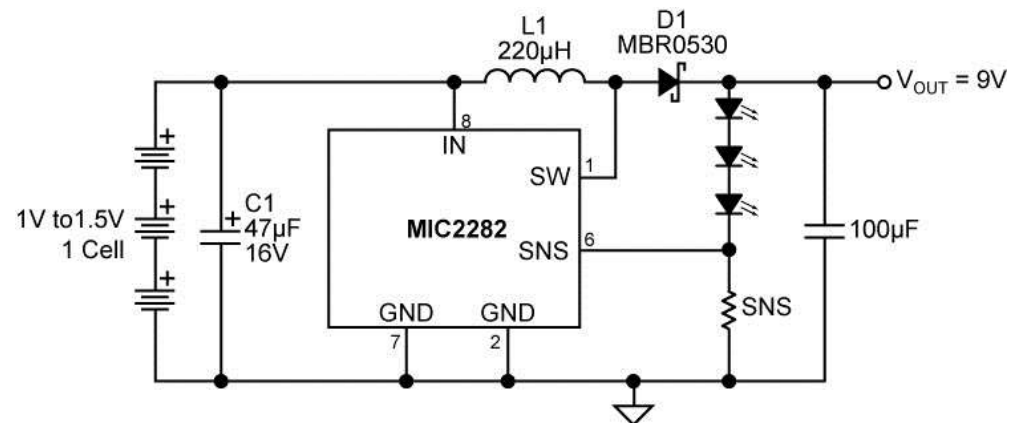




MIC2282

Single-Cell Ultra Low EMI Boost LED Driver

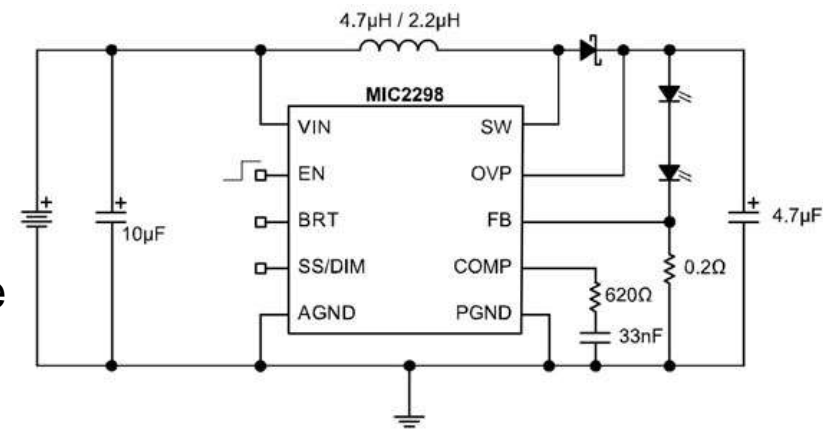
- ◆ Operates from a single-cell supply ($V_{IN} = 0.9V$ to $15V$)
- ◆ Ultra Low EMI
- ◆ $120\mu A$ typical quiescent current
- ◆ Adjustable output voltages
- ◆ $220mV$ sense voltage
- ◆ $20kHz$ switching frequency
- ◆ Over temperature protection
- ◆ 8-pin MSOP package
- ◆ Low component count solution



MIC2298

3.5A Minimum, 1MHz Boost High Brightness White LED Driver

- ◆ 3.5A minimum switch current delivers at least 7W of output power over temperature
- ◆ 200mV $\pm 10\%$ feedback voltage
- ◆ 2.5V to 10V input voltage
- ◆ Output voltage up to 30V (max)
- ◆ 12-pin 3mm x 3mm leadless MLF[®] package
- ◆ Output over voltage protection (OVP)
- ◆ <1% line regulation
- ◆ 1 μ A shutdown current
- ◆ Over-temperature protection
- ◆ Externally programmable soft-start
- ◆ Under voltage lockout (UVLO)
- ◆ -40°C to +125°C junction temperature range

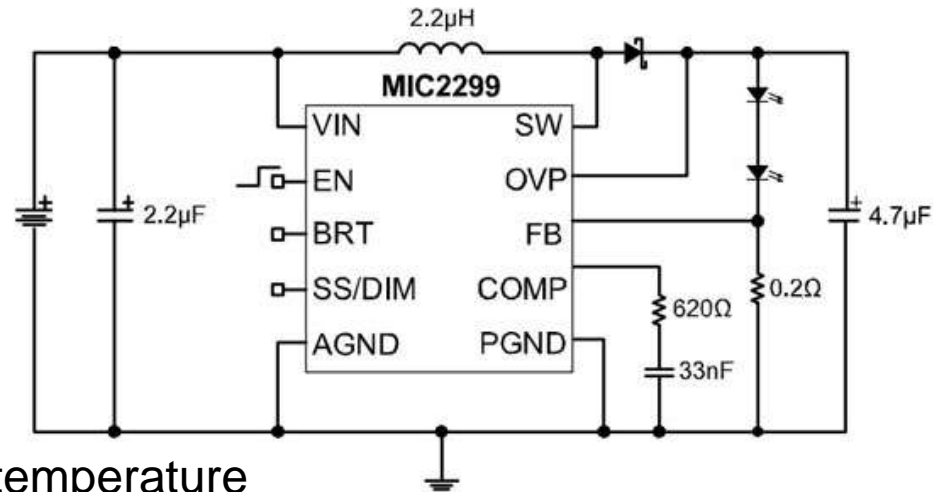




MIC2299

3.5A Minimum, 2MHz High Brightness LED Driver

- ◆ Programmable current control
- ◆ 200mV $\pm 10\%$ feedback voltage
- ◆ 2.5V to 10V input voltage
- ◆ Output over voltage protection (OVP)
- ◆ Output voltage up to 30V (max)
- ◆ Fixed 2.0MHz Operation
- ◆ Guaranteed 3.5A switch current over-temperature
- ◆ Solution size of just 0.25in² (1.6cm²)
- ◆ Output power range of 7W to 12W
- ◆ <1% line regulation
- ◆ 1 μ A shutdown current
- ◆ Under-voltage lockout (UVLO)
- ◆ 12-pin 3mm x 3mm leadless MLF[®] package
- ◆ -40°C to +125°C junction temperature range

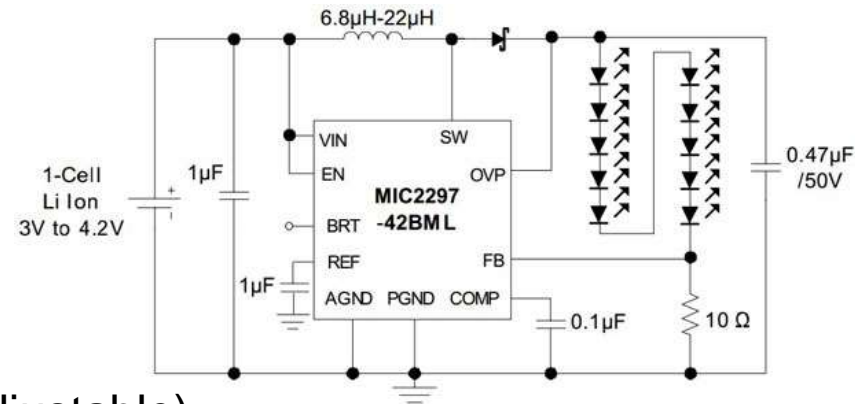




MIC2297

40V PWM Boost Regulator White LED Driver

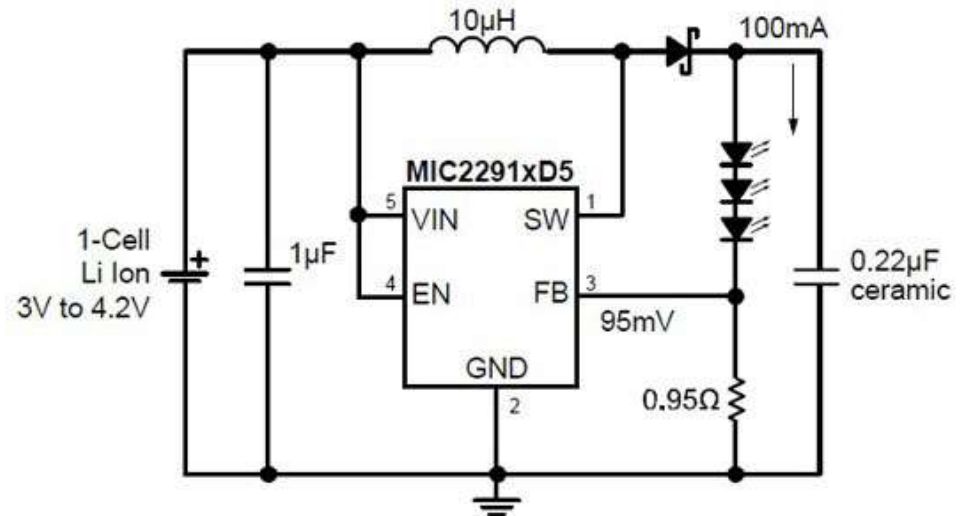
- ◆ 2.5V to 10V input voltage range
- ◆ Output voltage up to 40V
- ◆ 1.2A switch current
- ◆ 600kHz PWM operation
- ◆ Trimmed 200mV feedback voltage
- ◆ Output over voltage protection (fixed or adjustable)
- ◆ PWM brightness control
- ◆ DAC brightness control
- ◆ <1% line regulation
- ◆ 1μA shutdown current
- ◆ Over temperature protection
- ◆ UVLO
- ◆ 10-pin 2.5mm x 2.5mm MLF[®] package
- ◆ -40 °C to +125 °C junction temperature range



MIC2291

1.2A PWM Boost Regulator Photo Flash LED Driver

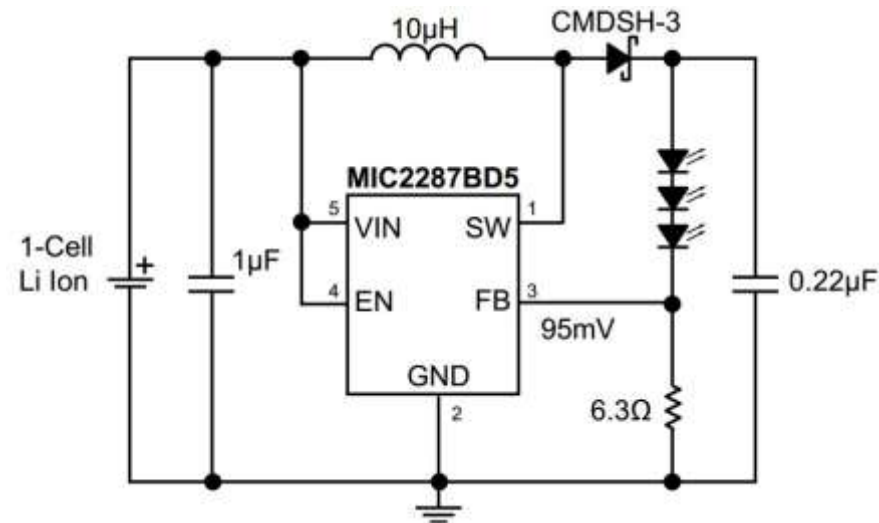
- ◆ 2.5V to 10V input voltage
- ◆ Output voltage up to 34V
- ◆ 1.2A switch current
- ◆ 1.2MHz PWM operation
- ◆ 95mV feedback voltage
 - -Options for 15V and 34V
- ◆ Over voltage protection (OVP)
 - -Options for 15V and 34V
- ◆ Stable with ceramic capacitors
- ◆ <1% line and load regulation
- ◆ 1 μ A shutdown current
- ◆ UVLO
- ◆ Low-profile Thin SOT23-5 package option
- ◆ 2mm x 2mm MLF[®] package option
- ◆ -40°C to +125°C junction temperature range



MIC2287

1.2MHz PWM White LED Driver with OVP in 2mm x 2mm MLF® & Thin SOT-23

- ◆ 2.5V to 10V input voltage
- ◆ Output voltage up to 34V
- ◆ Over 500mA switch current
- ◆ 1.2 MHz PWM operation
- ◆ 95mV feedback voltage
- ◆ Output over voltage protection (OVP)
- ◆ Options for 15V, 24V, and 34V OVP
- ◆ <1% line and load regulation
- ◆ <1μA shutdown current
- ◆ Over-temperature protection
- ◆ UVLO
- ◆ Low profile Thin SOT-23-5 package option
- ◆ 8-lead 2mm x 2mm MLF® package option
- ◆ -40°C to +125°C junction temperature range

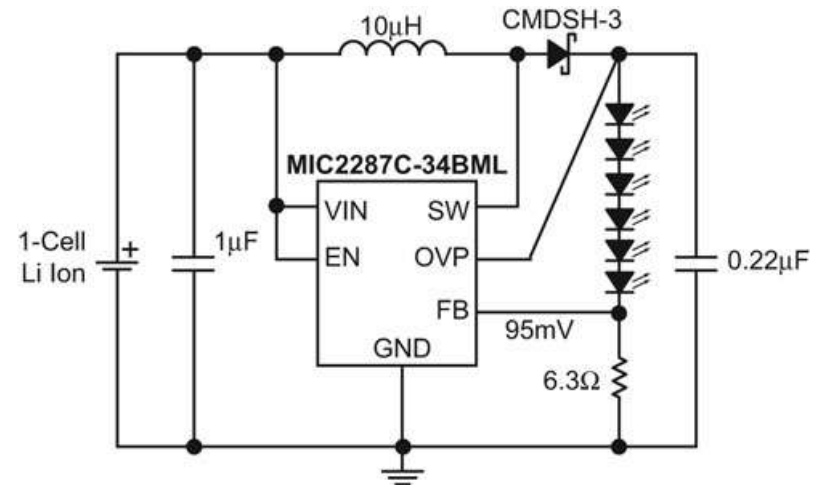




MIC2287C

1.2MHz PWM White LED Driver with OVP in 2mm x 2mm MLF® & Thin SOT-23

- ◆ 2.5V to 10V input voltage
- ◆ Output voltage up to 34V
- ◆ Over 500mA switch current
- ◆ 1.2 MHz PWM operation
- ◆ 95mV feedback voltage
- ◆ Output over voltage protection (OVP)
- ◆ Options for 15V, 24V, and 34V OVP
- ◆ Over-temperature protection
- ◆ UVLO
- ◆ Low profile Thin SOT-23-5 package option
- ◆ 8-lead 2mm x 2mm MLF® package option
- ◆ -40°C to +125°C junction temperature range
- ◆ For higher performance specifications see the MIC2287

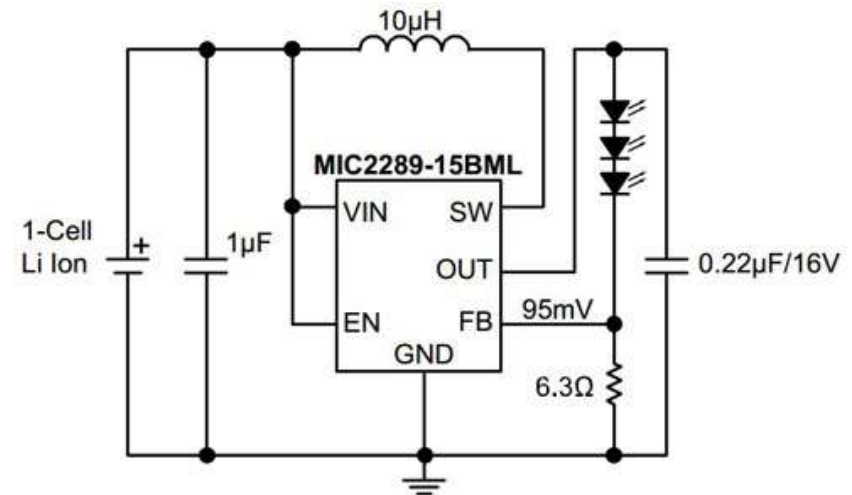




MIC2289

White LED Driver with Internal Schottky Diode and OVP

- ◆ 2.5V to 10V input voltage
- ◆ Output voltage up to 34V
- ◆ Internal Schottky diode
- ◆ 15V, 24V, 34V output OVP options
- ◆ 1.2MHz PWM operation
- ◆ Over 500mA switch current
- ◆ 95mV feedback voltage
- ◆ <1% line and load regulation
- ◆ <1 μ A shutdown current
- ◆ Overtemperature protection
- ◆ UVLO
- ◆ 8-pin 2mm x 2mm MLF[®] package
- ◆ -40°C to +125°C junction temperature range

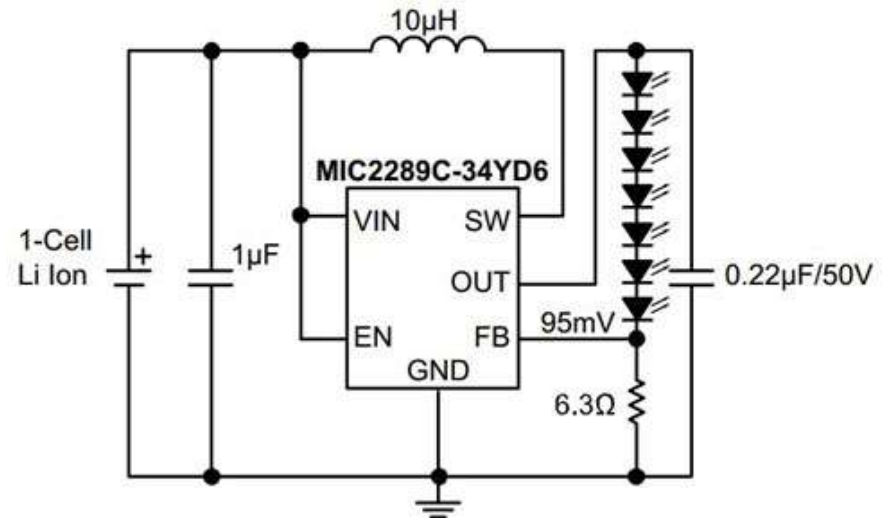




MIC2289C

1.2MHz PWM White LED Driver with OVP in Thin SOT-23

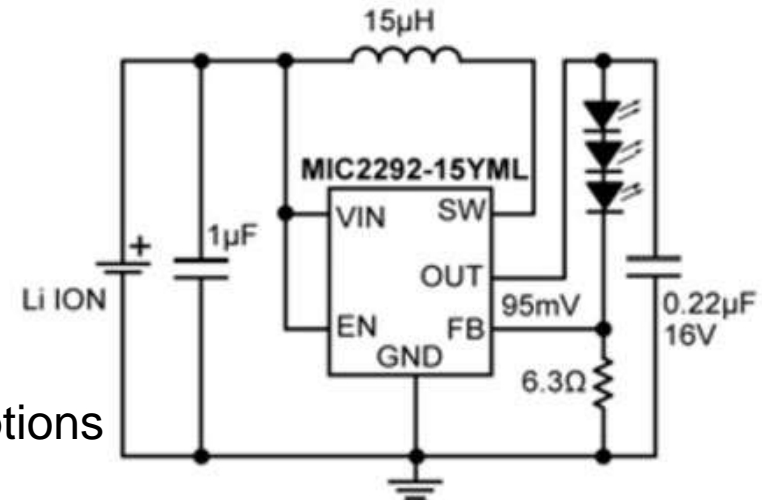
- ◆ 2.5V to 10V input voltage
- ◆ Output voltage up to 34V with OVP
- ◆ Internal Schottky diode
- ◆ Over 500mA switch current
- ◆ 1.2MHz PWM operation
- ◆ 95mV feedback voltage
- ◆ <1% line and load regulation
- ◆ <1 μ A shutdown current
- ◆ Over-temperature protection
- ◆ UVLO
- ◆ Thin SOT-23 6-pin package
- ◆ -40°C to +125°C junction temperature range
- ◆ For higher performance specifications see the MIC2289



MIC2292/3

High Frequency PWM White LED Drivers with Internal Schottky Diode and OVP

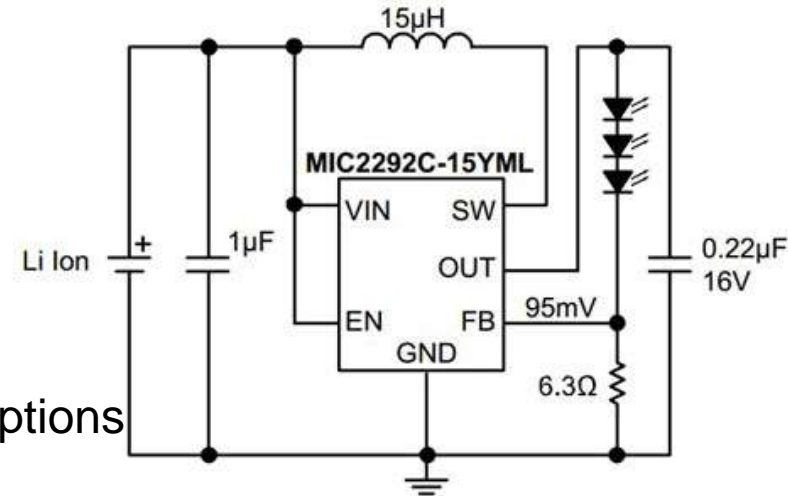
- ◆ 2.5V to 10V input voltage
- ◆ Output voltage up to 34V
- ◆ Internal Schottky diode
- ◆ 1.6MHz PWM operation (MIC2292)
- ◆ 2.0MHz PWM operation (MIC2293)
- ◆ 15V and 34V output overvoltage protection options
- ◆ 500mA switch current rating
- ◆ 95mV feedback voltage
- ◆ <1% line and load regulation
- ◆ <1 μ A shutdown current
- ◆ Over-temperature protection
- ◆ UVLO
- ◆ 8-pin 2mm x 2mm MLF[®] package
- ◆ -40°C to +125°C junction temperature range



MIC2292C/3C

High Frequency PWM White LED Drivers with Internal Schottky Diode and OVP

- ◆ 2.5V to 10V input voltage
- ◆ Output voltage up to 34V
- ◆ Internal Schottky diode
- ◆ 1.6MHz PWM operation (MIC2292C)
- ◆ 2.0MHz PWM operation (MIC2293C)
- ◆ 15V and 34V output overvoltage protection options
- ◆ 500mA switch current rating
- ◆ 95mV feedback voltage
- ◆ <1% line and load regulation
- ◆ <1 μ A shutdown current
- ◆ Over-temperature protection
- ◆ UVLO
- ◆ 8-pin 2mm x 2mm MLF[®] package
- ◆ -40°C to +125°C junction temperature range

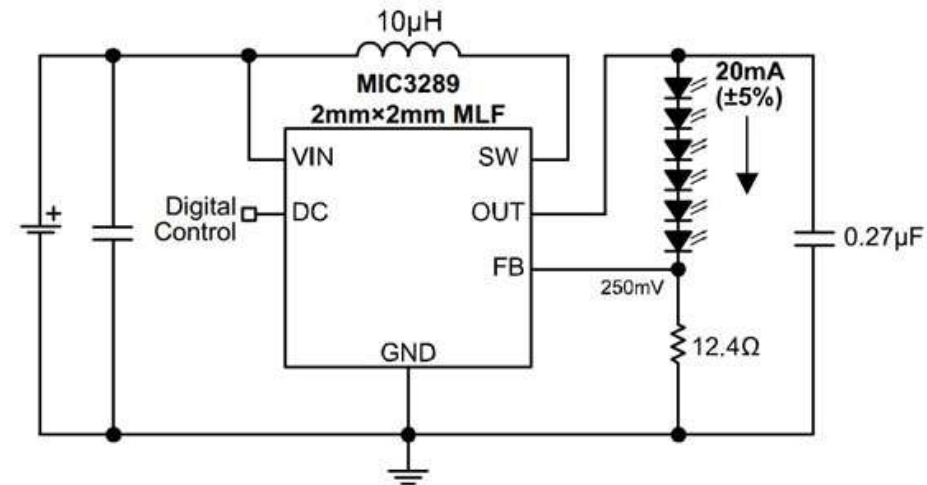


MIC3289



1.2MHz PWM White LED Driver with Internal Schottky Diode and True 1-Wire Digital Control

- ◆ Single wire combines 16 level logarithmic brightness and shutdown control
- ◆ 16V/24V OVP options supports up to 4 and 6 WLEDs
- ◆ Start-up in any one of 16 brightness levels
- ◆ Internal Schottky diode
- ◆ 2.5V to 6.5V input voltage
- ◆ 1.2MHz PWM operation
- ◆ Over 500mA switch current
- ◆ 250mV reference voltage
- ◆ $\pm 5\%$ LED current accuracy
- ◆ $< 1\mu\text{A}$ shutdown current
- ◆ UVLO
- ◆ Thin SOT23-6L package option
- ◆ 2mm x 2mm leadless MLF[®]-8L package option
- ◆ -40°C to 125°C junction temperature range

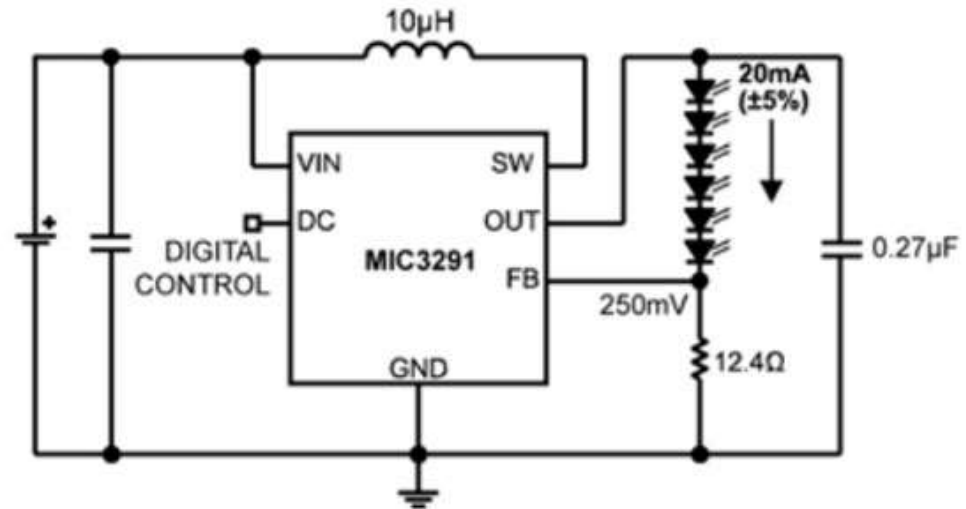


MIC3291



1.2MHz PWM White LED Driver with Internal Schottky Diode and Single-Wire Linear Brightness Control

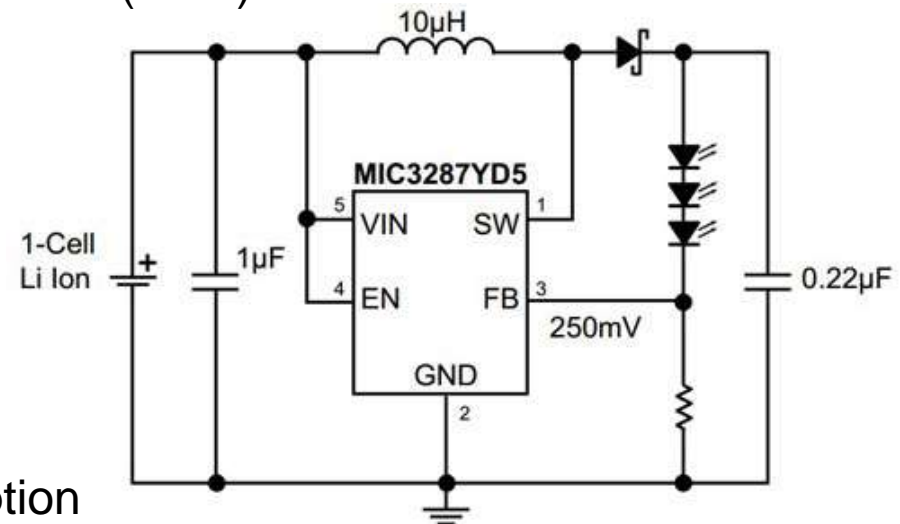
- ◆ Single wire combines 16 level linear brightness and shutdown control
- ◆ 18V/25V OVP options supports up to four and six WLEDs
- ◆ Startup in any one of 16 brightness levels
- ◆ Internal Schottky diode
- ◆ 2.5V to 6.5V input voltage
- ◆ 1.2MHz PWM operation
- ◆ Over 500mA switch current
- ◆ 250mV reference voltage
- ◆ $\pm 5\%$ LED current accuracy
- ◆ $< 1\mu\text{A}$ shutdown current
- ◆ UVLO and over-temperature protection
- ◆ Thin SOT23-6L package option
- ◆ 2mm x 2mm leadless MLF[®] package option
- ◆ -40°C to $+125^{\circ}\text{C}$ junction temperature range



MIC3287

1.2MHz PWM White LED Driver with OVP in 2mm x 2mm MLF® & Thin SOT-23

- ◆ 2.8V to 6.5V input voltage
- ◆ 350mA switch current
- ◆ Optional 24V output over voltage protection (OVP)
- ◆ 1.2MHz PWM operation
- ◆ 250mV feedback voltage
- ◆ <1% line and load regulation
- ◆ <1 μ A shutdown current
- ◆ Over-temperature protection
- ◆ Under voltage lockout (UVLO)
- ◆ Low profile Thin SOT-23-5 package option
- ◆ Low profile Thin SOT-23-6 package option
- ◆ 8-pin 2mm x 2mm MLF® package option
- ◆ -40°C to +125°C junction temperature range

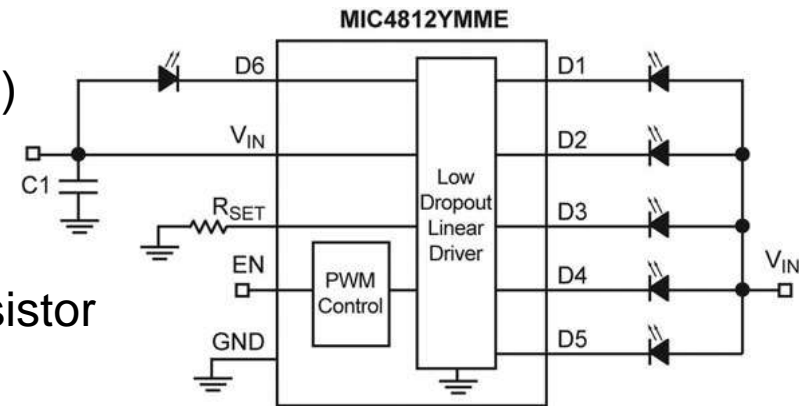




MIC4812

High Current 6 Channel Linear WLED Driver with DAM™ and Ultra Fast PWM™ Control

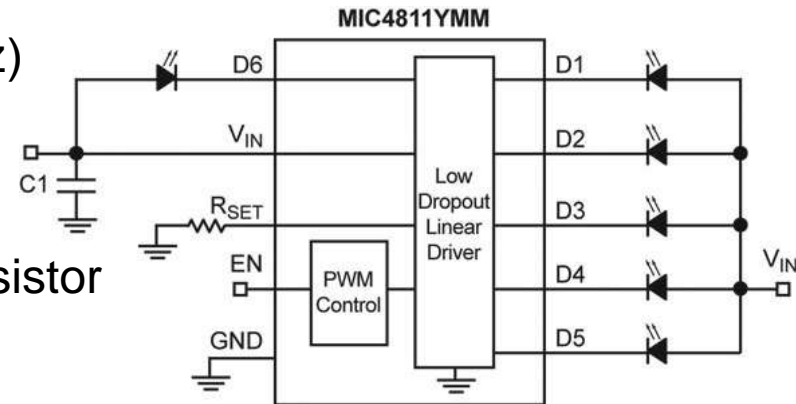
- ◆ High efficiency (no voltage boost losses)
- ◆ Ultra Fast PWM™ control (200Hz to 500kHz)
- ◆ Input voltage range: 3.0V to 5.5V
- ◆ LED current range up to 100mA per channel
- ◆ Programmable LED current with external resistor
- ◆ Dropout of 190mV at 100mA
- ◆ Matching better than $\pm 1\%$ (typical)
- ◆ Current accuracy better than $\pm 1\%$ (typical)
- ◆ Maintains proper regulation regardless of how many channels are utilized
- ◆ 10-pin MSOP with ePad package



MIC4811

High Current 6 Channel Linear WLED Driver with DAM™ and Ultra Fast PWM™ Control

- ◆ High efficiency (no voltage boost losses)
- ◆ Ultra Fast PWM™ control (200Hz to 500kHz)
- ◆ Input voltage range: 3.0V to 5.5V
- ◆ LED current range up to 50mA per channel
- ◆ Programmable LED current with external resistor
- ◆ Dropout of 100mV at 50mA
- ◆ Matching better than $\pm 1\%$ (typical)
- ◆ Current accuracy better than $\pm 1\%$ (typical)
- ◆ Maintains proper regulation regardless of how many channels are utilized
- ◆ 10-pin MSOP package

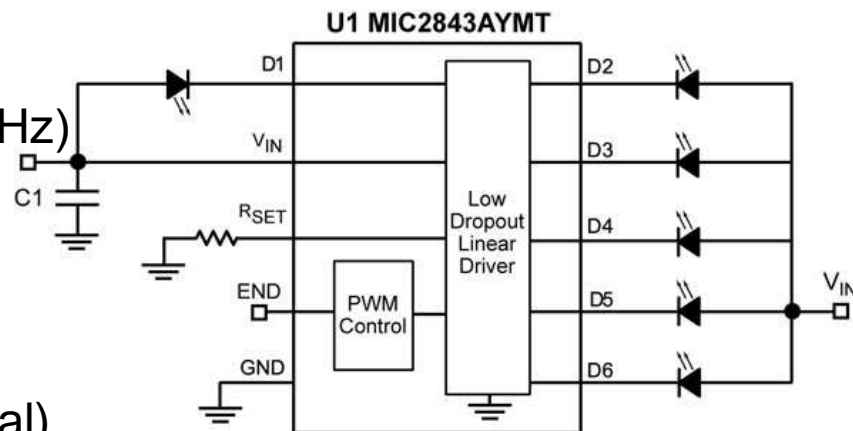


MIC2843A



High Efficiency 6 Channel Linear WLED Driver with DAM™ and Ultra Fast PWM™ Control

- ◆ High efficiency (no voltage boost losses)
- ◆ Dynamic Average Matching™ (DAM™)
- ◆ Ultra Fast PWM™ control (200Hz to 500kHz)
- ◆ Input voltage range: 3.0V to 5.5V
- ◆ Dropout of 40mV at 20mA
- ◆ Matching better than $\pm 1.5\%$ (typical)
- ◆ Current accuracy better than $\pm 1.5\%$ (typical)
- ◆ Maintains proper regulation regardless of how many channels are utilized
- ◆ Available in a 10-pin 2mm x 2mm Thin MLF® package

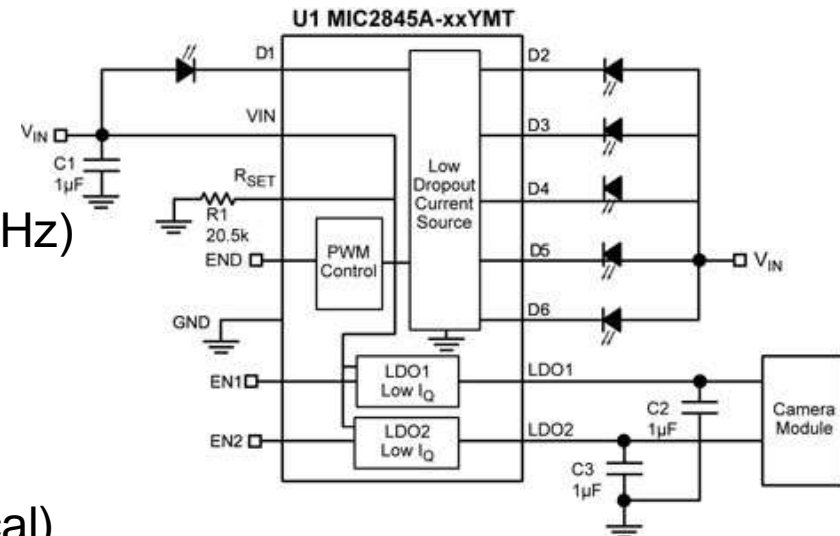


MIC2845A



High Efficiency 6 Channel Linear WLED Driver with DAM™, Ultra Fast PWM™ Control and Dual Low IQ LDOs

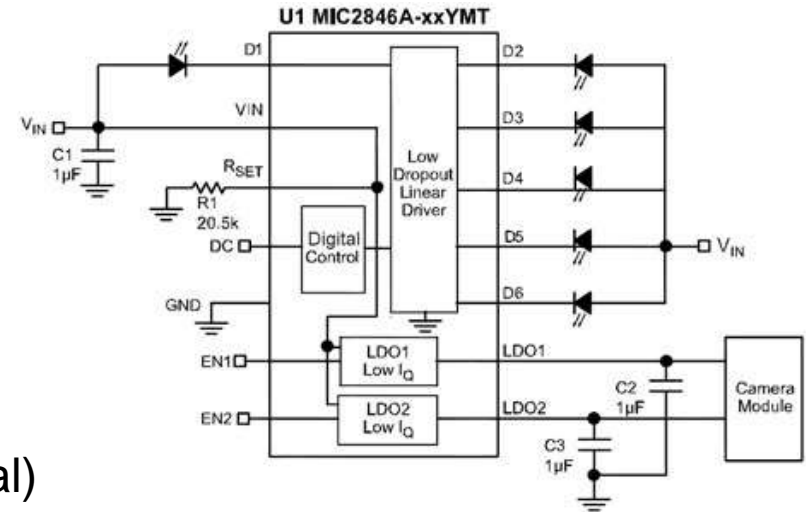
- ◆ High efficiency (no voltage boost losses)
- ◆ Dynamic Average Matching™ (DAM™)
- ◆ Ultra Fast PWM™ control (200Hz to 500kHz)
- ◆ Input voltage range: 3.0V to 5.5V
- ◆ Dropout of 40mV at 20mA
- ◆ Matching better than $\pm 1.5\%$ (typical)
- ◆ Current accuracy better than $\pm 1.5\%$ (typical)
- ◆ Maintains proper regulation regardless of how many channels are utilized



MIC2846A

High Efficiency 6 Channel Linear WLED Driver with DAM™, Digital Control and Dual Low IQ LDOs

- ◆ High efficiency (no voltage boost losses)
- ◆ Dynamic Average Matching™ (DAM™)
- ◆ Single wire digital control
- ◆ Input voltage range: 3.0V to 5.5V
- ◆ Dropout of 40mV at 20mA
- ◆ Matching better than $\pm 1.5\%$ (typical)
- ◆ Current accuracy better than $\pm 1.5\%$ (typical)
- ◆ Maintains proper regulation regardless of how many channels are utilized

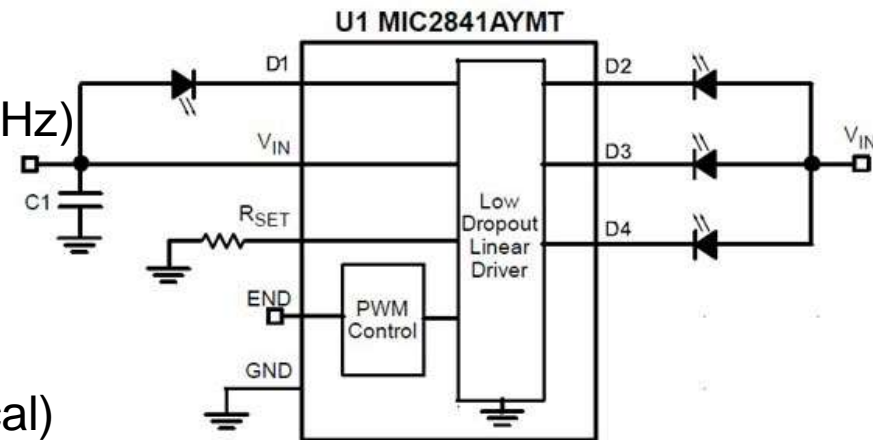


MIC2841A



High Efficiency 4 Channel Linear WLED Driver with DAM™ and Ultra Fast PWM™ Control

- ◆ High efficiency (no voltage boost losses)
- ◆ Dynamic Average Matching™ (DAM™)
- ◆ Ultra Fast PWM™ control (200Hz to 500kHz)
- ◆ Input voltage range: 3.0V to 5.5V
- ◆ Dropout of 40mV at 20mA
- ◆ Matching better than $\pm 1.5\%$ (typical)
- ◆ Current accuracy better than $\pm 1.5\%$ (typical)
- ◆ Maintains proper regulation regardless of how many channels are utilized
- ◆ Available in a 10-pin 2mm x 2mm Thin MLF® package

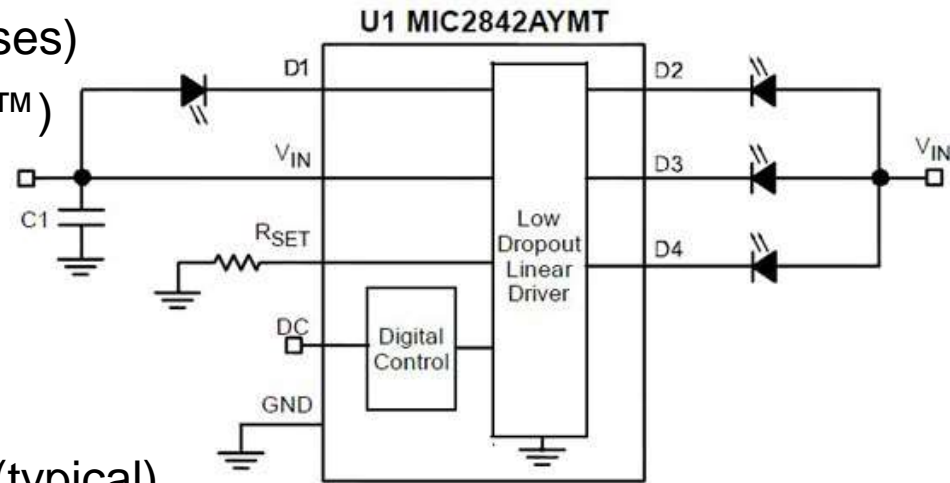




MIC2842A

High Efficiency 4 Channel WLED Driver with DAM™ and Single Wire Digital Control

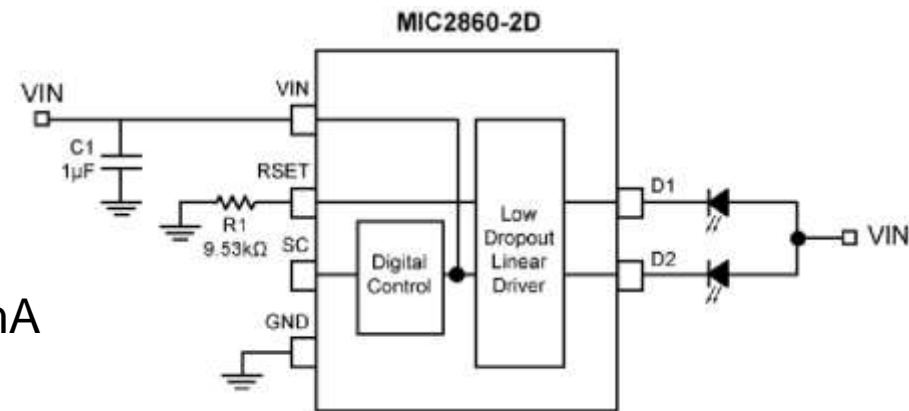
- ◆ High efficiency (no voltage boost losses)
- ◆ Dynamic Average Matching™ (DAM™)
- ◆ Single wire digital control
- ◆ Input voltage range: 3.0V to 5.5V
- ◆ Dropout of 40mV at 20mA
- ◆ Matching better than $\pm 1.5\%$ (typical)
- ◆ Current accuracy better than $\pm 1.5\%$ (typical)
- ◆ Maintains proper regulation regardless of how many channels are utilized
- ◆ Available in a 10-pin 2mm x 2mm Thin MLF® package



MIC2860-2D

High Efficiency 2 Channel WLED driver with Single Wire Digital Control

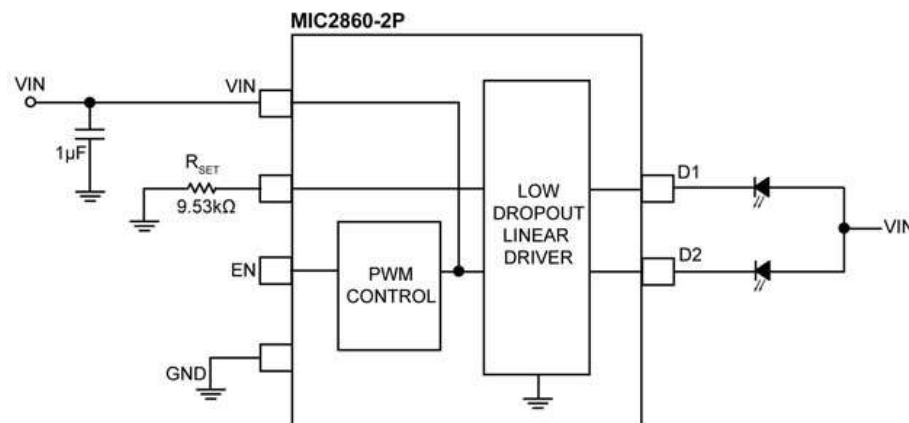
- ◆ High efficiency (no switching losses)
- ◆ No charge pumps
- ◆ Two WLED driver channels
- ◆ Single wire digital control
- ◆ Input voltage range: 3.0V to 5.5V
- ◆ WLED driver dropout of 52mV at 30.2mA
- ◆ Matching better than $\pm 0.5\%$ (typical)
- ◆ Current accuracy better than $\pm 1.0\%$ (typical)
- ◆ Available in Thin SOT-23 and SC-70 6-pin packages



MIC2860-2P

High-Efficiency Two-Channel WLED Driver with PWM Control

- ◆ High efficiency (no switching losses)
- ◆ PWM frequency as low as 250Hz
- ◆ Input voltage range: 3.0V to 5.5V
- ◆ Linear driver dropout of 52mV at 30.2mA
- ◆ Matching better than $\pm 0.5\%$ (typical)
- ◆ Current accuracy better than 1.0% (typical)
- ◆ Available in Thin SOT-23 and SC-70 packages

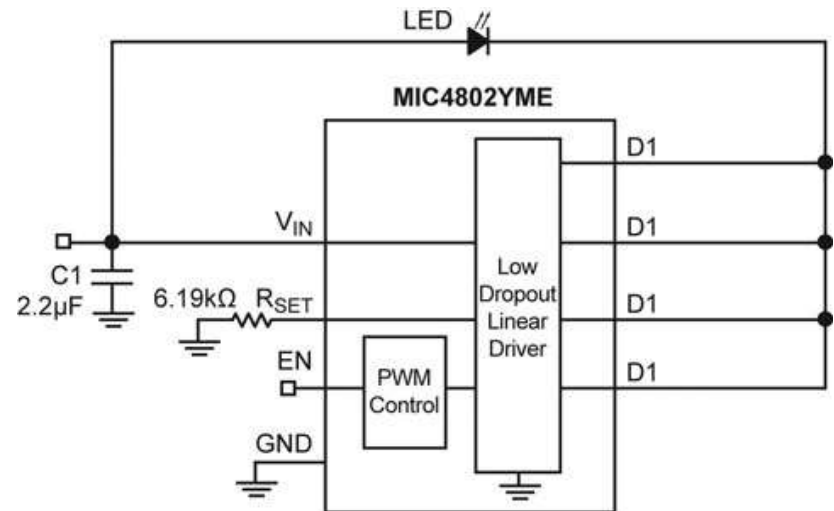


MIC4802



High Efficiency 800mA Single Channel Linear WLED Driver with Ultra Fast PWM™ Control

- ◆ High efficiency (no voltage boost losses)
- ◆ Ultra Fast PWM™ control (200Hz to 500kHz)
- ◆ Input voltage range: 3.0V to 5.5V
- ◆ Dropout of 280mV at 800mA
- ◆ Programmable LED current with external resistor
- ◆ Current accuracy of $\pm 1\%$ typical

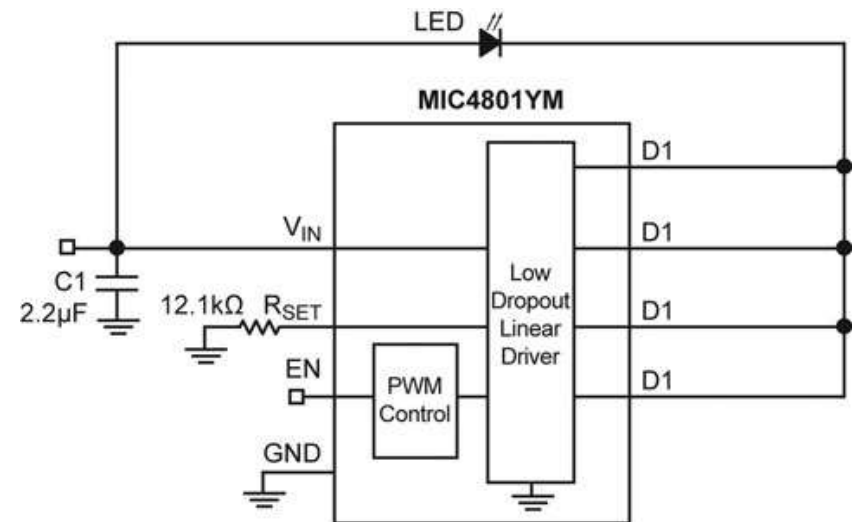


MIC4801



High Efficiency 600mA Single Channel Linear WLED Driver with Ultra Fast PWM™ Control

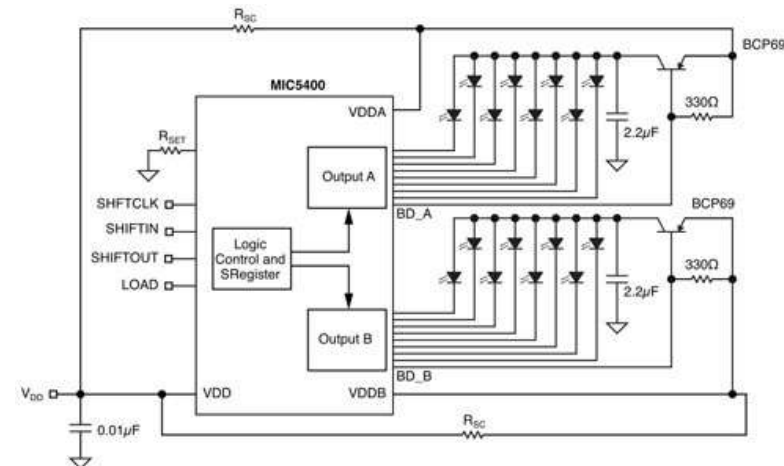
- ◆ High efficiency (no voltage boost losses)
- ◆ Ultra Fast PWM™ control (200Hz to 500kHz)
- ◆ Input voltage range: 3.0V to 5.5V
- ◆ Dropout of 130mV at 400mA
- ◆ Programmable LED current with external resistor
- ◆ Current accuracy of $\pm 1\%$ typical



MIC5400

Dual, 8-Output, 14-Bit LED Video Display Driver

- ◆ Two banks of 8 outputs
- ◆ Output characteristics:
 - ◆ Current sink: 30mA
 - Programmable brightness control
 - Coarse: 4-Bit resolution DAC
 - Fine: 10-Bit resolution PWM
 - Resistor sets maximum LED current to compensate variation in LEDs
 - Current limit on each output
- ◆ Full protection:
 - Over temperature shutdown
 - Watchdog disables output under fault condition
 - Power-on Reset [all LEDs off]
 - Soft-start on power up and watchdog recovery
 - Output open fault detection with status register readback
- ◆ Output transitions are staggered to minimize supply transients

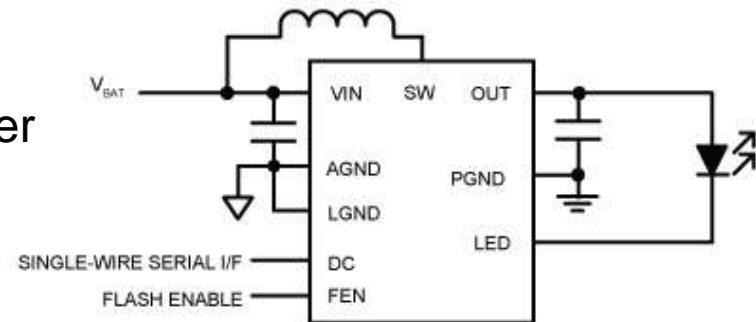




MIC2874

1.2A High-Brightness Flash LED Driver with Single-Wire Serial Interface

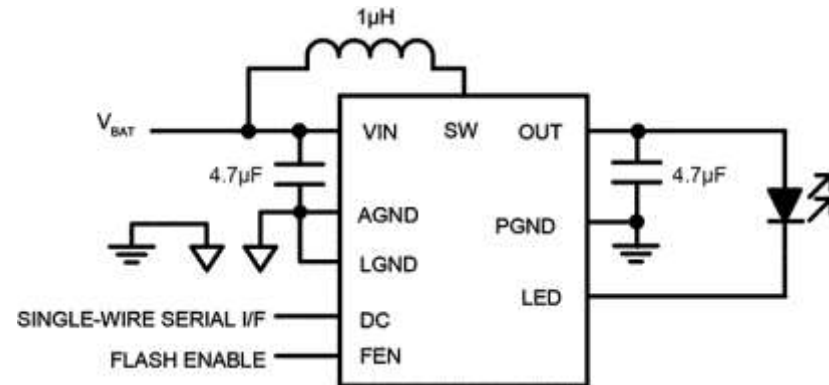
- ◆ Up to 1.2A flash LED driving current
- ◆ Highly efficient synchronous boost driver
- ◆ Input voltage range: 2.7V to 5.5V
- ◆ True load disconnect
- ◆ Configurable safety time-out protection
- ◆ Output overvoltage protection (OVP)
- ◆ Control through single-wire serial interface or external control pin
- ◆ LED short detection and protection
- ◆ 1 μ A shutdown current
- ◆ Available in 9-bump 1.30mm x 1.30mm WLCSP package



MIC2873

1.2A High Brightness Flash LED Driver with Single-Wire Serial Interface

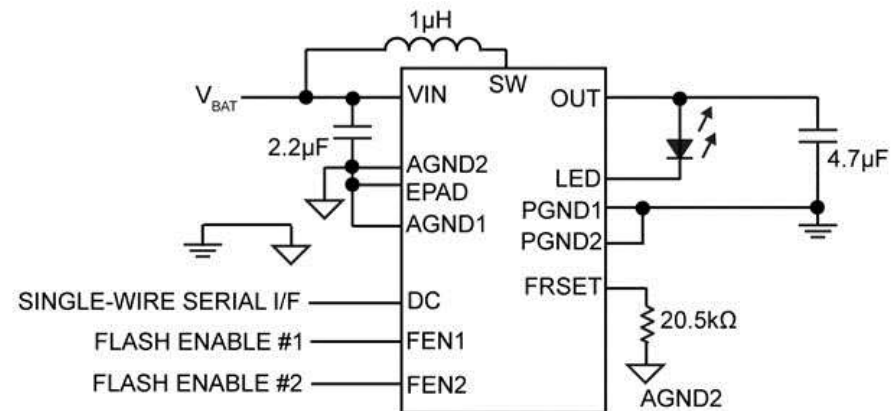
- ◆ Up to 1.2A flash LED driving current
- ◆ Highly efficient synchronous boost driver
- ◆ Input voltage range: 2.7V to 5.5V
- ◆ True load disconnect
- ◆ Configurable safety time-out protection
- ◆ Output overvoltage protection (OVP)
- ◆ LED short detection and protection
- ◆ Control through single-wire serial interface or external control pin
- ◆ 1 μ A shutdown current
- ◆ Available in 9-bump 1.30mm x 1.30mm WLCSP package



MIC2871

1.2A High-Brightness LED Flash Driver with Single-Wire Serial Interface

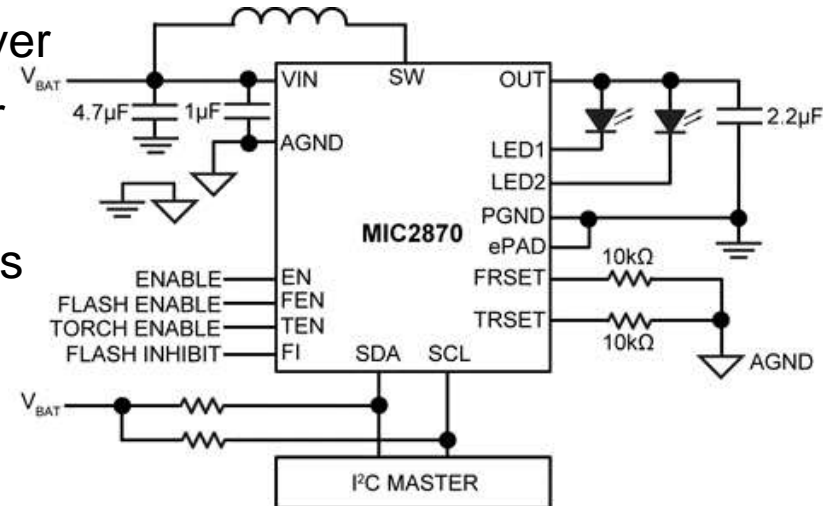
- ◆ Up to 1.2A flash LED driving current
- ◆ $\pm 5\%$ LED current accuracy
- ◆ Input voltage range: 2.7V to 5.5V
- ◆ True load disconnect
- ◆ Configurable safety time-out protection
- ◆ Output overvoltage protection (OVP)
- ◆ Control through single-wire serial interface or external control pins
- ◆ LED short detection and protection
- ◆ Highly efficient, synchronous boost driver (up to 94%)
- ◆ 1 μ A shutdown current
- ◆ Available in 14-pin 3mm x 2mm LDFN package



MIC2870

1.5A Synchronous Boost Flash LED Driver with I2C Interface

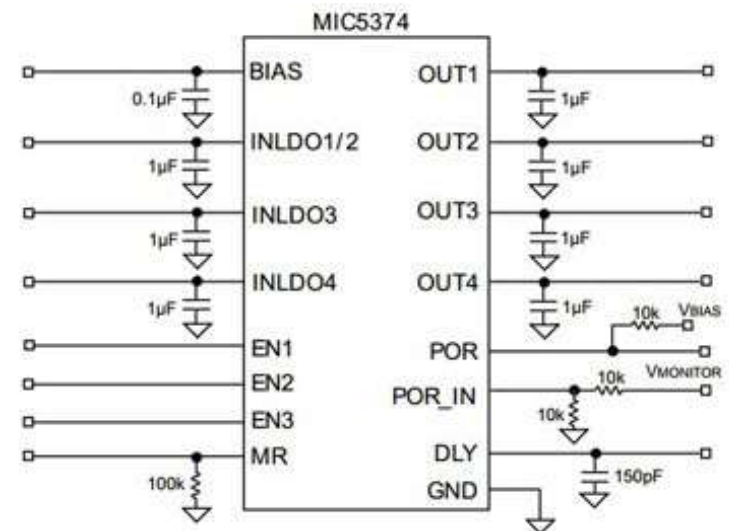
- ◆ Up to 1.5A flash LED driving current with a 2.7V to 5.0V input voltage range
- ◆ High-efficiency 2MHz V_F adaptive boost driver
- ◆ Configurable 1 or 2 channel(s) WLED driver
- ◆ LED driving current soft-start
- ◆ Control through I²C interface or external pins
- ◆ True load disconnect
- ◆ Flash time-out protection
- ◆ 1 μ A shutdown current
- ◆ Available in 16-pin 2mm \times 2mm TQFN package
- ◆ Flash inhibit function for GSM pulse synchronization



MIC5374

Triple 200mA μ Cap LDO and 1mA RTC LDO in 2.5mm x 2.5mm Thin MLF®

- ◆ 1.7V to 5.5V input supply voltage range
- ◆ Output current: 200mA LDO1/2/3, 1mA LDO4
- ◆ LDO4: Ultra low 8 μ A I BIAS for RTC support
- ◆ High output accuracy ($\pm 2\%$)
- ◆ Independent enable pins
- ◆ 2.5mm x 2.5mm Thin MLF® 16-pin package
- ◆ Thermal shutdown and current limit protection
- ◆ POR with user-defined voltage monitoring
- ◆ POR voltage input
- ◆ Adjustable delay time
- ◆ Manual reset pin
- ◆ Low dropout voltage: 170mV at 150mA
- ◆ High PSRR: 55dB at 1kHz on each LDO
- ◆ Stable with tiny ceramic output capacitors

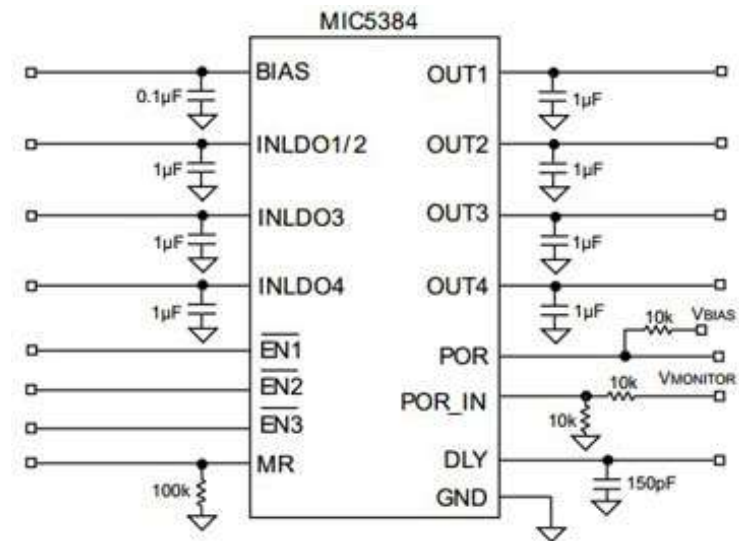


Typical MIC5374-xxxxYMT Circuit

MIC5384

Triple 200mA μ Cap LDO and 1mA RTC LDO in 2.5mm x 2.5mm Thin MLF®

- ◆ 1.7V to 5.5V input supply voltage range
- ◆ Output current: 200mA LDO1/2/3, 1mA LDO4
- ◆ LDO4: Ultra low 8 μ A I BIAS for RTC support
- ◆ High output accuracy ($\pm 2\%$)
- ◆ Independent enable pins
- ◆ 2.5mm x 2.5mm Thin MLF® 16-pin package
- ◆ Thermal shutdown and current limit protection
- ◆ POR with user-defined voltage monitoring
- ◆ POR voltage input
- ◆ Adjustable delay time
- ◆ Manual reset pin
- ◆ Low dropout voltage: 170mV at 150mA
- ◆ High PSRR: 55dB at 1kHz on each LDO
- ◆ Stable with tiny ceramic output capacitors



Typical MIC5384-xxxxYMT Circuit

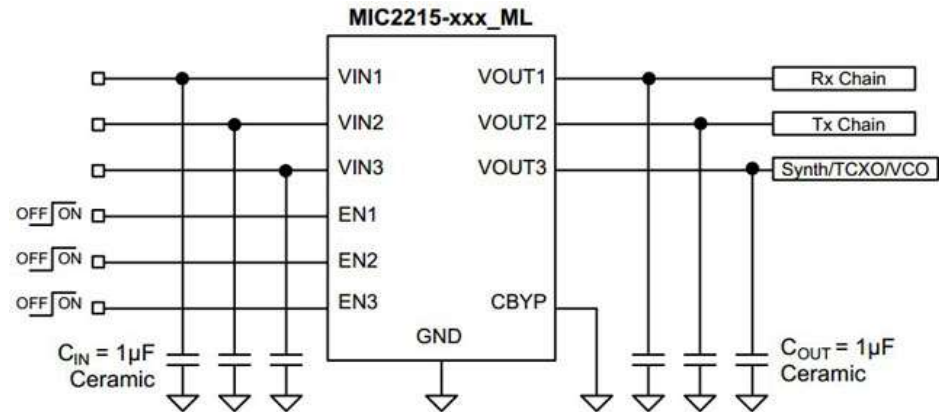




MIC2215

Triple High PSRR, Low Noise μ Cap LDO

- ◆ Input voltage range: +2.25V to +5.5V
- ◆ 70dB PSRR
- ◆ Stable with ceramic output capacitor
- ◆ High output accuracy:
 - ◆ $\pm 1.0\%$ initial accuracy
 - ◆ $\pm 2.0\%$ over temperature
- ◆ Low dropout voltage of 100mV @ 150mA
- ◆ Low quiescent current: 110 μ A per regulator
- ◆ Fast turn-on time: 30 μ s
- ◆ Zero off-mode current
- ◆ Thermal shutdown protection
- ◆ Current-limit protection
- ◆ Tiny 16-pin (4mm x 4mm) MLF[®] package

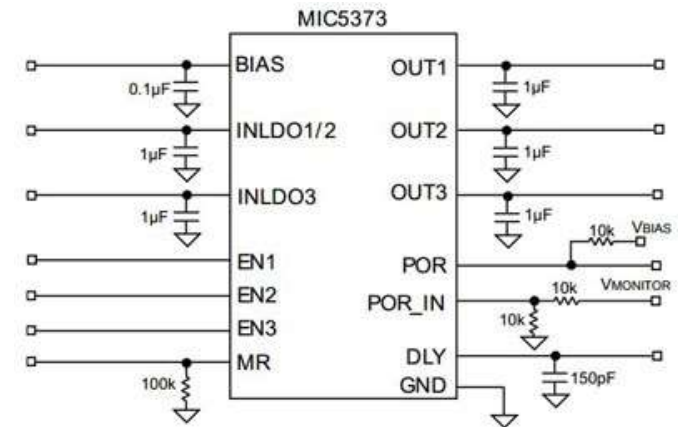




MIC5373/83

Triple 200mA μ Cap LDO in 2.5 x 2.5 Thin MLF[®]

- ◆ 1.7V to 5.5V input supply voltage range
- ◆ Output current: 200mA LDO1/2/3
- ◆ High output accuracy ($\pm 2\%$)
- ◆ Independent enable pins
- ◆ POR with user-defined voltage monitoring
 - POR voltage input
 - Adjustable delay time
 - Manual reset pin
- ◆ Low dropout voltage: 170mV at 150mA
- ◆ High PSRR: 55dB at 1kHz on each LDO
- ◆ Stable with tiny ceramic output capacitors
- ◆ 2.5mm x 2.5mm Thin MLF[®] 16-pin package
- ◆ Thermal shutdown and current limit protection



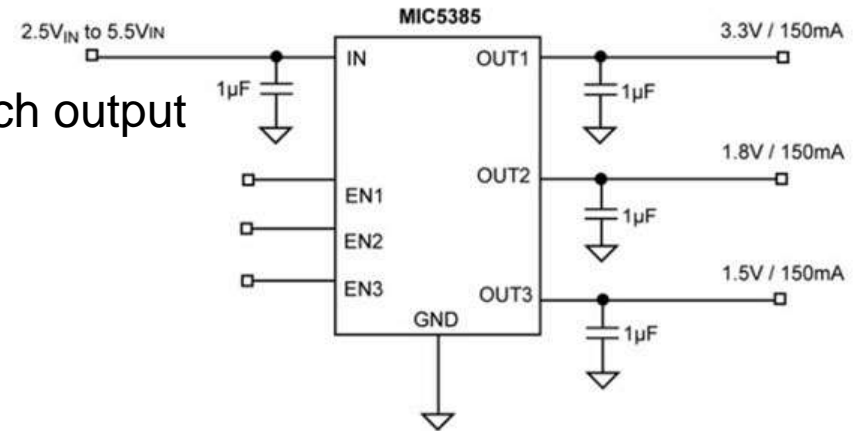
Typical MIC5373-xxxYMT Circuit



MIC5385

Ultra Small Triple 150mA Output LDO

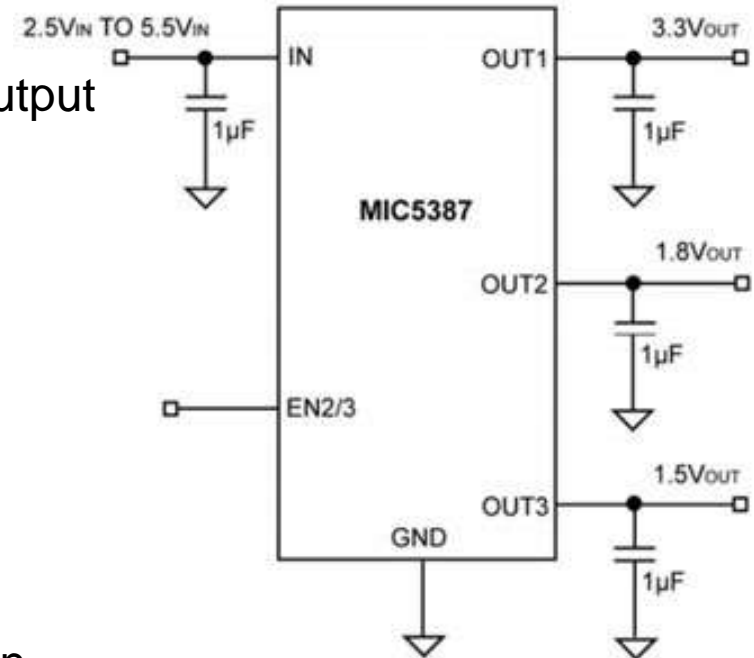
- ◆ Input voltage range: 2.5V to 5.5V
- ◆ 150mA guaranteed output current for each output
- ◆ Stable with ceramic output capacitors
- ◆ Low dropout voltage: 180mV @ 150mA
- ◆ Excellent Load/Line Transient Response
- ◆ Low quiescent current: 32μA per LDO
- ◆ High PSRR: 70dB
- ◆ High output accuracy
 - ±2% initial accuracy
- ◆ Thermal shutdown and current limit protection
- ◆ Available in tiny 2mm x 2mm Thin MLF®



MIC5387

Ultra Small Triple 150mA Output LDO

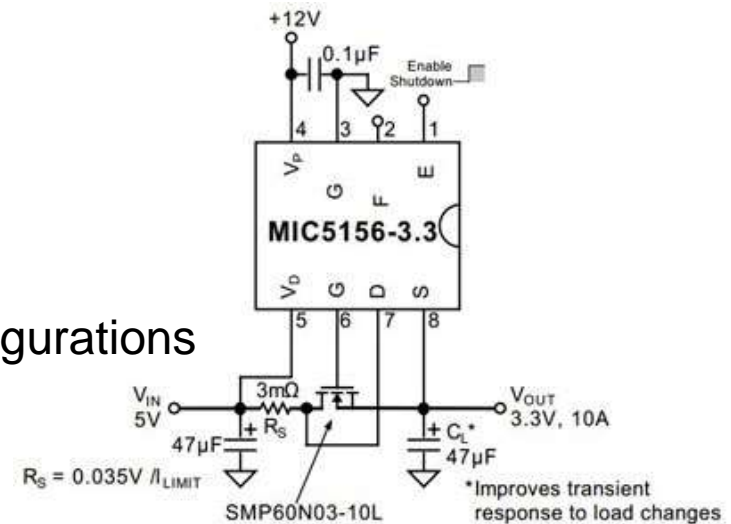
- ◆ Input voltage range: 2.5V to 5.5V
- ◆ 150mA guaranteed output current for each output
- ◆ Stable with ceramic output capacitors
- ◆ Low dropout voltage: 180mV @ 150mA
- ◆ Excellent Load/Line Transient Response
- ◆ Low quiescent current: 32 μ A per LDO
- ◆ High PSRR: 70dB
- ◆ High output accuracy
 - $\pm 2\%$ initial accuracy
- ◆ Thermal-shutdown and current-limit protection
- ◆ Available in a tiny 6-pin 1.6mm x 1.6mm Thin MLF[®]



MIC5156/57/58

Super LDO Regulator Controller

- ◆ 4.5mA typical operating current
- ◆ <1μA typical standby current
- ◆ Low external parts count
- ◆ Optional current limit (35mV typical threshold)
- ◆ 1% initial output voltage tolerance in most configurations
- ◆ 2% output voltage tolerance over temperature
- ◆ Fixed output voltages of 3.3V, 5.0V (MIC5156)
- ◆ Fixed output voltages of 3.3V, 5.0V, 12V (MIC5157)
- ◆ Programmable (1.3V to 36V) with 2 resistors (MIC5156/8)
- ◆ Internal charge pump voltage tripler (MIC5157/8)
- ◆ Enable pin to activate or shutdown the regulator
- ◆ Internal gate-to-source protective clamp
- ◆ All versions available in DIP and SOIC

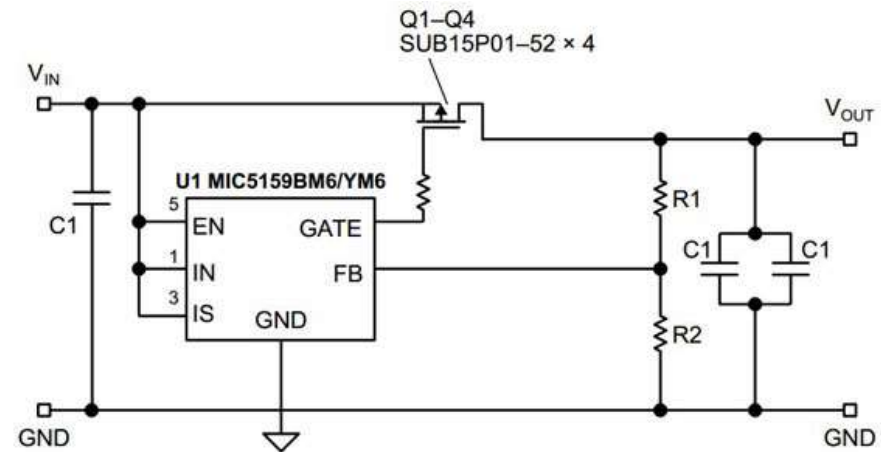




MIC5159

Programmable Current Limit μ Cap LDO Regulator Controller

- ◆ Fast transient response
- ◆ Input voltage range: V_{IN} : 1.65V to 5.5V
- ◆ $\pm 1.0\%$ initial output tolerance
- ◆ Stable with ceramic output capacitor
- ◆ Capable up to 10A
- ◆ Logic-controlled shutdown
- ◆ Programmable current limit
- ◆ Excellent line and load regulation specifications
- ◆ Fixed 1.8V or adjustable output voltage down to 1.25V
- ◆ Current limit protection
- ◆ IttyBitty® SOT-23-6 Package
- ◆ Available temperature range: -40°C to $+125^{\circ}\text{C}$

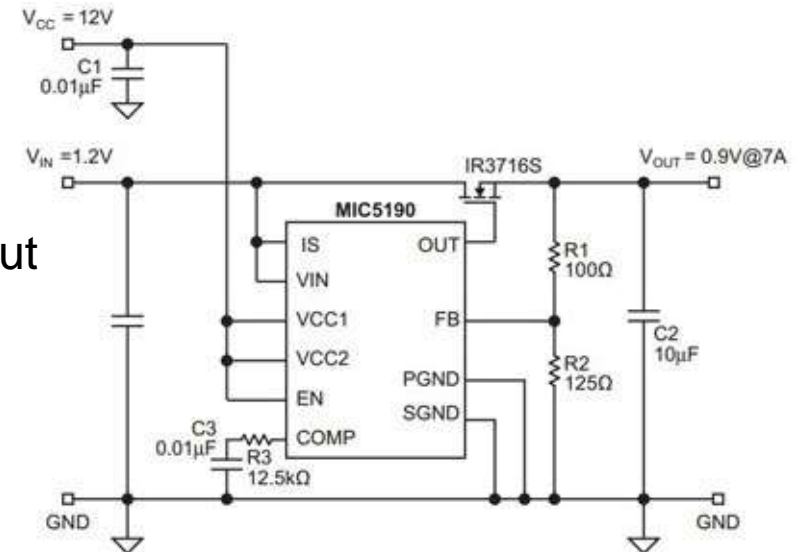




MIC5190

Ultra High-Speed, High-Current Active Filter/LDO Controller

- ◆ Input voltage range:
 - $V_{IN} = 0.9V$ to $5.5V$
- ◆ $\pm 1.0\%$ initial output tolerance
- ◆ Dropout down to $25mV$ @ $10A$
- ◆ Filters out switching frequency noise on input
- ◆ Very high large signal bandwidth $>500kHz$
- ◆ PSRR $>40dB$ at $500kHz$
- ◆ Adjustable output voltage down to $0.5V$
- ◆ Stable with any output capacitor
- ◆ Excellent line and load regulation specifications
- ◆ Logic controlled shutdown
- ◆ Current limit protection
- ◆ $3mm \times 3mm$ 10-lead MLF[®] and MSOP-10 packages
- ◆ Available $-40^{\circ}C$ to $+125^{\circ}C$ junction temperature

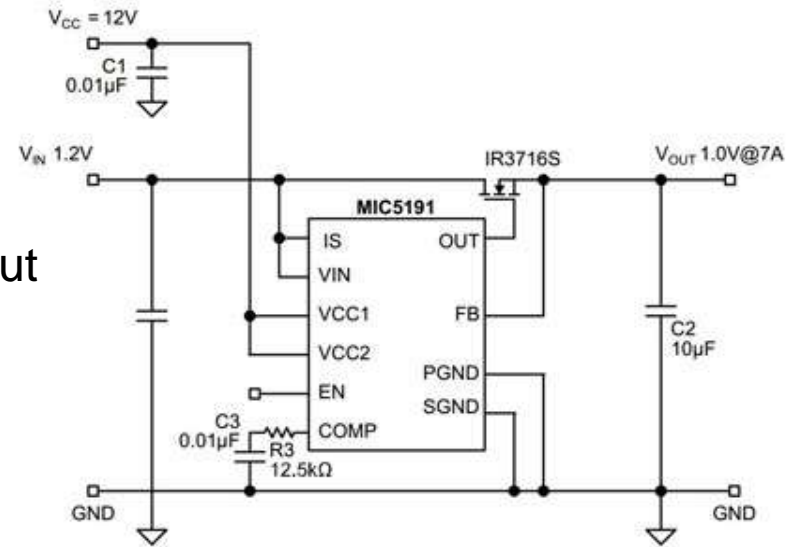




MIC5191

Ultra High-Speed, High-Current Active Filter/LDO Controller

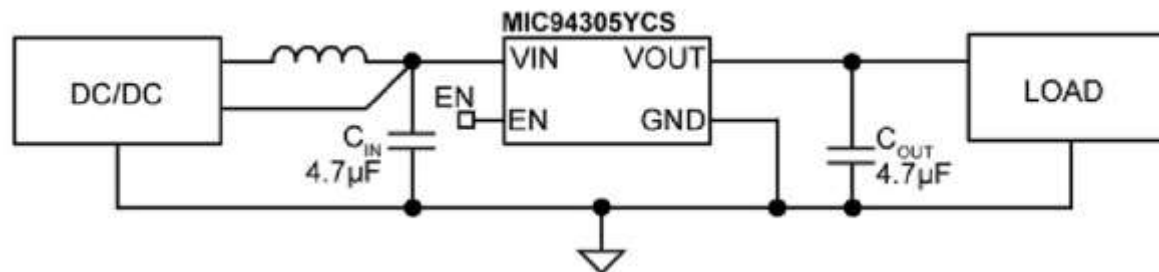
- ◆ Input voltage range:
 - $V_{IN} = 1.0V$ to $5.5V$
- ◆ $\pm 1.0\%$ initial output tolerance
- ◆ Dropout down to $25mV$ @ $10A$
- ◆ Filters out switching frequency noise on input
- ◆ Very high large signal bandwidth $>500kHz$
- ◆ PSRR $>40dB$ at $500kHz$
- ◆ Adjustable output voltage down to $1.0V$
- ◆ Stable with any output capacitor
- ◆ Excellent line and load regulation specifications
- ◆ Logic controlled shutdown
- ◆ Current limit protection
- ◆ 10-lead MLF[®] and MSOP-10 packages
- ◆ Available $-40^{\circ}C$ to $+125^{\circ}C$ junction temperature



MIC94305

500mA Switch with Ripple Blocker™ Technology

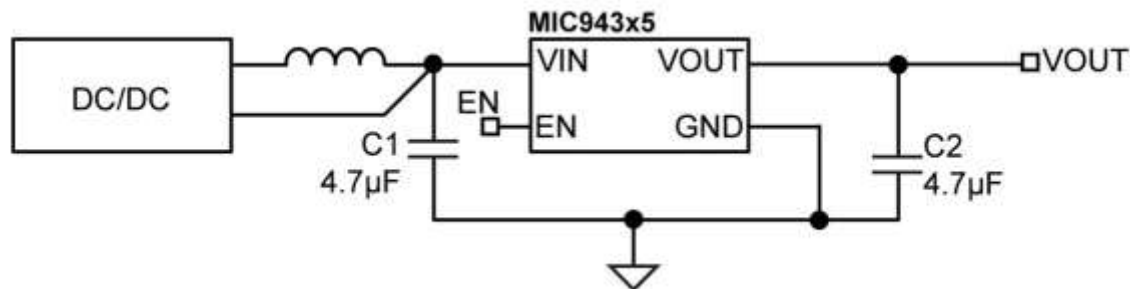
- ◆ 1.8V to 3.6V input voltage range
- ◆ Active noise rejection over a wide frequency band: >60dB from 40kHz to 5MHz
- ◆ Rated to 500mA output current
- ◆ Current-limit and thermal-limit protected
- ◆ Ultra-small 0.84mm x 1.32mm 6-ball CSP
- ◆ 1.6mm x 1.6mm, 6-pin Thin DFN
- ◆ Logic-controlled enable pin
- ◆ -40°C to +125°C junction temperature range



MIC94325/45/55

500mA LDO with Ripple Blocker™ Technology

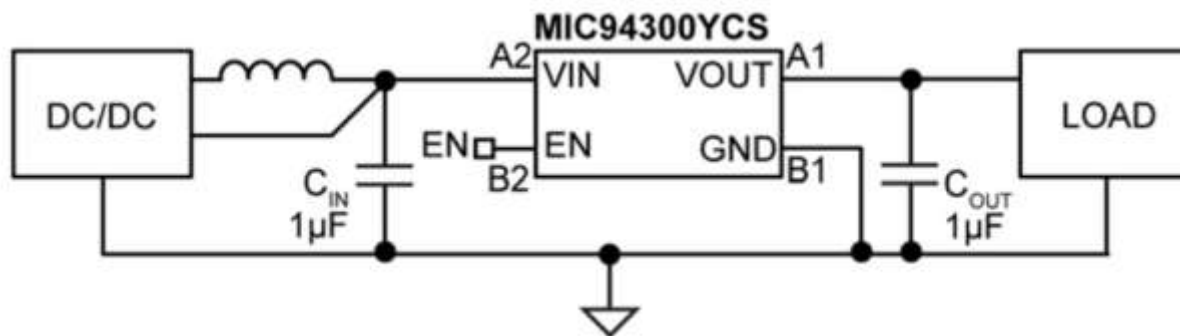
- ◆ 1.8V to 3.6V input voltage range
- ◆ Active noise rejection over a wide frequency band: >50dB from 10Hz to 5MHz at 500mA load
- ◆ Rated to 500mA output current
- ◆ Fixed and adjustable output voltages
- ◆ Optional output auto-discharge when disabled
- ◆ Current-limit and thermal-limit protected
- ◆ Ultra-small 0.84mm x 1.32mm 6-ball CSP
- ◆ 1.6mm x 1.6mm, 6-pin Thin DFN
- ◆ -40°C to +125°C junction temperature range



MIC94300

200mA Switch with Ripple Blocker™ Technology

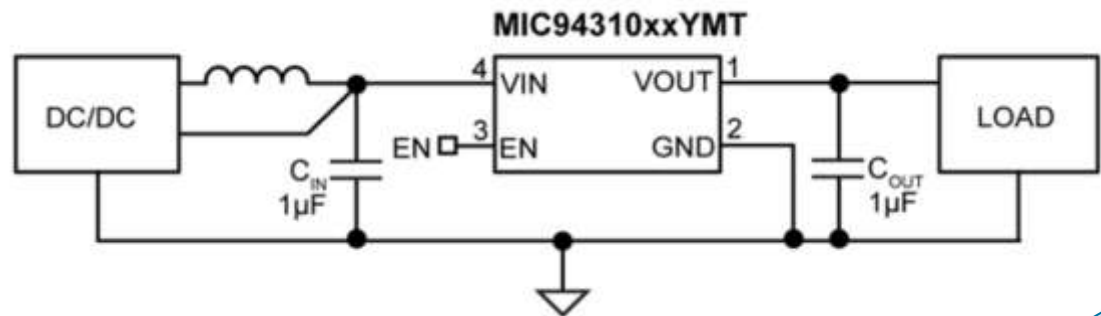
- ◆ 1.8V to 3.6V input voltage range
- ◆ Active noise rejection over a wide frequency band: >60dB from 40kHz to 5MHz
- ◆ Rated to 200mA output current
- ◆ Current-limit and thermal-limit protected
- ◆ Ultra-small 0.88mm x 0.88mm 4-ball CSP
- ◆ 1.2mm x 1.6mm, 4-pin Thin MLF®
- ◆ Logic-controlled enable pin
- ◆ -40°C to +125°C junction temperature range



MIC94310

200mA LDO with Ripple Blocker™ Technology

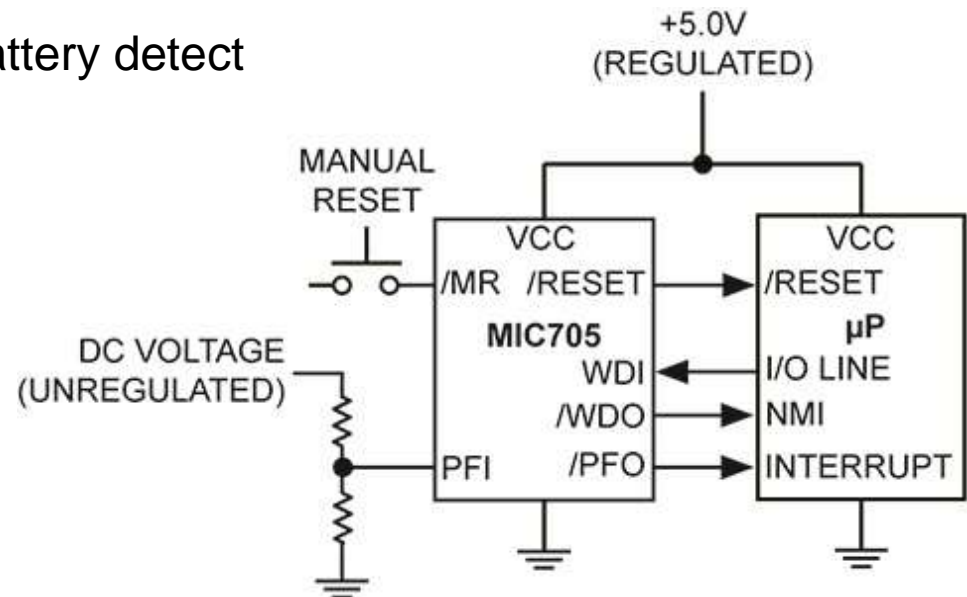
- ◆ 1.8V to 3.6V input voltage range
- ◆ Active noise rejection over a wide frequency band: >50dB from 10Hz to 10MHz at 200mA load
- ◆ Rated to 200mA output current
- ◆ -40°C to +125°C junction temperature range
- ◆ Fixed output voltages
- ◆ Current-limit and thermal-limit protected
- ◆ Ultra-small 0.88mm x 0.88mm 4-ball CSP
- ◆ 1.2mm x 1.6mm, 4-pin Thin DFN
- ◆ 5-pin SOT-23
- ◆ Logic-controlled enable pin



MIC705/6

μP Supervisory Circuit

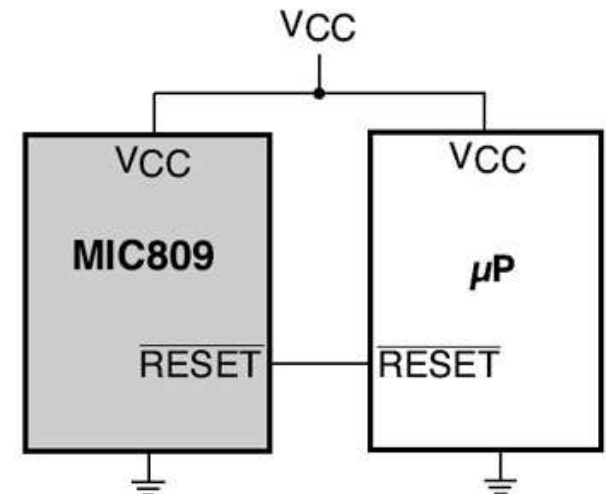
- ◆ Debounced manual reset input is TTL/CMOS Compatible
- ◆ Reset pulse width: 200ms
- ◆ Watchdog timer, 1.6s (MIC705/706)
- ◆ 4.65V or 4.40V Precision Voltage Monitor
- ◆ Early power fail warning or low battery detect



MIC809

Microprocessor Reset Circuits

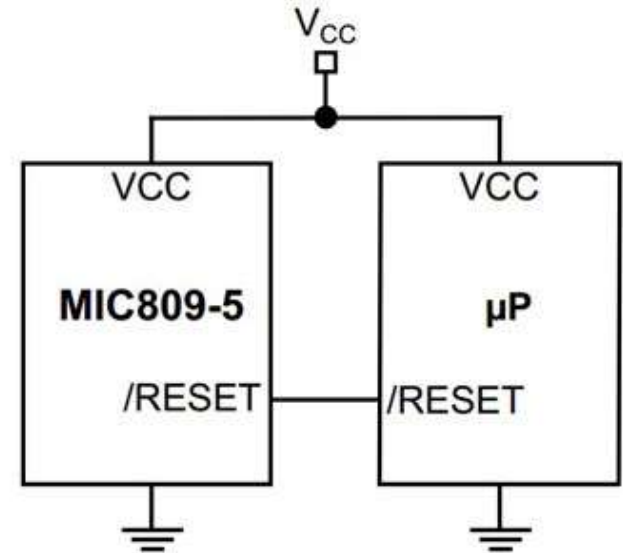
- ◆ Precision voltage monitor for 3V, 3.3V or 5V power supplies
- ◆ /RESET remains valid with V_{CC} as low as 1.4V for SOT-23 packaged part
- ◆ /RESET remains valid with V_{CC} as low as 1V for SC70 packaged part
- ◆ Typically less than 15 μ A supply current for SOT-23 packaged part
- ◆ 5 μ typical supply current for SC70 packaged part
- ◆ 140ms minimum reset pulse widths available
- ◆ Available in 3-pin SOT-23 and SC-70 package



MIC809-5

Microprocessor Reset Circuit

- ◆ Undervoltage monitor
- ◆ Power-on-Reset generation (30ms minimum)
- ◆ Choice of threshold voltages
- ◆ Active-low reset output
- ◆ No external components required
- ◆ Rejects brief input transients
- ◆ Industry standard package and pinout
- ◆ 3-pin IttyBitty™ SOT23-3 package and SC-70 package

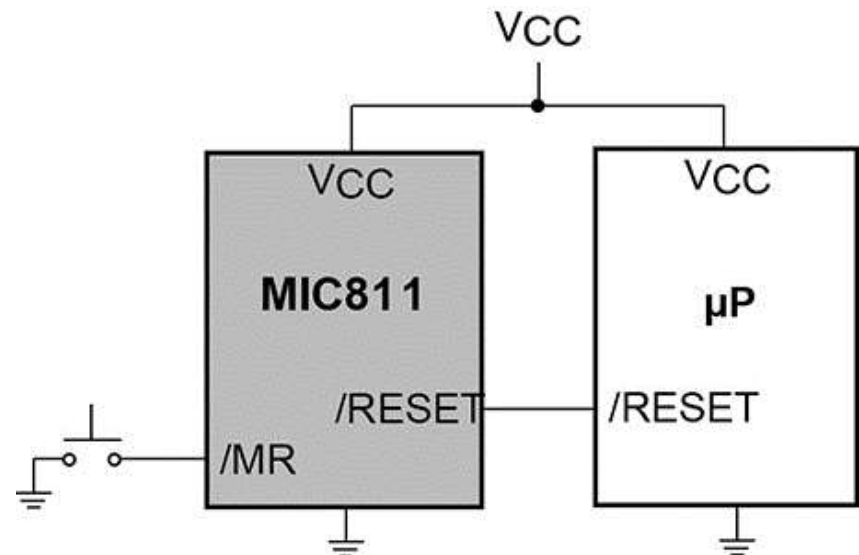




MIC811

Microprocessor Reset Circuits

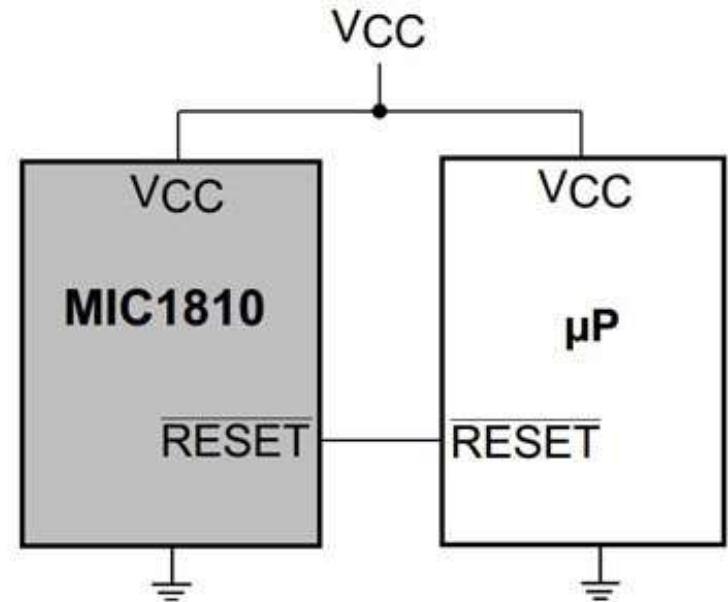
- ◆ Precision voltage monitor for 3V, 3.3V or 5V power supplies
- ◆ /RESET remains valid with V_{CC} as low as 1V
- ◆ 5 μ A typical supply current
- ◆ 140ms minimum reset pulse width available
- ◆ Manual reset input
- ◆ Available in 4-pin SOT-143 package



MIC1810

Microprocessor Reset Circuit

- ◆ Precision voltage monitor for 5%, 10%, or 15% drop in 5V power supplies
- ◆ $\overline{\text{RESET}}$ remains valid with V_{CC} as low as 1V
- ◆ 5 μ A supply current (typical)
- ◆ 100ms minimum reset pulse width
- ◆ No external components required
- ◆ Available in 3-pin SOT-23 package

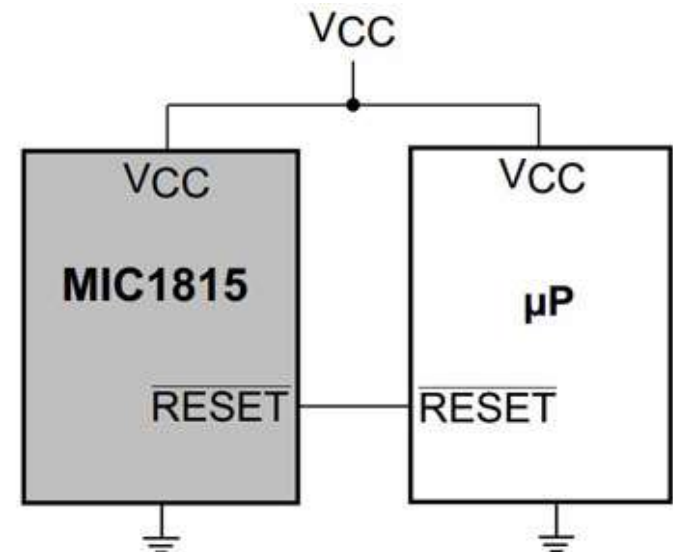




MIC1815

Microprocessor Reset Circuit

- ◆ Precision voltage monitor for 10% or 20% drop in 3.3V power supplies
- ◆ /RESET remains valid with V_{CC} as low as 1V
- ◆ 5 μ A supply current
- ◆ 100ms minimum reset pulse width
- ◆ No external components required
- ◆ Available in 3-pin SOT-23 package

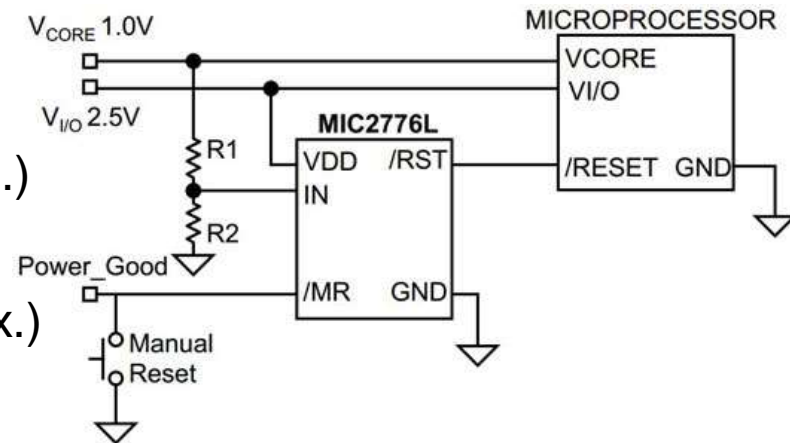




MIC2776L

Micro-Power Low Voltage Supervisor

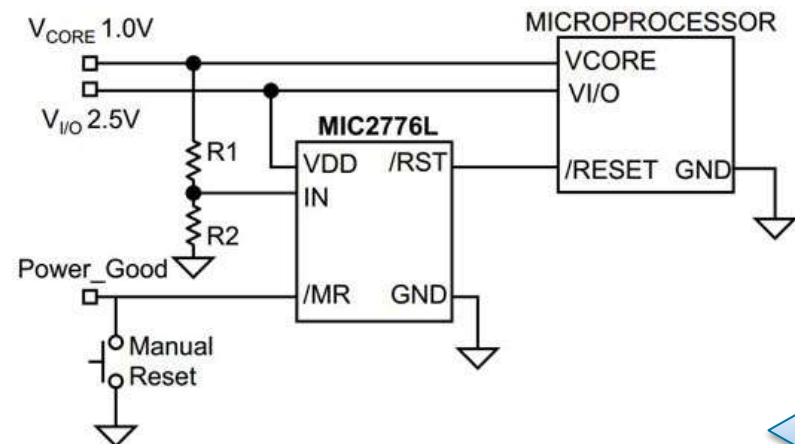
- ◆ $\pm 1.5\%$ threshold accuracy
- ◆ Separate V_{DD} input
- ◆ Generates power-on reset pulse (140ms min.)
- ◆ Manual reset input
- ◆ Inputs can be pulled above V_{DD} (7V abs. max.)
- ◆ Ultra-low supply current, 3.0 μ A typical
- ◆ Rejects brief input transients
- ◆ User-adjustable input can monitor supplies as low as 0.3V
- ◆ Choice of active-high, active-low or open-drain activelow reset output
- ◆ IttyBitty® SOT-23-5 package
- ◆ Open-drain output can be pulled above V_{DD} (7V abs. max.)



MIC2779L

Voltage Monitor with Adjustable Hysteresis

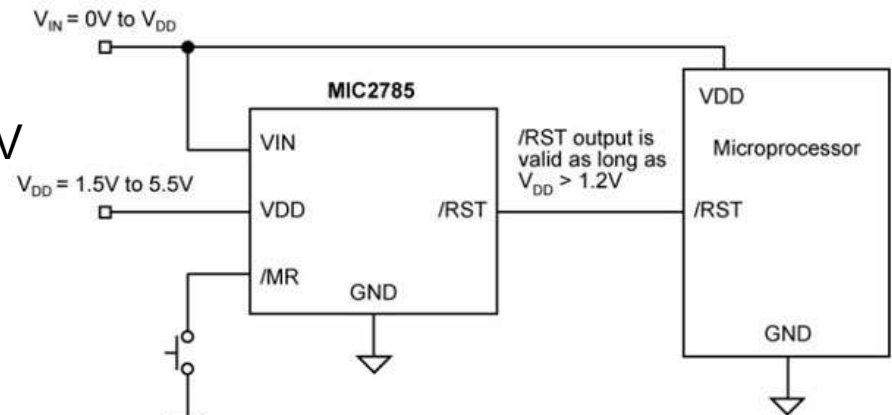
- ◆ Optimized for PDAs, cellular telephones, pagers, and other battery-powered devices
- ◆ Independently adjustable high- and low-voltage thresholds
- ◆ Internal logic prevents battery-voltage-fluctuation chatter
- ◆ For applications requiring open-drain output, see MIC2778/MIC833
- ◆ High $\pm 2\%$ voltage threshold accuracy; 1% available
- ◆ Built in 140ms (minimum) delay deglitches output
- ◆ Extremely low $1\mu\text{A}$ typical supply current
- ◆ Immune to brief power supply transients
- ◆ 5-lead SOT-23 package



MIC2785

Dual Supply Voltage Monitor with Manual Reset

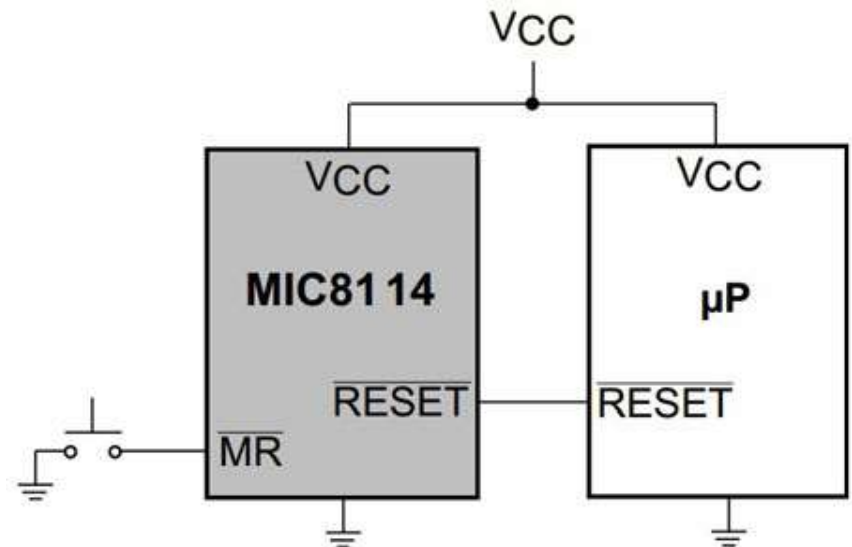
- ◆ No external components
- ◆ Monitors input voltage for under-voltage condition
- ◆ $\pm 1.5\%$ V_{IN} threshold voltage accuracy
- ◆ Valid /RST state with V_{IN} down to 0.0V
- ◆ Valid /RST state with V_{DD} down to 1.20V
- ◆ Factory-programmed 1.62V reference
- ◆ Manual reset input (/MR)
- ◆ Active low RESET (/RST) output
- ◆ Ultra-low input current - 5 μ A total (V_{IN} and V_{DD})
- ◆ Rejects brief input transients
- ◆ -25°C to 85°C operating temperature range
- ◆ RoHS lead-free compliant
- ◆ Available in tiny 6-pin 1.2mm x 1.2mm Thin MLF[®] package



MIC8114

Microprocessor Reset Circuit

- ◆ Precision voltage monitor for 3.3V power supplies
- ◆ Specifically tailored to the AMD Elan SC400/410
- ◆ /RESET remains valid with V_{CC} as low as 1V
- ◆ 5 μ A typical supply current
- ◆ 790ms minimum reset pulse width
- ◆ Manual reset input
- ◆ Available in 4-Pin SOT-143 Package

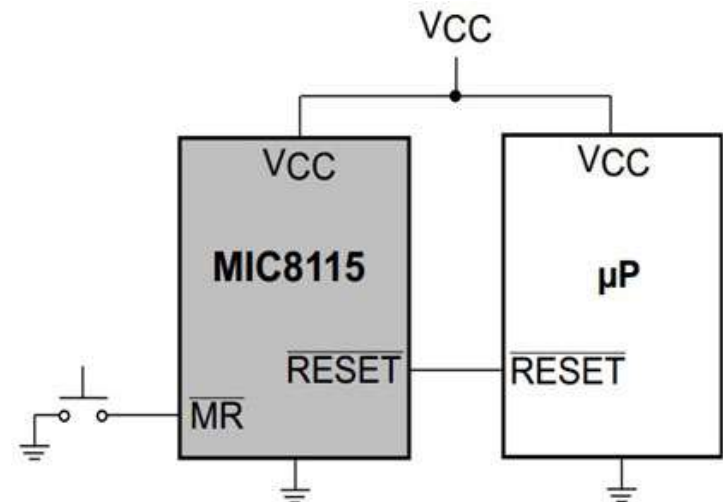




MIC8115

Microprocessor Reset Circuit

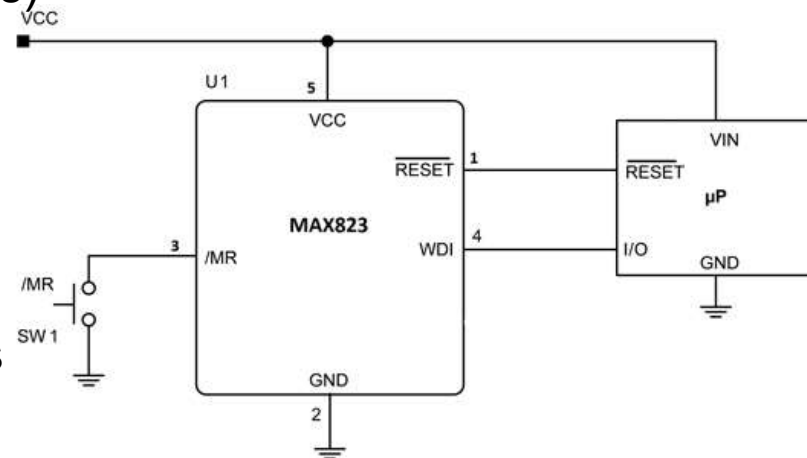
- ◆ Precision voltage monitor for 3.3V power supplies
- ◆ Specifically tailored to the AMD Elan SC500 Series
- ◆ /RESET remains valid with V_{CC} as low as 1V
- ◆ 5 μ A typical supply current
- ◆ 1100ms minimum reset pulse width
- ◆ Manual reset input
- ◆ Available in 4-Pin SOT-143 Package



MAX823

Voltage Supervisor with Watchdog Timer and Manual Reset

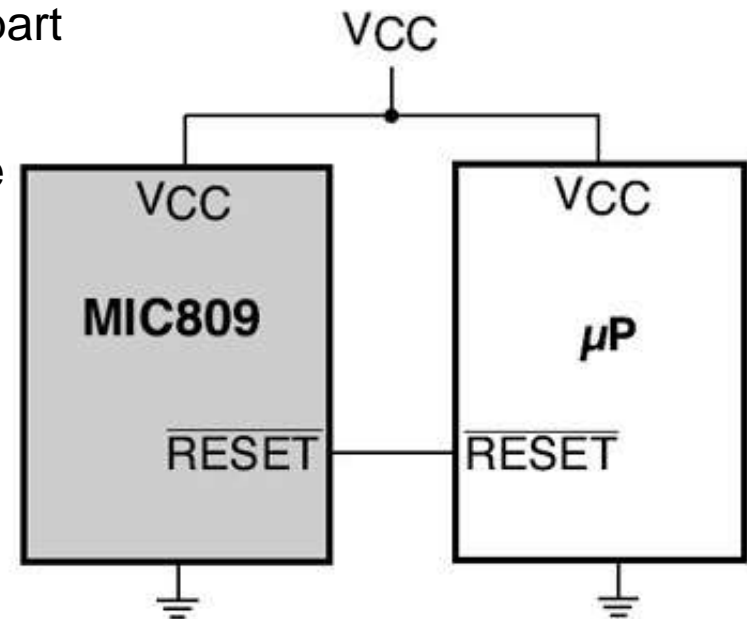
- ◆ Precision 1.665V to 4.625V power supply monitor
- ◆ $\pm 0.5\%$ threshold accuracy at $T_A = +25^\circ\text{C}$
- ◆ $\pm 1.5\%$ threshold accuracy from $T_A = -40^\circ\text{C}$ to $+125^\circ\text{C}$
- ◆ $3.8\mu\text{A}$ supply current (S, R, T, W, Y, Z options)
- ◆ $4.8\mu\text{A}$ supply current (L, M options)
- ◆ Manual reset input (MAX823/5)
- ◆ 140ms (min.) reset timeout period
- ◆ 1.6s (typ.) watchdog timeout period
- ◆ Active-high and active-low push-pull outputs
- ◆ Guaranteed reset output valid to $V_{CC} = 1\text{V}$
- ◆ -40°C to $+125^\circ\text{C}$ junction temperature range
- ◆ 5-pin SOT23 and SC70 packages
- ◆ 8x lower watchdog input current than competition



MIC810

Microprocessor Reset Circuits

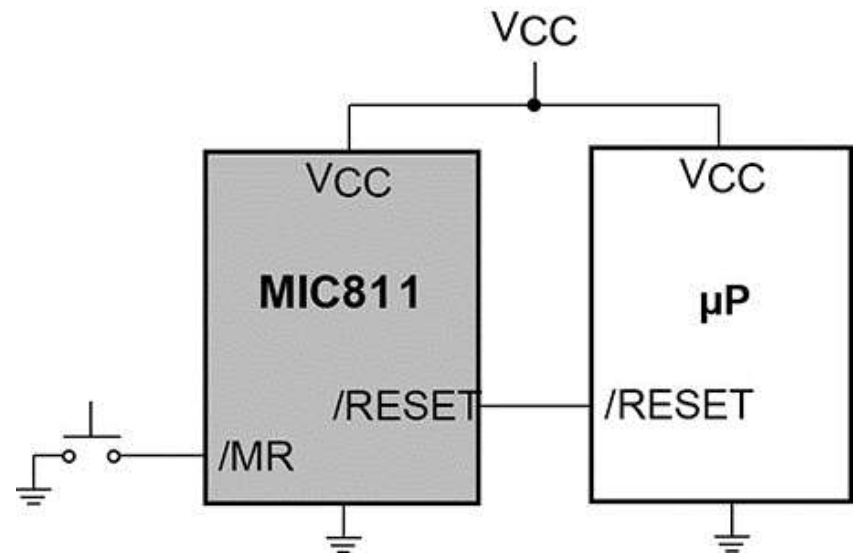
- ◆ Precision voltage monitor for 3V, 3.3V or 5V power supplies
- ◆ /RESET remains valid with V_{CC} as low as 1.4V for SOT-23 packaged part
- ◆ /RESET remains valid with V_{CC} as low as 1V for SC70 packaged part
- ◆ Typically less than 15 μ A supply current for SOT-23 packaged part
- ◆ 5 μ typical supply current for SC70 packaged part
- ◆ 140ms minimum reset pulse widths available
- ◆ Available in 3-pin SOT-23 and SC-70 package



MIC812

Microprocessor Reset Circuits

- ◆ Precision voltage monitor for 3V, 3.3V or 5V power supplies
- ◆ /RESET remains valid with V_{CC} as low as 1V
- ◆ 5 μ A typical supply current
- ◆ 140ms minimum reset pulse width available
- ◆ Manual reset input
- ◆ Available in 4-pin SOT-143 package

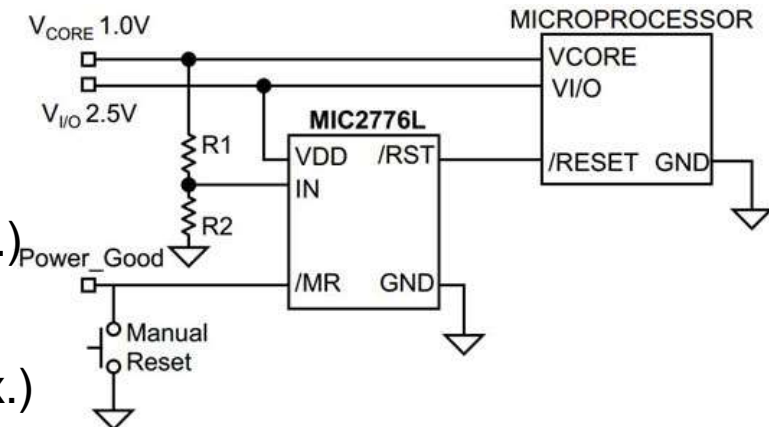




MIC2776H

Micro-Power Low Voltage Supervisor

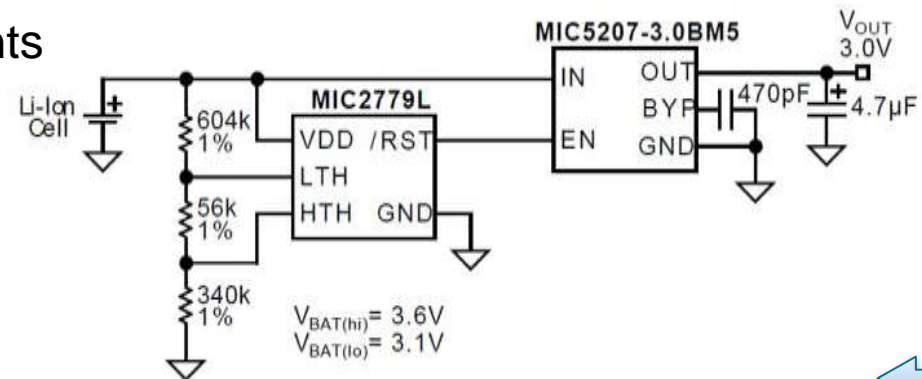
- ◆ $\pm 1.5\%$ threshold accuracy
- ◆ Separate V_{DD} input
- ◆ Generates power-on reset pulse (140ms min.)
- ◆ Manual reset input
- ◆ Inputs can be pulled above V_{DD} (7V abs. max.)
- ◆ Open-drain output can be pulled above V_{DD} (7V abs. max.)
- ◆ Ultra-low supply current, 3.0 μ A typical
- ◆ Rejects brief input transients
- ◆ Choice of active-high, active-low or open-drain active-low reset output
- ◆ IttyBitty® SOT-23-5 package
- ◆ User-adjustable input can monitor supplies as low as 0.3V



MIC2779H

Voltage Monitor with Adjustable Hysteresis

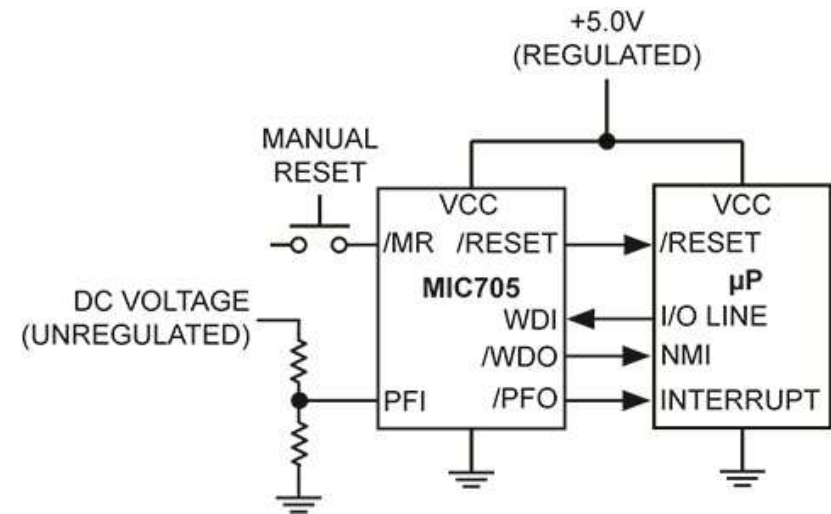
- ◆ Optimized for PDAs, cellular telephones, pagers, and other battery-powered devices
- ◆ Independently adjustable high- and low-voltage thresholds
- ◆ For applications requiring open-drain output, see MIC2778/MIC833
- ◆ Internal logic prevents battery-voltage-fluctuation chatter
- ◆ High $\pm 2\%$ voltage threshold accuracy; 1% available
- ◆ Built in 140ms (minimum) delay deglitches output
- ◆ Extremely low $1\mu\text{A}$ typical supply current
- ◆ Immune to brief power supply transients
- ◆ 5-lead SOT-23 package



MIC707/8

μP Supervisory Circuit

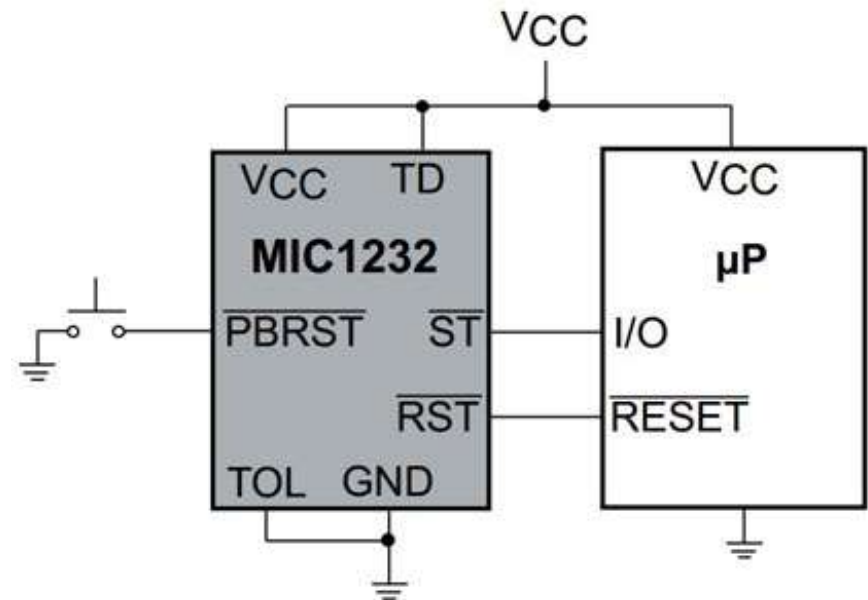
- ◆ Debounced manual reset input is TTL/CMOS Compatible
- ◆ Reset pulse width: 200ms
- ◆ Watchdog timer, 1.6s (MIC705/706)
- ◆ 4.65V or 4.40V Precision Voltage Monitor
- ◆ Early power fail warning or low battery detect



MIC1232

μP Supervisory Circuit

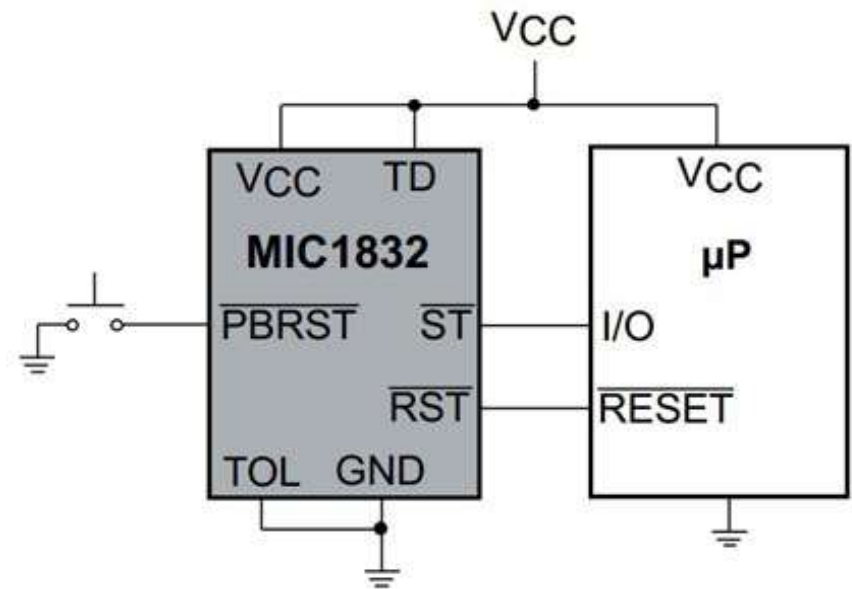
- ◆ Power OK/Reset time delay, 250ms min.
- ◆ Watchdog timer, 150ms, 600ms, or 1.2s typical
- ◆ Precision supply voltage monitor, select between 5% or 10% of supply voltage
- ◆ Available in 8-pin surface mount (SO)
- ◆ Debounced External reset input
- ◆ Low supply current, <18μA typical



MIC1832

μP Supervisory Circuit

- ◆ Power OK/Reset time delay, 250ms min.
- ◆ Watchdog timer, 150ms, 600ms, or 1.2s typical
- ◆ Precision supply voltage monitor, select between 5% or 10% of supply voltage
- ◆ Available in 8-pin surface mount (SO)
- ◆ Debounced External reset input
- ◆ Low supply current, <18μA typical

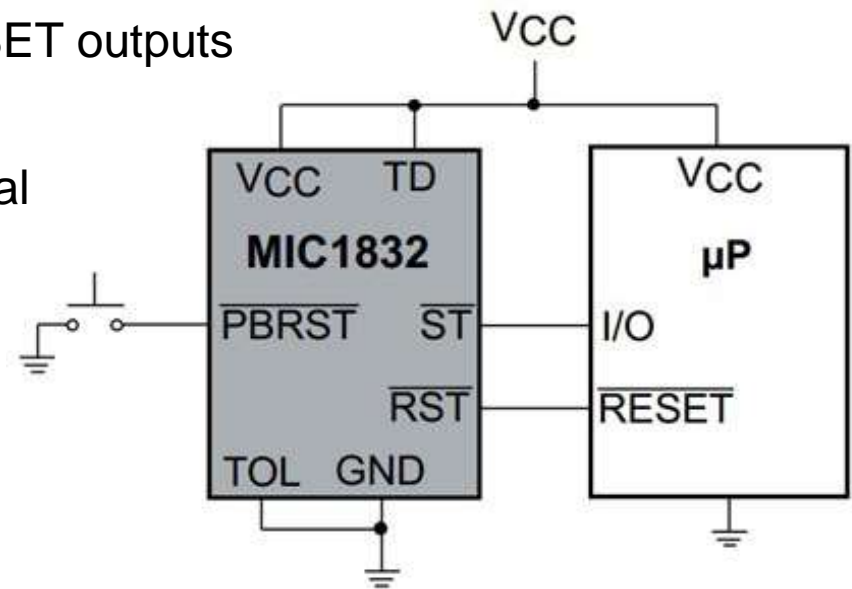




MIC2775

Micro-Power Voltage Supervisor

- ◆ Monitors power supply for under-voltage conditions
- ◆ Choice of factory-programmed thresholds
- ◆ Generates 140ms (minimum) power-on RESET pulse
- ◆ Manual reset capability
- ◆ Both active-high and active-low RESET outputs
- ◆ /RST output valid down to 1.2V
- ◆ Ultra-low supply current, 3.5μA typical
- ◆ Rejects brief input transients
- ◆ No external components
- ◆ Pin compatible upgrade for MAX825
- ◆ IttyBitty® 5-pin SOT-23 package

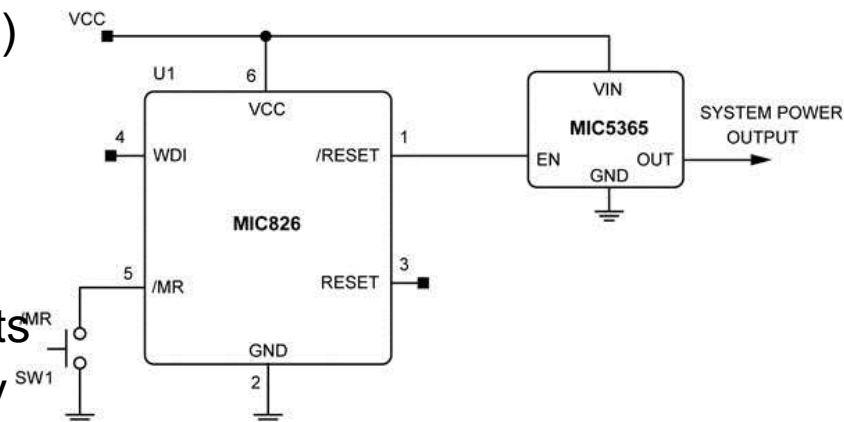


MIC826



Voltage Supervisor with Watchdog Timer, Manual Reset, and Dual Outputs in 1.6mm x 1.6mm TDFN

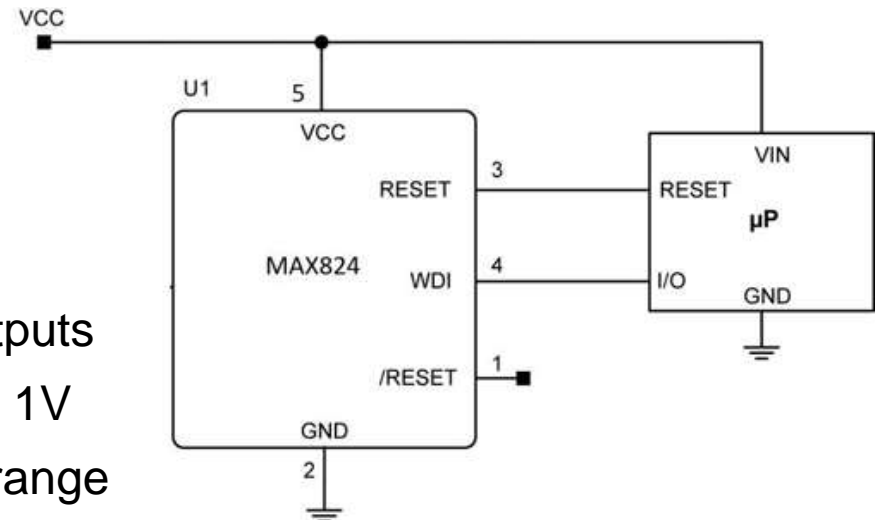
- ◆ Precision 1.8V to 5V power supply monitor
- ◆ $\pm 0.5\%$ threshold accuracy at $T_A = +25^\circ\text{C}$
- ◆ $\pm 1.5\%$ threshold accuracy from $T_A = -40^\circ\text{C}$ to $+125^\circ\text{C}$
- ◆ $3.8\mu\text{A}$ supply current (MIC826S/R/T/W/Y/Z)
- ◆ $4.8\mu\text{A}$ supply current (MIC826L/M)
- ◆ 140ms (min.) reset timeout period
- ◆ 1.6s (typ.) watchdog timeout period
- ◆ Active-high and active-low push-pull outputs
- ◆ Guaranteed reset output valid to $V_{CC} = 1\text{V}$
- ◆ -40°C to $+125^\circ\text{C}$ junction temperature range
- ◆ 6-pin 1.6mm x 1.6mm x 0.5mm Thin DFN package
- ◆ 50% smaller version of MAX823/MAX824/MAX825/ADM823/ADM824/ADM825
- ◆ 8x lower watchdog input current than competition



MAX824

Voltage Supervisor with Watchdog Timer and Manual Reset

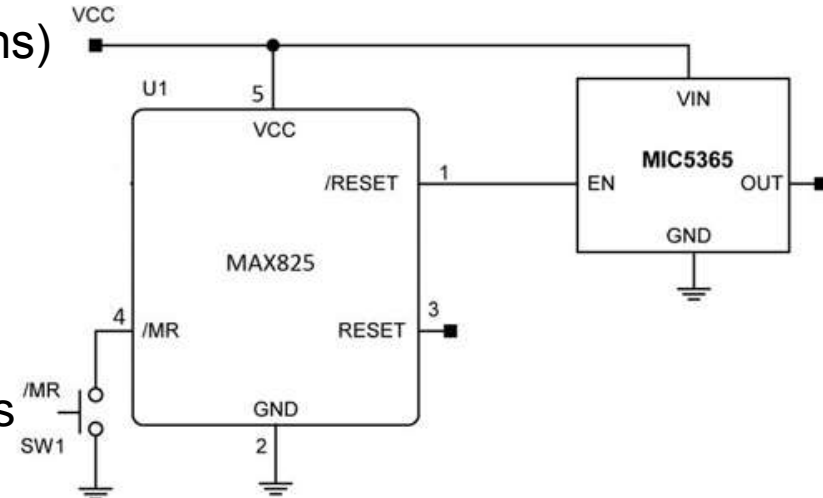
- ◆ Precision 1.665V to 4.625V power supply monitor
- ◆ $\pm 0.5\%$ threshold accuracy at $T_A = +25^\circ\text{C}$
- ◆ $\pm 1.5\%$ threshold accuracy from $T_A = -40^\circ\text{C}$ to $+125^\circ\text{C}$
- ◆ $3.8\mu\text{A}$ supply current (S, R, T, W, Y, Z options)
- ◆ $4.8\mu\text{A}$ supply current (L, M options)
- ◆ Manual reset input (MAX823/5)
- ◆ 140ms (min.) reset timeout period
- ◆ 1.6s (typ.) watchdog timeout period
- ◆ Active-high and active-low push-pull outputs
- ◆ Guaranteed reset output valid to $V_{CC} = 1\text{V}$
- ◆ -40°C to $+125^\circ\text{C}$ junction temperature range
- ◆ 5-pin SOT23 and SC70 packages
- ◆ 8x lower watchdog input current than competition



MAX825

Voltage Supervisor with Watchdog Timer and Manual Reset

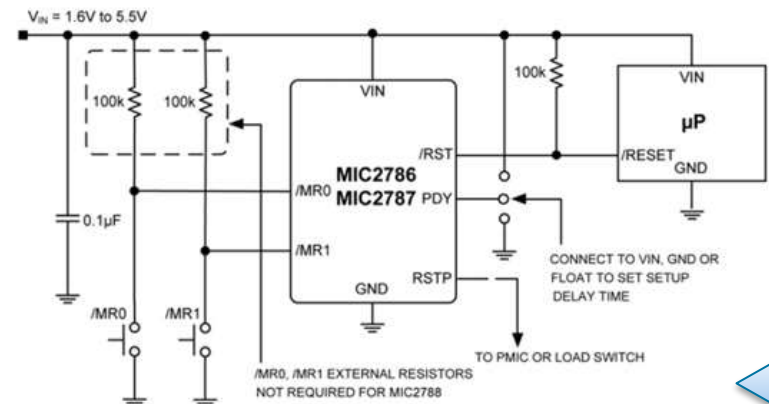
- ◆ Precision 1.665V to 4.625V power supply monitor
- ◆ $\pm 0.5\%$ threshold accuracy at $T_A = +25^\circ\text{C}$
- ◆ $\pm 1.5\%$ threshold accuracy from $T_A = -40^\circ\text{C}$ to $+125^\circ\text{C}$
- ◆ $3.8\mu\text{A}$ supply current (S, R, T, W, Y, Z options)
- ◆ $4.8\mu\text{A}$ supply current (L, M options)
- ◆ Manual reset input (MAX823/5)
- ◆ 140ms (min.) reset timeout period
- ◆ 1.6s (typ.) watchdog timeout period
- ◆ Active-high and active-low push-pull outputs
- ◆ Guaranteed reset output valid to $V_{CC} = 1\text{V}$
- ◆ -40°C to $+125^\circ\text{C}$ junction temperature range
- ◆ 5-pin SOT23 and SC70 packages
- ◆ 8x lower watchdog input current than competition



MIC2786

Push Button Reset IC with Voltage Supervisor

- ◆ Factory-programmed 140ms (min.) or 240ms (min.) reset timeout delay
- ◆ 1.6V to 5.5V Operating Voltage
- ◆ Integrated /MR0, /MR1 pull-up resistors (MIC2786)
- ◆ -40°C to +85°C ambient operating temperature range
- ◆ 8-pin 2mm x 2mm x 0.55mm Thin MLF[®] package
- ◆ Programmable delay (PDY) input selects 2s, 4s, or 6s setup delay
- ◆ 7.4μA Supply Current when /MR0, /MR1 not asserted
- ◆ 1.66V to 4.63V preset voltage threshold options
- ◆ Dual reset outputs:
 - Open-drain, active-low reset output (/RST)
 - Push-pull, active-high reset output (RSTP)



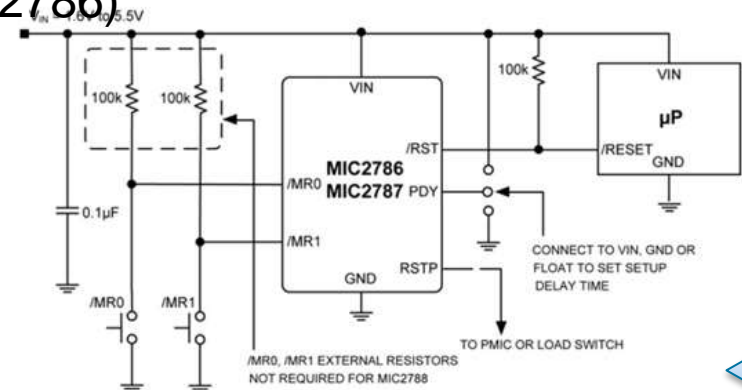
MIC2787

Push Button Reset IC with Voltage Supervisor

- ◆ 1.6V to 5.5V operating voltage
- ◆ 7.4µA supply current when /MR0, /MR1 not asserted
- ◆ 1.66V to 4.63V preset voltage threshold options
- ◆ 2.5% voltage threshold accuracy over temperature
- ◆ Asserting /MR0 and /MR1 for the setup delay time asserts reset output for the reset timeout delay
- ◆ Programmable delay (PDY) input selects 2s, 4s or 6s setup delay
- ◆ Factory-programmed 140ms (min.) or 240ms (min.) reset timeout delay
- ◆ Integrated /MR0, /MR1 pull-up resistors (MIC2786)

Dual reset outputs:

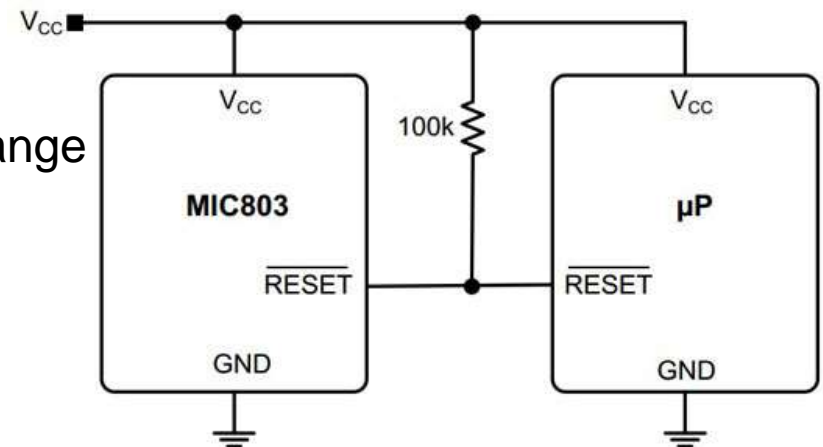
- Open-drain, active-low reset output (/RST)
- Push-pull, active-high reset output (RSTP)



MIC803

3-Pin Microprocessor Supervisor Circuit with Open-Drain Reset Output

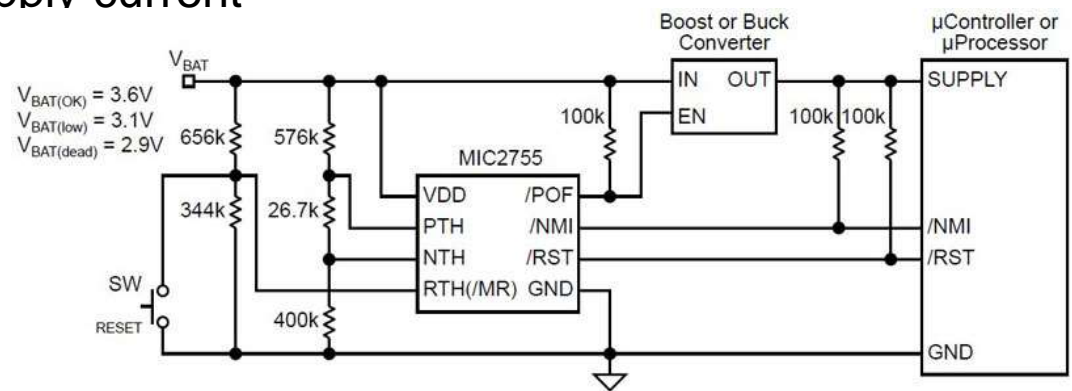
- ◆ 4.5 μ A supply current (typical) at 3.6V
- ◆ Open-Drain /RESET output
- ◆ /RESET remains valid with V_{CC} as low as 1V
- ◆ 20ms, 140ms, or 1120ms (min) reset timeout Options
- ◆ 2.63V to 4.63V Preset Voltage Threshold Options
- ◆ 2.5% Voltage Threshold Accuracy over temperature
- ◆ 3-pin SC70-3 package (2.0mm x 2.1mm)
- ◆ 3-pin SOT-23 package (2.3mm x 2.9mm)
- ◆ -40°C to +125°C Junction Temperature Range



MIC2755

Battery System Supervisor

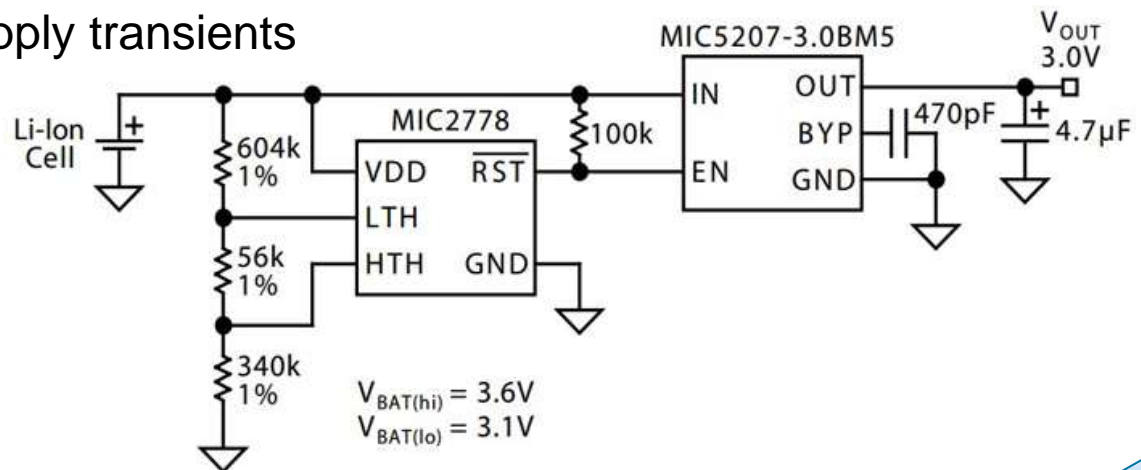
- ◆ Optimized for PDAs, pagers and other hand-held devices.
- ◆ Detects multiple battery states: Battery OK, Low battery, Dead battery.
- ◆ Adjustable voltage thresholds
- ◆ High accuracy $\pm 2\%$ voltage thresholds
- ◆ Reset generation at power-on (700ms min.)
- ◆ Debounced manual reset function
- ◆ Internal logic prevents chatter if battery voltage fluctuates
- ◆ Extremely low $2\mu\text{A}$ typical supply current
- ◆ 8-pin MSOP package



MIC2778

Voltage Monitor with Adjustable Hysteresis

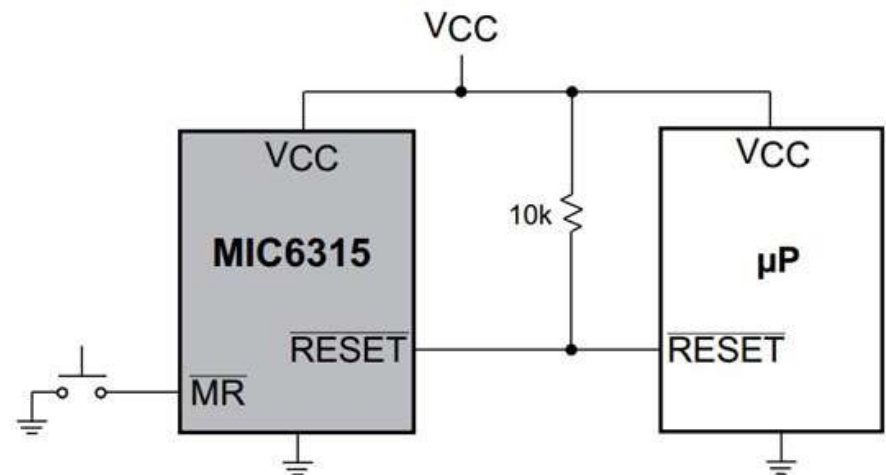
- ◆ Optimized for PDAs, cellular telephones, pagers, and other battery-powered devices
- ◆ Independently adjustable high- and low-voltage thresholds
- ◆ Internal logic prevents battery-voltage-fluctuation chatter
- ◆ High $\pm 2\%$ voltage threshold accuracy; 1% available
- ◆ Built in 140ms (minimum) delay deglitches output
- ◆ For applications not requiring built-in delay, see MIC841
- ◆ Immune to brief power supply transients
- ◆ 5-lead SOT-23 package



MIC6315

Open-Drain μ P Reset Circuit

- ◆ Precision voltage monitor for 3V, 3.3V or 5V power supplies
- ◆ $\overline{\text{RESET}}$ remains valid with V_{CC} as low as 1V
- ◆ 5 μ A supply current
- ◆ 20ms, 140ms, or 1100ms minimum reset pulse widths available
- ◆ Manual reset input
- ◆ 4-pin SOT-143 package

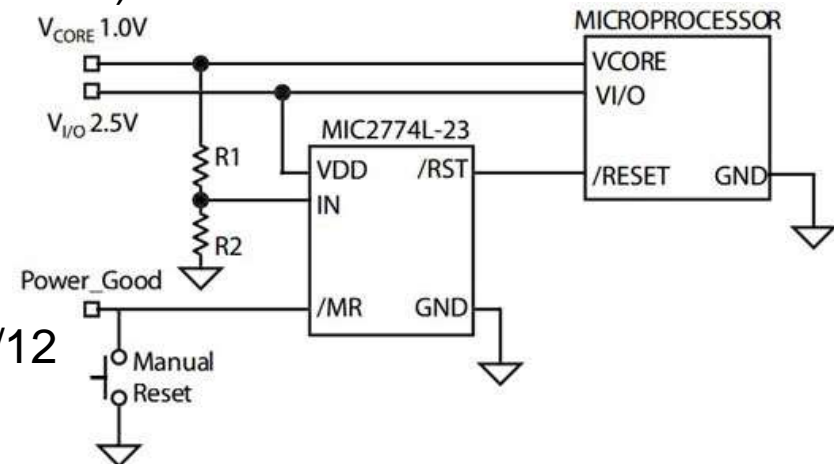




MIC2774L

Dual Micro-Power Low Voltage Supervisor

- ◆ Monitors two independent power supplies for under-voltage conditions
- ◆ One fixed and one user adjustable input
- ◆ Choice of factory-programmed thresholds
- ◆ Adjustable input can monitor supplies as low as 0.3V
- ◆ Generates 140ms (minimum) power-on reset pulse
- ◆ Inputs may be pulled above V_{DD} (7V abs. max.)
- ◆ /RST output valid down to 1.2V
- ◆ Ultra-low supply current, 3.5 μ A typical
- ◆ Rejects brief input transients
- ◆ IttyBitty® 5-lead SOT-23 package
- ◆ Pin compatible upgrade for MAX6306/09/12

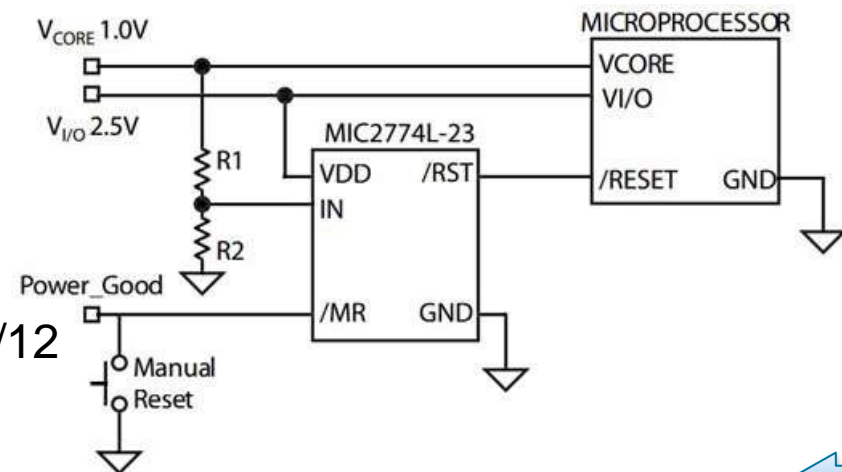




MIC2774H

Dual Micro-Power Low Voltage Supervisor

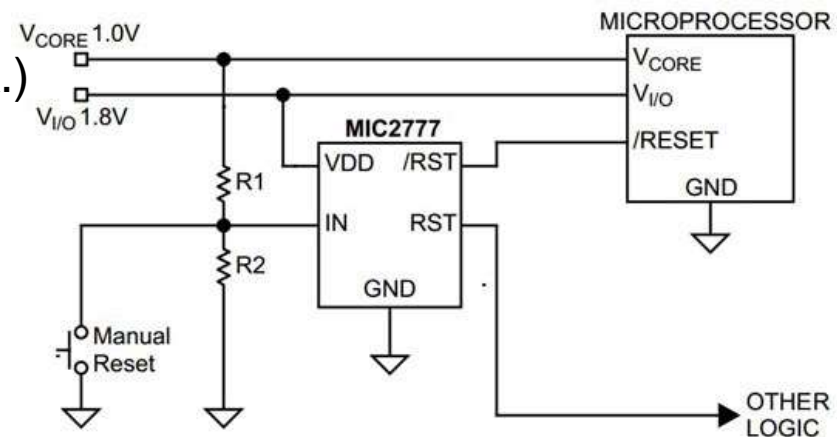
- ◆ Monitors two independent power supplies for under-voltage conditions
- ◆ One fixed and one user adjustable input
- ◆ Choice of factory-programmed thresholds
- ◆ Adjustable input can monitor supplies as low as 0.3V
- ◆ Generates 140ms (minimum) power-on reset pulse
- ◆ Choice of active-high, active-low, or open-drain activelow reset outputs
- ◆ Inputs may be pulled above V_{DD} (7V abs. max.)
- ◆ /RST output valid down to 1.2V
- ◆ Ultra-low supply current, 3.5 μ A typical
- ◆ Rejects brief input transients
- ◆ IttyBitty® 5-lead SOT-23 package
- ◆ Pin compatible upgrade for MAX6306/09/12



MIC2777

Dual Micro-Power Low Voltage Supervisor

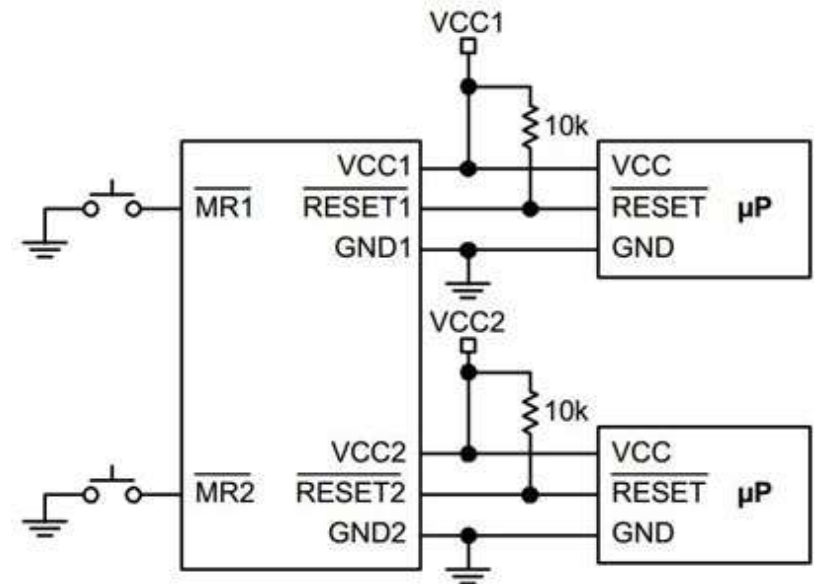
- ◆ Monitors two independent power supplies for under-voltage conditions
- ◆ One fixed and one user adjustable input
- ◆ 1.5% threshold accuracy
- ◆ Choice of factory-programmed thresholds
- ◆ User-adjustable input can monitor supplies as low as 0.3V
- ◆ Generates 140ms (minimum) power-on RESET pulse
- ◆ Manual reset capability
- ◆ Input may be pulled above V_{DD} (abs. max.)
- ◆ /RST output valid down to 1.2V
- ◆ Ultra-low supply current, 3.5 μ A typical
- ◆ Rejects brief input transients
- ◆ IttyBitty® 5-pin SOT-23 package



MIC2772

Dual Voltage Supervisor

- ◆ Two independent voltage supervisors
- ◆ Directly replaces discrete supervisors
- ◆ Generates power-on reset pulses
- ◆ De-bounced manual reset Inputs
- ◆ Choice of voltage thresholds
- ◆ 20, 140, or 1100ms reset timeouts
- ◆ Reset output may be pulled above V_{CC}
- ◆ Rejects brief input transients
- ◆ Ultra-small 2mm x 2mm MLF[®] package

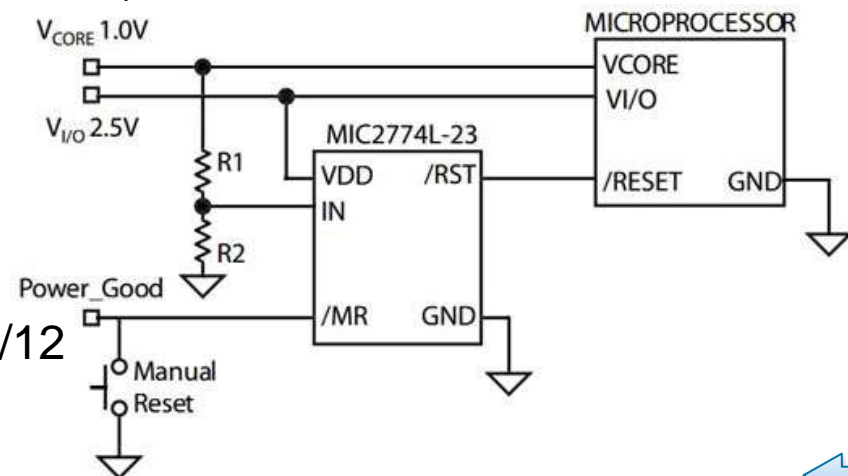




MIC2774N

Dual Micro-Power Low Voltage Supervisor

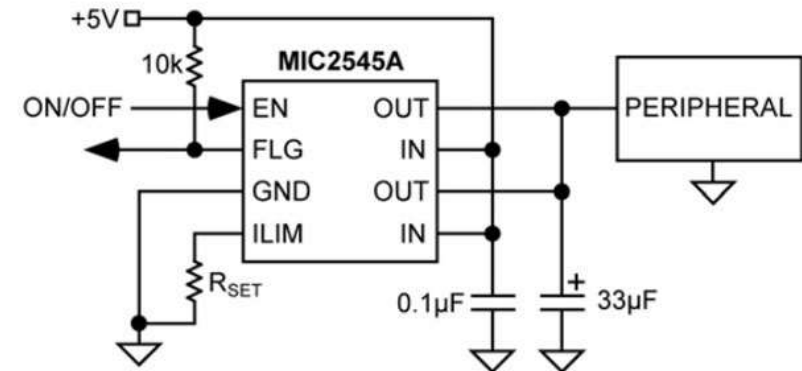
- ◆ Monitors two independent power supplies for under-voltage conditions
- ◆ One fixed and one user adjustable input
- ◆ Choice of factory-programmed thresholds
- ◆ Adjustable input can monitor supplies as low as 0.3V
- ◆ Generates 140ms (minimum) power-on reset pulse
- ◆ Manual reset input
- ◆ Inputs may be pulled above V_{DD} (7V abs. max.)
- ◆ /RST output valid down to 1.2V
- ◆ Ultra-low supply current, 3.5 μ A typical
- ◆ Rejects brief input transients
- ◆ IttyBitty® 5-lead SOT-23 package
- ◆ Pin compatible upgrade for MAX6306/09/12



MIC2545A/49A

Programmable Current-Limit High-Side Switch

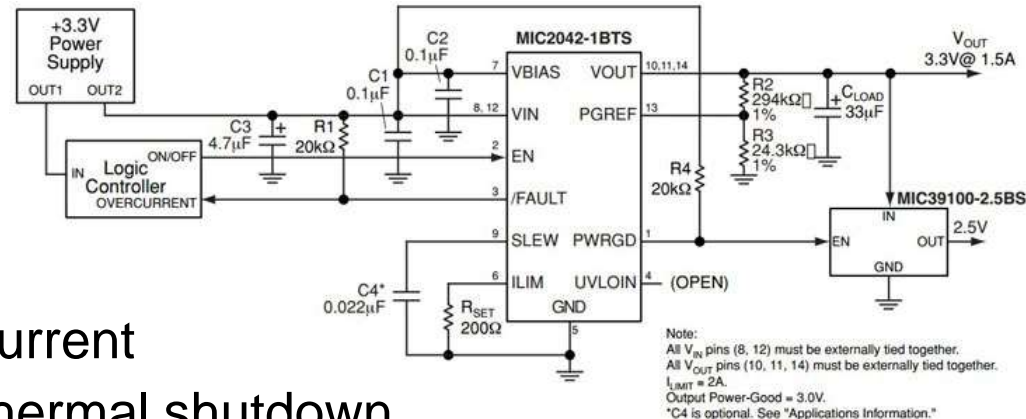
- ◆ 2.7V to 5.5V input
- ◆ Adjustable current-limit up to 3A
- ◆ Reverse current flow blocking
- ◆ 90 μ A typical on-state supply current
- ◆ 1 μ A typical off-state supply current
- ◆ 50m Ω maximum on-resistance
- ◆ Open-drain fault flag
- ◆ Thermal shutdown
- ◆ Thermal-shutdown output latch (MIC2549A)
- ◆ 2ms (slow) soft-start turn-on, fast turnoff
- ◆ Available with active-high or active-low enable



MIC2042/43

Single Channel, High Current, Low Voltage, Protected Power Distr. Switch

- ◆ 60mΩ max. on-resistance
- ◆ 0.8V to 5.5V operating range
- ◆ Adjustable current limit
- ◆ Power-Good detection
- ◆ Up to 3A continuous output current
- ◆ Short-circuit protection with thermal shutdown
- ◆ Adjustable slew-rate control
- ◆ Circuit breaker mode (MIC2043)
- ◆ Fault status flag
- ◆ Undervoltage lockout
- ◆ Output MOSFET reverse current flow block when disabled
- ◆ Very fast reaction to short-circuits
- ◆ Low quiescent current

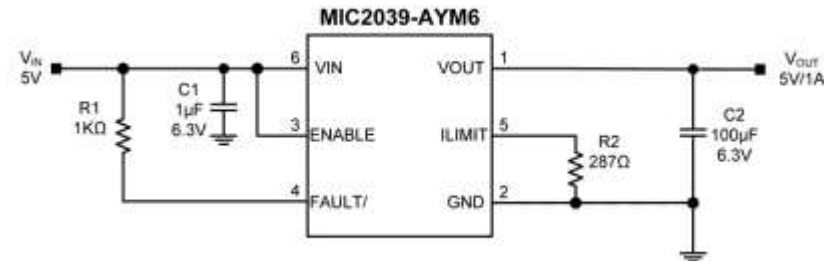




MIC2039

High-Accuracy, High-Side, Adjustable Current Limit Power Switch

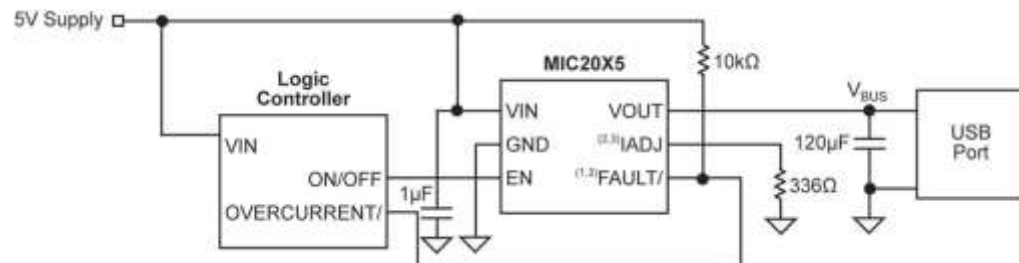
- ◆ $\pm 5\%$ current limit accuracy
- ◆ Input supply range from 2.5V to 5.5V
- ◆ Low quiescent current: 100 μ A typical (switch ON)
- ◆ 75m Ω typical RDS(ON) at 5.0V
- ◆ 0.2A to 2.5A adjustable output current
- ◆ Kickstart - momentary secondary current limit threshold (120ms period)
- ◆ Soft-start functionality
- ◆ Undervoltage lockout (UVLO)
- ◆ Fast 10 μ s short-circuit response time (non-Kickstart options)
- ◆ Fault status output flag
- ◆ Logic controlled enable (active-high, active-low)
- ◆ Thermal shutdown
- ◆ Pin compatible with the MIC2009/MIC2019
- ◆ 6-pin 2mm x 2mm thin DFN and 6-pin SOT-23 packages
- ◆ Junction temperature range from -40°C to $+125^{\circ}\text{C}$



MIC2007/8/9, MIC2017/18/19

Adjustable Current Limiting Power Distribution Switches

- ◆ 70mΩ typical on-resistance @ 5V
- ◆ Enable active high or active low
- ◆ 2.5V-5.5V operating range
- ◆ Adjustable current limit 0.2A to 2.0A* (MIC20X7-MIC20X9)
- ◆ Adjustable current limit 0.1A to 0.9A* (MIC20X9A)
- ◆ Undervoltage lock-out (UVLO)
- ◆ Variable UVLO allows adjustable UVLO thresholds*
- ◆ Automatic load discharge for capacitive loads*
- ◆ Soft-start prevents large current inrush
- ◆ Adjustable slew rate allows custom slew rates*
- ◆ Automatic-on output after fault
- ◆ Thermal protection

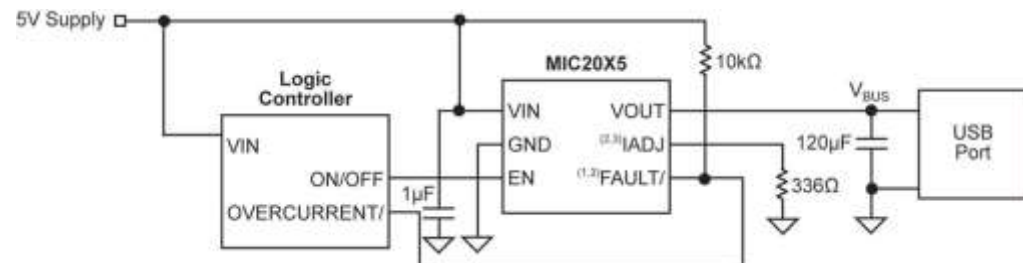




MIC2009A

Adjustable Current Limiting Power Distribution Switches

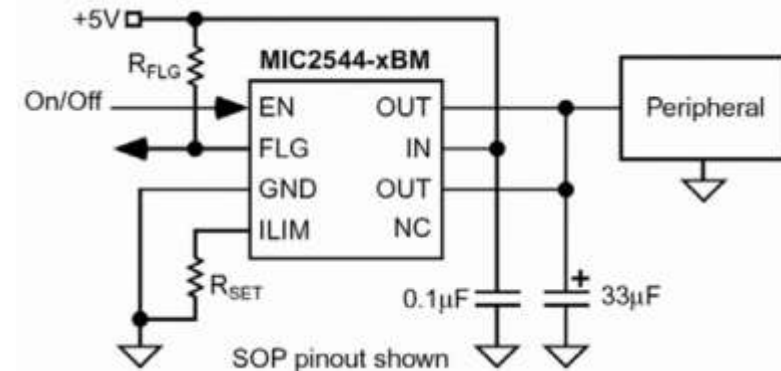
- ◆ 70mΩ typical on-resistance @ 5V
- ◆ Enable active high or active low
- ◆ 2.5V-5.5V operating range
- ◆ Adjustable current limit 0.1A to 0.9A* (MIC20X9A)
- ◆ Undervoltage lock-out (UVLO)
- ◆ Variable UVLO allows adjustable UVLO thresholds*
- ◆ Automatic load discharge for capacitive loads*
- ◆ Soft-start prevents large current inrush
- ◆ Adjustable slew rate allows custom slew rates*
- ◆ Automatic-on output after fault
- ◆ Thermal protection



MIC2544/48

Programmable Current Limit High-Side Switch

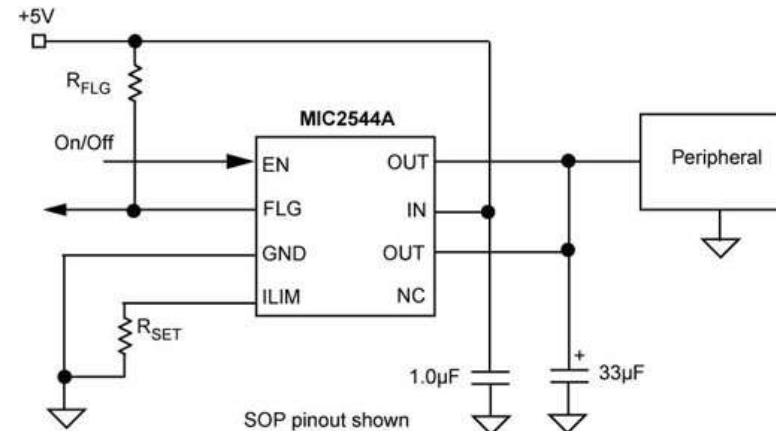
- ◆ 2.7V to 5.5V input
- ◆ Adjustable current-limit up to 1.5A
- ◆ Reverse current flow blocking (no "body diode")
- ◆ 75 μ A typical on-state supply current
- ◆ 1 μ A typical off-state supply current
- ◆ 120m Ω maximum on-resistance
- ◆ Open-drain fault flag
- ◆ Thermal shutdown
- ◆ Thermal shutdown output latch (MIC2548)
- ◆ 2ms (slow) turn-on and fast turnoff
- ◆ Available with active-high or active-low enable



MIC2544A/48A

Programmable Current Limit High-Side Switch

- ◆ 2.7V to 5.5V input
- ◆ Adjustable current-limit up to 1.5A
- ◆ Reverse current flow blocking (no "body diode")
- ◆ 90 μ A typical on-state supply current
- ◆ 1 μ A typical off-state supply current
- ◆ 120m Ω maximum on-resistance
- ◆ Open-drain fault flag
- ◆ Thermal shutdown
- ◆ Thermal shutdown output latch (MIC2548A)
- ◆ 2ms (slow) turn-on and fast turn-off
- ◆ Available with active-high or active-low enable

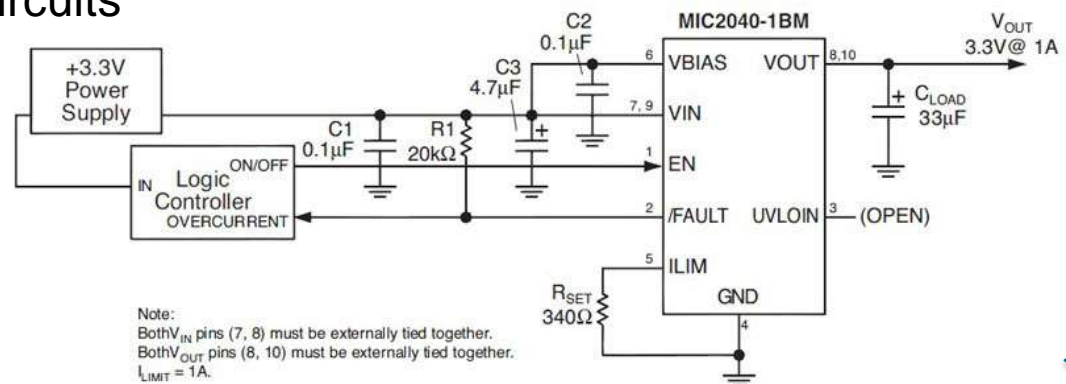




MIC2040/41

Single Channel Low Voltage Power Distribution Switch

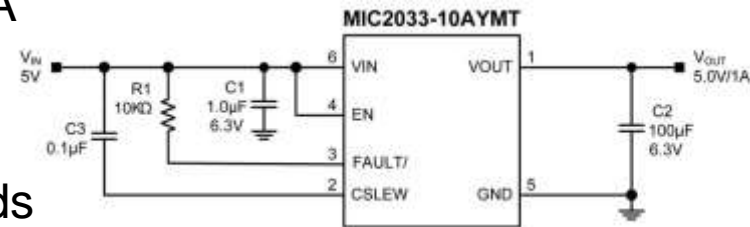
- ◆ 75mΩ max. on-resistance
- ◆ 0.8V to 5.5V operating range
- ◆ Adjustable current limit
- ◆ Up to 1.5A continuous output current
- ◆ Short circuit protection with thermal shutdown
- ◆ Circuit breaker mode (MIC2041)
- ◆ Fault status flag
- ◆ Undervoltage lockout
- ◆ Output MOSFET reverse current flow block when disabled
- ◆ Very fast reaction to short-circuits
- ◆ Low quiescent current



MIC2033

High-Accuracy, High-Side, Fixed Current Limit Power Switch

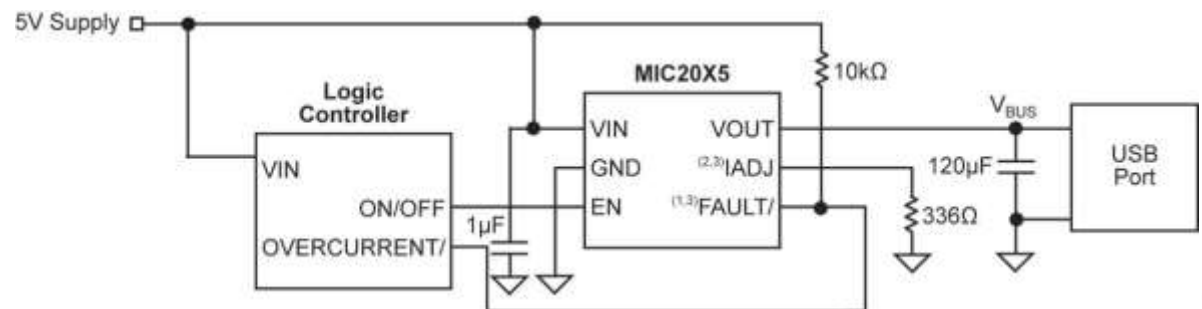
- ◆ $\pm 5\%$ current limit accuracy
- ◆ Input supply range from 2.5V to 5.5V
- ◆ Low quiescent current: 100 μ A typical (switch ON)
- ◆ 75m Ω typical RDS(ON) at 5V
- ◆ Current limit options: 0.5A, 0.8A, 1A, and 1.2A
- ◆ Soft-start control via an external capacitor
- ◆ Undervoltage lockout (UVLO)
- ◆ Fast response time (10 μ s) to short circuit loads
- ◆ Fault status output flag
- ◆ Logic controlled enable (active-high, active-low)
- ◆ Thermal shutdown
- ◆ Pin compatible with MIC2005
- ◆ 6-pin 2mm x 2mm thin DFN and 6-pin SOT-23 packages
- ◆ Junction temperature range from -40°C to +125°C



MIC2003/4/5/6, MIC2013/14/15/16

Fixed Current Limiting Power Distribution Switches

- ◆ 70mΩ typical on-resistance @ 5V
- ◆ Enable active high or active low
- ◆ 2.5V-5.5V operating range
- ◆ Pre-set current limit values of 0.5A, 0.8A, and 1.2A*
- ◆ Undervoltage lock-out (UVLO)
- ◆ Variable UVLO allows adjustable UVLO thresholds*
- ◆ Automatic load discharge for capacitive loads*
- ◆ Soft-start prevents large current inrush
- ◆ Adjustable slew rate allows custom slew rates*
- ◆ Automatic-on output after fault
- ◆ Thermal protection

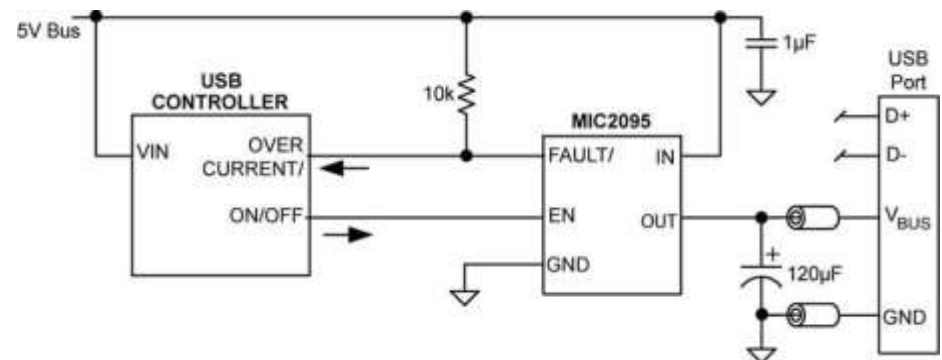




MIC2095/7/8/9

Current-Limiting Power Distribution Switches

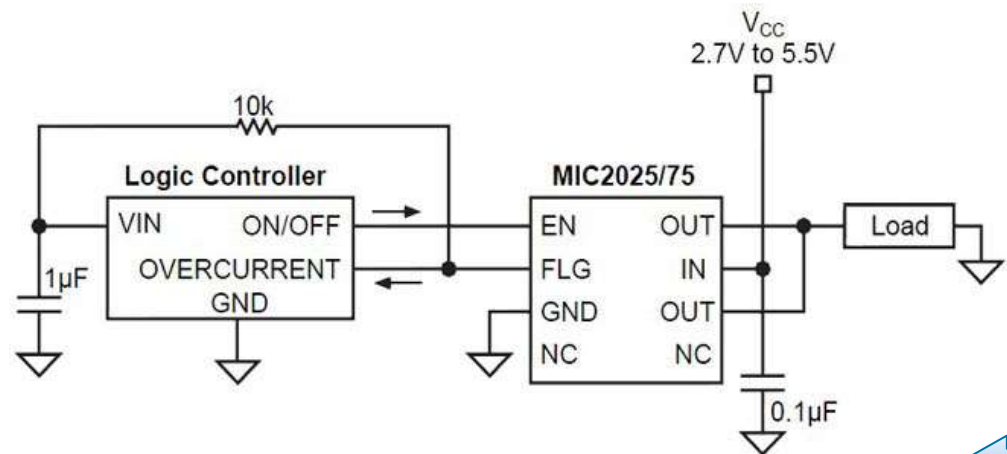
- ◆ MIC2095: 0.5A fixed current limit
- ◆ MIC2098: 0.9A fixed current limit
- ◆ MIC2097/99: Resistor programmable current limit - 0.1A to 1.1A
- ◆ MIC2097: Kickstart for high peak current loads
- ◆ Under voltage lock-out (UVLO)
- ◆ Soft start prevents large current inrush
- ◆ Automatic-on output after fault
- ◆ Thermal protection
- ◆ Enable active high or active low
- ◆ 170mΩ typical on-resistance @ 5V
- ◆ 2.5V - 5.5V operating range



MIC2025/75

Single-Channel Power Distribution Switch MM8®

- ◆ 140mΩ maximum on-resistance
- ◆ 2.7V to 5.5V operating range
- ◆ 500mA minimum continuous output current
- ◆ Short-circuit protection with thermal shutdown
- ◆ Fault status flag with 3ms filter eliminates false assertions
- ◆ Undervoltage lockout
- ◆ Reverse current flow blocking (no "body diode")
- ◆ Circuit breaker mode (MIC2075) reduces power consumption
- ◆ Logic-compatible input
- ◆ Soft-start circuit
- ◆ Low quiescent current
- ◆ Pin-compatible with MIC2525
- ◆ UL File # E179633

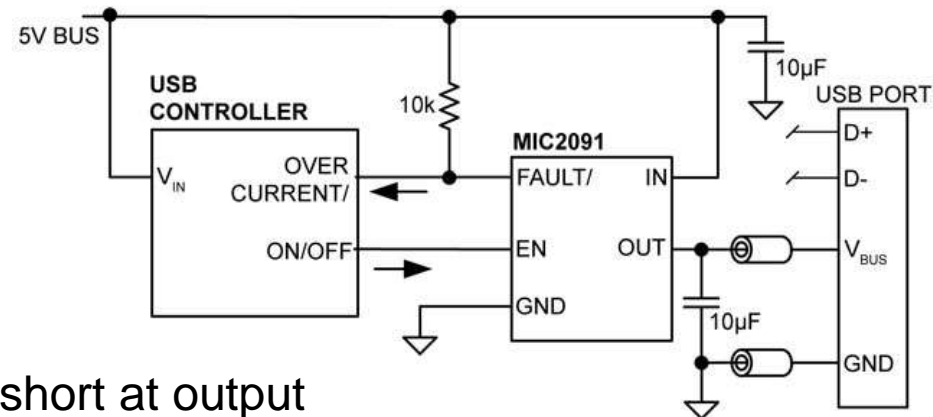




MIC2091

Current Limiting Power Distribution Switches

- ◆ 1.8V to 5.5V supply voltage
- ◆ 790 mΩ typical R_{DS(on)} at 3.3V
- ◆ 100mA minimum continuous current
- ◆ Reverse current blocking (OGI)
- ◆ 20ns super fast reaction time to hard short at output
- ◆ 10ms fault flag delay (t_{D_FAULT/}) eliminates false assertions
- ◆ Auto-retry overcurrent and short-circuit protection (-1 version)
- ◆ Latch-off on current limit (-2 version)
- ◆ Thermal shutdown
- ◆ Fault status flag indicates: over-current, over-temperature, or UVLO
- ◆ Under-voltage lockout (UVLO)
- ◆ Low quiescent current

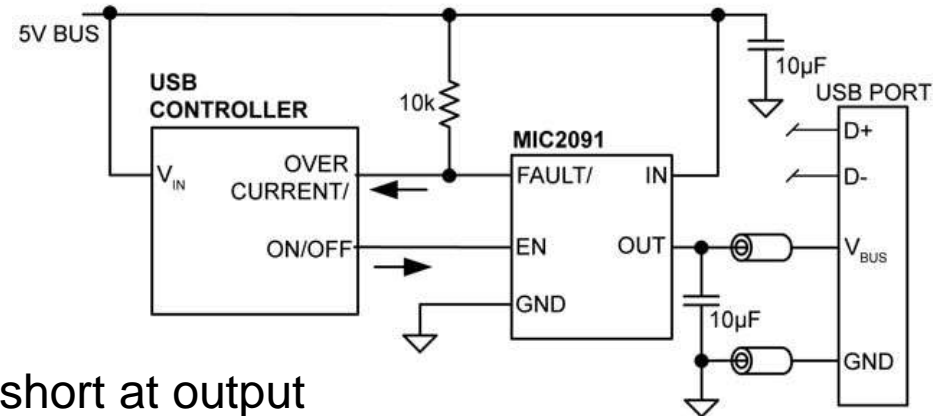




MIC2090

Current Limiting Power Distribution Switches

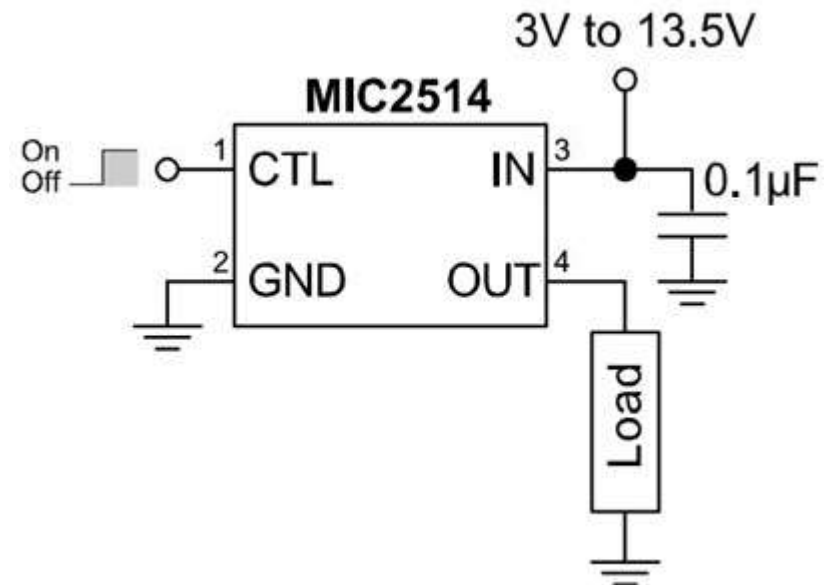
- ◆ 1.8V to 5.5V supply voltage
- ◆ 790 mΩ typical R_{DS(on)} at 3.3V
- ◆ 50mA minimum continuous current
- ◆ Reverse current blocking (OGI)
- ◆ 20ns super fast reaction time to hard short at output
- ◆ 10ms fault flag delay (t_{D_FAULT/}) eliminates false assertions
- ◆ Auto-retry overcurrent and short-circuit protection (-1 version)
- ◆ Latch-off on current limit (-2 version)
- ◆ Thermal shutdown
- ◆ Fault status flag indicates: over-current, over-temperature, or UVLO
- ◆ Under-voltage lockout (UVLO)
- ◆ Low quiescent current



MIC2514

IttyBitty® Integrated High-Side Switch

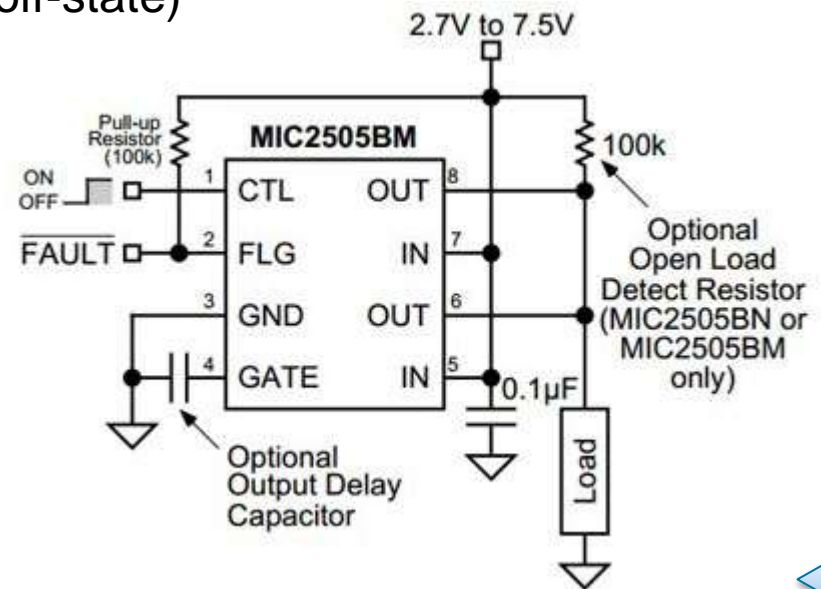
- ◆ MOSFET on-resistance
 - 1.5Ω typical at 5V
 - 0.95Ω typical at 12V
- ◆ 3V to 13.5V input
- ◆ 25μA typical on-state supply current at 5V
- ◆ <1μA typical off-state supply current at 5V
- ◆ Current limit
- ◆ Thermal shutdown
- ◆ Slow turn-on



MIC2505/-1/-2

Single 2A High-Side Switches

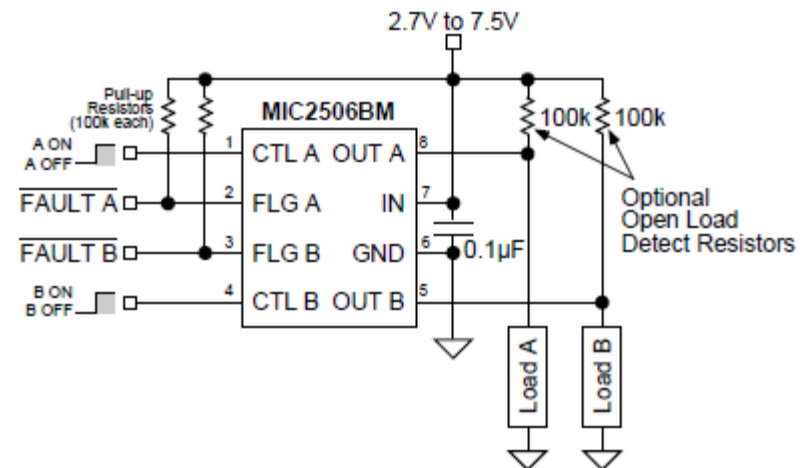
- ◆ Low MOSFET on resistance to 2.7V
 - 30mΩ typical at 5V (MIC2505-series)
 - 35mΩ typical at 3.3V (MIC2505-series)
- ◆ 2.7V to 7.5V input
- ◆ 110μA typical on-state supply current
- ◆ 1μA typical off-state supply current
- ◆ Output can be forced higher than input (off-state)
- ◆ Current limit
- ◆ Thermal shutdown
- ◆ 2.5V undervoltage lockout (UVLO)
- ◆ Open-load detection (MIC2505 only)
- ◆ Open-drain fault flag
- ◆ 5ms (slow) turn-on and fast turnoff
- ◆ Logic-level control/enable input



MIC2506

Dual 1A High-Side Switches

- ◆ Low MOSFET on resistance to 2.7V
 - 75mΩ typical at 5V (each MIC2506 output)
 - 80mΩ typical at 3.3V (each MIC2506 output)
- ◆ 2.7V to 7.5V input
- ◆ 110μA typical on-state supply current
- ◆ 1μA typical off-state supply current
- ◆ Output can be forced higher than input (off-state)
- ◆ Current limit
- ◆ Thermal shutdown
- ◆ 2.5V undervoltage lockout (UVLO)
- ◆ Open-load detection (MIC2506 only)
- ◆ Open-drain fault flag
- ◆ 5ms (slow) turn-on and fast turnoff
- ◆ Logic-level control/enable input

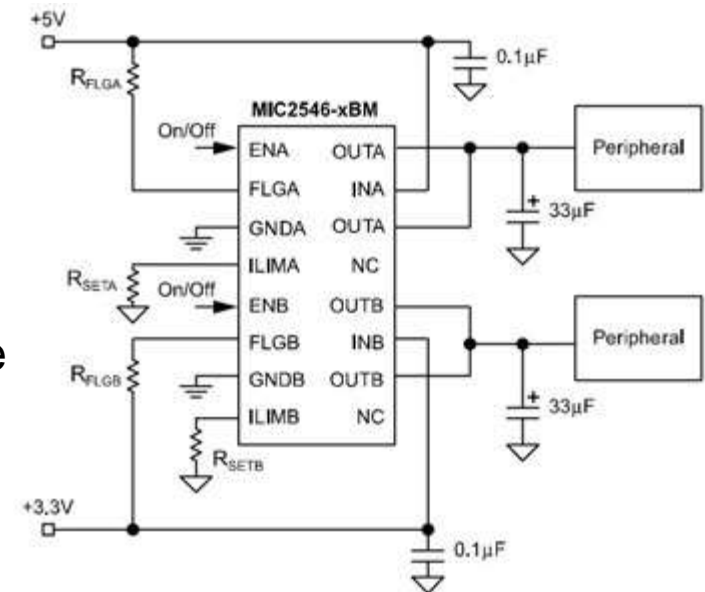




MIC2546/47

Dual Programmable Current Limit Switch

- ◆ 2.7V to 5.5V input
- ◆ Adjustable current-limit up to 1.5A
- ◆ Reverse current flow blocking (no "body diode")
- ◆ 100 μ A typical on-state supply current per channel
- ◆ 2 μ A typical off-state supply current
- ◆ 120m Ω maximum on-resistance
- ◆ Open-drain fault flag
- ◆ Thermal shutdown
- ◆ Thermal shutdown output latch (MIC2547)
- ◆ 2ms (slow) turn-on and fast turn-off
- ◆ Available with active-high or active-low enable

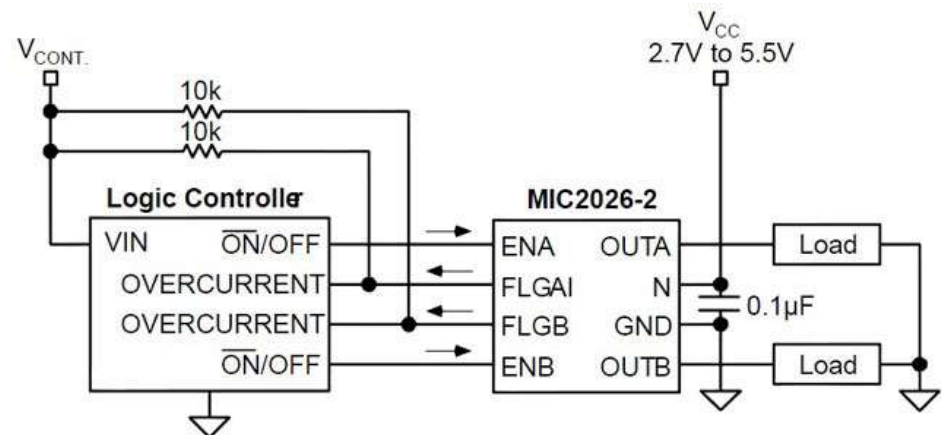




MIC2026/76

Dual-Channel Power Distribution Switch

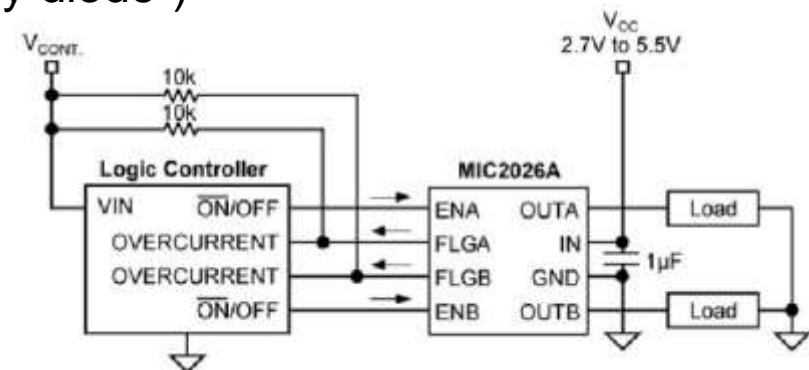
- ◆ 140mΩ maximum on-resistance per channel
- ◆ 2.7V to 5.5V operating range
- ◆ 500mA minimum continuous current per channel
- ◆ Shortcircuit protection with thermal shutdown
- ◆ Thermally isolated channels
- ◆ Fault status flag with 3ms filter eliminates false assertions
- ◆ Undervoltage lockout
- ◆ Reverse current flow blocking (no "body diode")
- ◆ Circuit breaker mode (MIC2076)
- ◆ Logic-compatible inputs
- ◆ Soft-start circuit
- ◆ Low quiescent current
- ◆ Pin compatible with MIC2526
- ◆ UL File # E179633

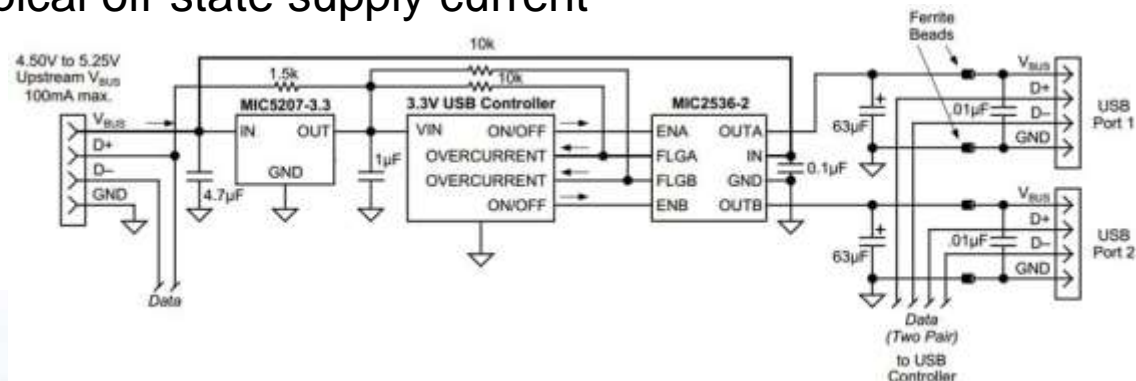


MIC2026A/76A

Dual-Channel Power Distribution Switch

- ◆ 100mΩ typical RDS(ON) at 5.0V
- ◆ 140mΩ maximum RDS(ON) at 5.0V
- ◆ 2.7 V to 5.5 V operating range
- ◆ 500mA minimum continuous current per channel
- ◆ Short circuit protection with thermal shutdown
- ◆ Thermally isolated channels
- ◆ Soft-start circuit
- ◆ Fault status flag with 3ms filter eliminates false assertions
- ◆ UVLO (Undervoltage lockout)
- ◆ Reverse current flow blocking (no "body diode")
- ◆ Circuit breaker mode (MIC2076A)
- ◆ Pin compatible with the MIC2026/2076
- ◆ Logic-compatible inputs
- ◆ Low quiescent current

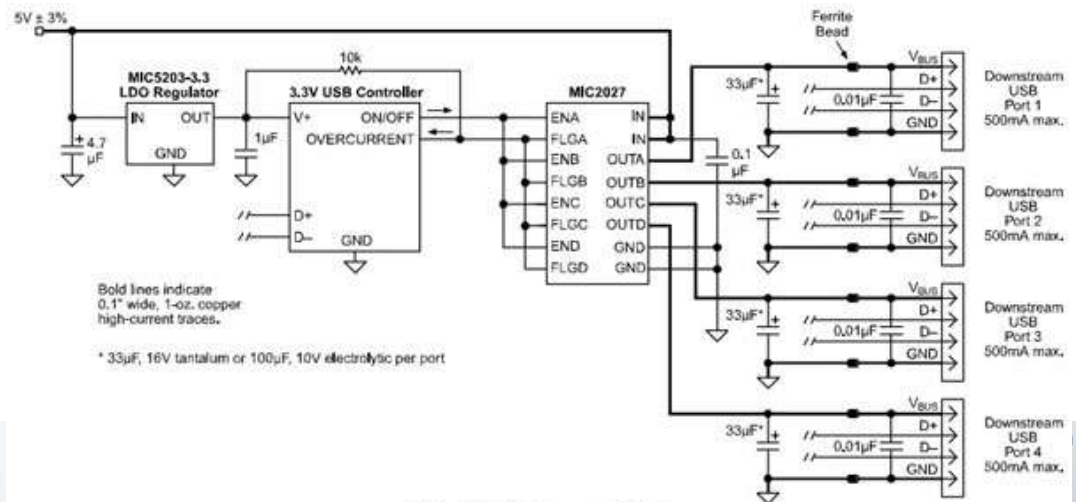




MIC2027/77

Quad USB Power Distribution Switch

- ◆ 150mΩ maximum on-resistance per channel
- ◆ 2.7V to 5.5V operating range
- ◆ 500mA minimum continuous current per channel
- ◆ Short-circuit protection with thermal shutdown
- ◆ Thermally isolated channels
- ◆ Fault status flag with 3ms filter eliminates false assertions
- ◆ Undervoltage lockout
- ◆ Reverse current flow blocking (no "body diode")
- ◆ Circuit breaker mode (MIC2077) reduces power consumption
- ◆ Logic-compatible inputs
- ◆ Soft-start circuit
- ◆ Low quiescent current
- ◆ Pin compatible with MIC2524 and MIC2527

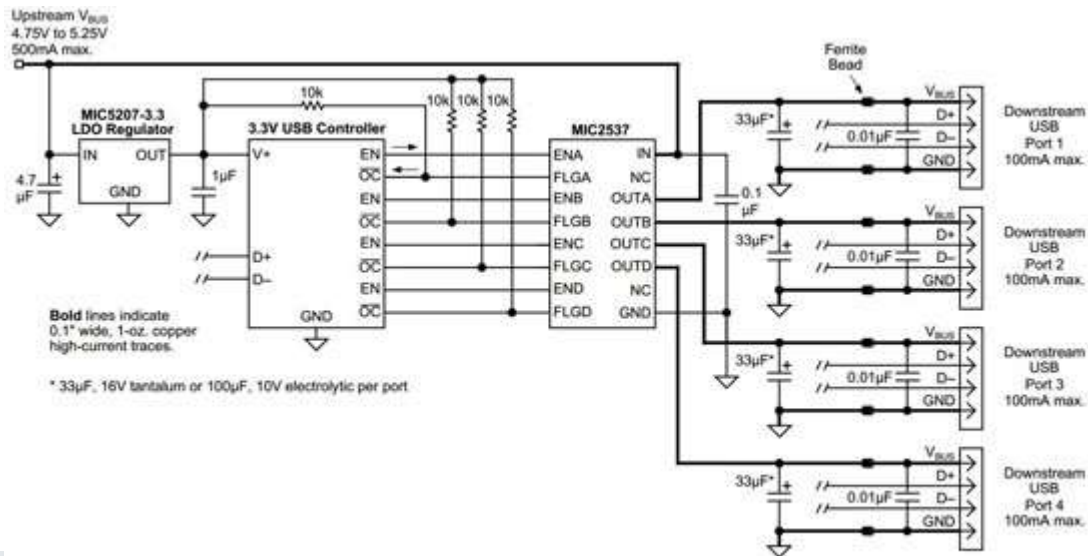


MIC2537



Quad Power Distribution Switch Final Information

- ◆ Compliant to USB specifications
- ◆ 3V to 5.5V input
- ◆ 100mA minimum continuous load current per port
- ◆ 425mΩ typical on-resistance
- ◆ < 400mA current limit
- ◆ Individual open-drain fault flag leads
- ◆ 3V/5V-compatible enable inputs
- ◆ Active-high (-1) and active-low (-2) versions
- ◆ 100μA max. on-state supply current
- ◆ <1μA typical off-state supply current
- ◆ 16-lead SOP package
- ◆ -40°C to 85°C operation



Typical Bus-Powered Hub

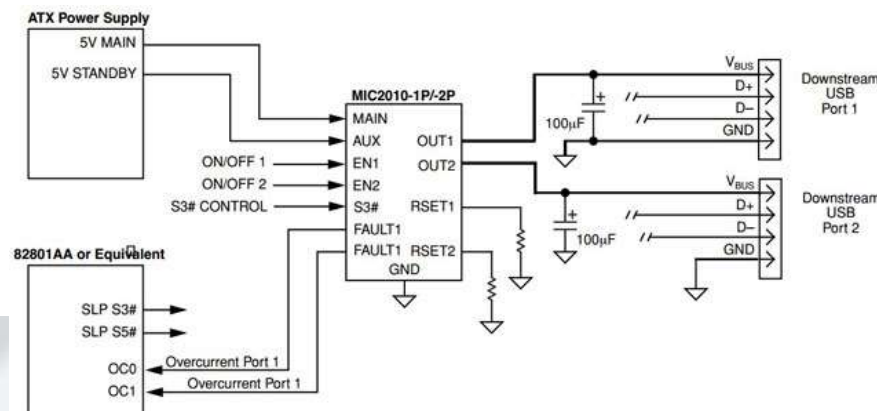


MIC2010/70

USB Power Controller



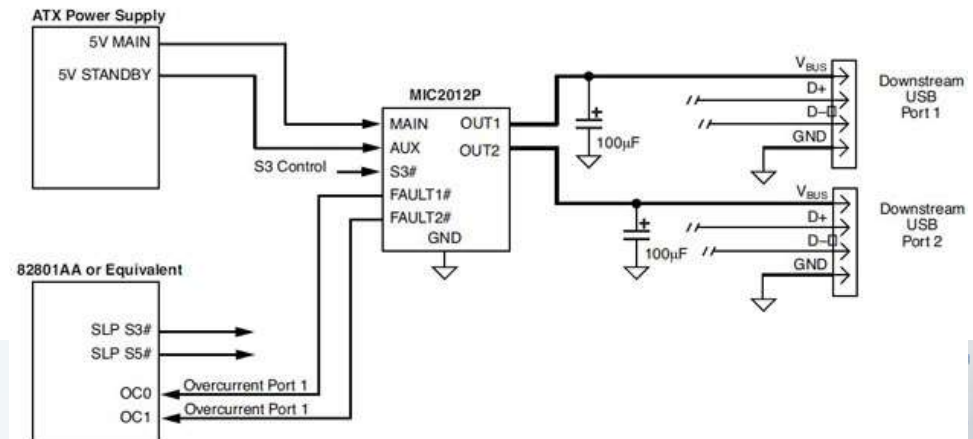
- ◆ Compliant to USB power distribution specifications
- ◆ Two completely independent switches
- ◆ Integrated switching matrix supports ACPI S0/S3 state transitions without external FET circuits
- ◆ Make-before-break switching ensures glitch-free transitions
- ◆ No back-feed of auxiliary supply onto main supply during standby mode
- ◆ Bi-level current-limit preserves auxiliary supply voltage regulation in standby mode
- ◆ Thermally isolated channels
- ◆ Thermal shutdown protection
- ◆ Fault status outputs with filter prevents false assertions during hot-plug events
- ◆ Circuit breaker options with auto-reset (MIC2070)
- ◆ Undervoltage lockout
- ◆ UL File #179633



MIC2012/72

USB Power Controller

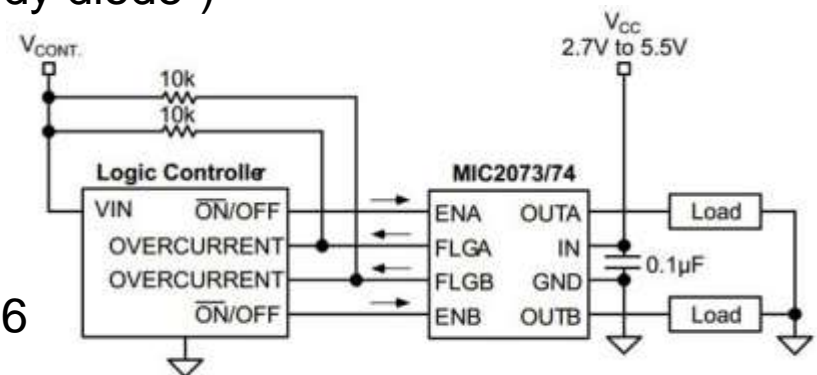
- ◆ Compliant to USB power distribution specifications
- ◆ Two completely independent switches
- ◆ Integrated switching matrix supports ACPI S0/S3 state transitions without external FET circuits
- ◆ Make-before-break switching ensures glitch-free transitions
- ◆ No back-feed of auxiliary supply onto main supply during standby mode
- ◆ Bi-level current-limit preserves auxiliary supply voltage regulation in standby mode
- ◆ Thermally isolated channels
- ◆ Thermal shutdown protection
- ◆ Fault status outputs with filter prevents false assertions during hot-plug events
- ◆ Latched thermal shutdown options with auto-reset (MIC2072)
- ◆ Undervoltage lockout
- ◆ UL Recognized Component



MIC2073/4

Dual-Channel Power Distribution Switch

- ◆ 115 mΩ typical RDS(ON) at 5.0 V
- ◆ 210 mΩ maximum RDS(ON) at 5.0 V
- ◆ 2.7 V to 5.5 V operating range
- ◆ 500 mA minimum continuous current per channel
- ◆ Short circuit protection with thermal shutdown
- ◆ Thermally isolated channels
- ◆ Fault status flag (FLGA/B) separate for each channel
- ◆ 3ms fault flag delay (TD) eliminates false assertions
- ◆ UVLO (Undervoltage Lockout)
- ◆ Reverse current flow blocking (no "body diode")
- ◆ Circuit breaker mode (MIC2074)
- ◆ Logic-compatible inputs
- ◆ Soft-start circuit
- ◆ Low quiescent current
- ◆ Pin compatible with the MIC2026/2076



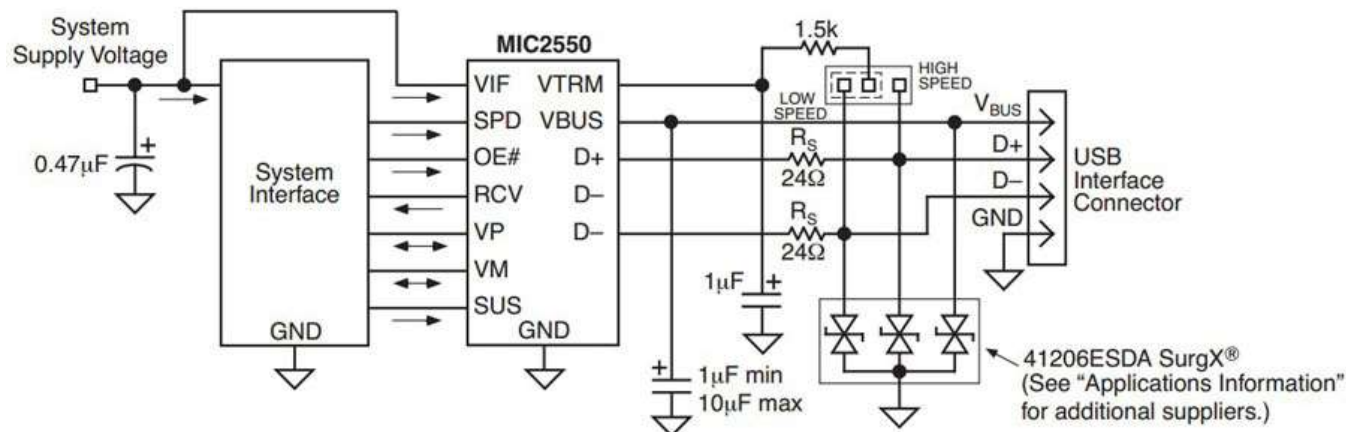
MIC2550



Universal Serial Bus Transceiver

*****NOT RECOMMENDED FOR NEW DESIGNS, SEE MIC2550A*****

- ◆ Compliant to USB Specification Revision 2.0 for low-speed (1.5Mbps) and full-speed (12Mbps) operation
- ◆ Compliant to IEC-61000-4.2 (Level 2)
- ◆ Operation down to 2.5V
- ◆ Dual supply voltage operation
- ◆ Integrated speed-select termination supply
- ◆ Very low power consumption meets USB suspend current requirements
- ◆ Small 14-pin TSSOP and 16-pin MLF® packages

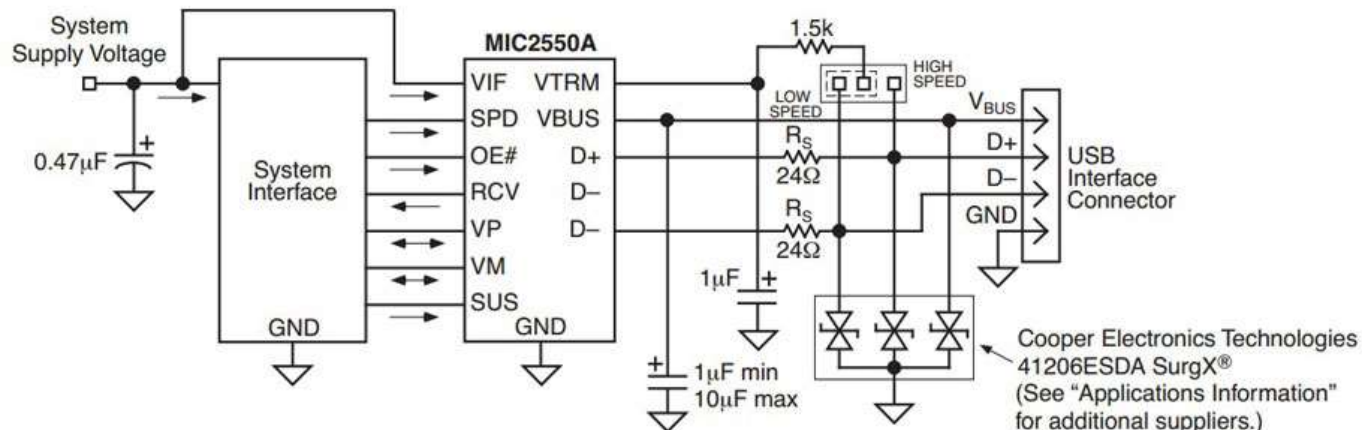




MIC2550A

Universal Serial Bus Transceiver

- ◆ Compliant to USB Specification Revision 2.0 for low-speed (1.5Mbps) and full-speed (12Mbps) operation
- ◆ Compliant to IEC-61000-4.2 (Level 2)
- ◆ Operation down to 2.5V
- ◆ Dual supply voltage operation
- ◆ Integrated speed-select termination supply
- ◆ Very low power consumption meets USB suspend current requirements
- ◆ Small 14-pin TSSOP and 16-pin MLF® packages



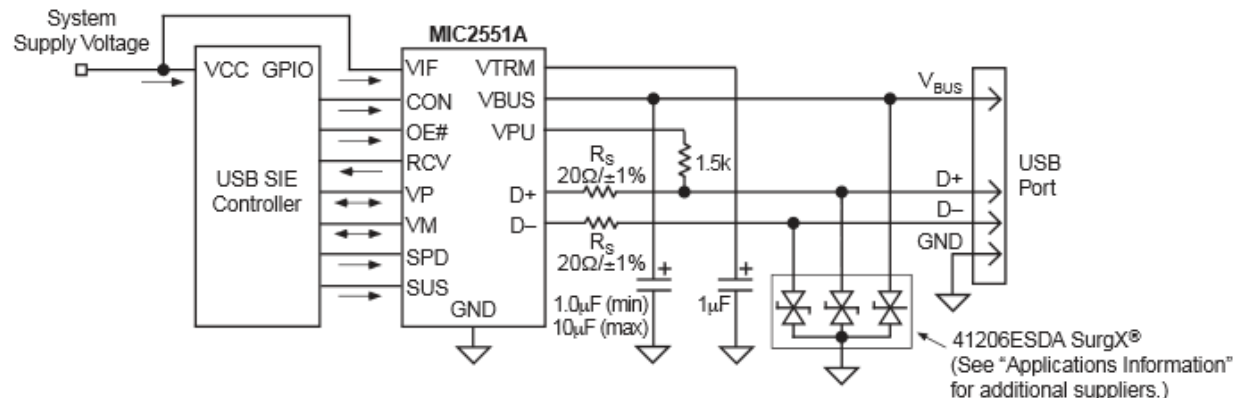
MIC2551

USB Transceiver



*****NOT RECOMMENDED FOR NEW DESIGNS, SEE MIC2551A*****

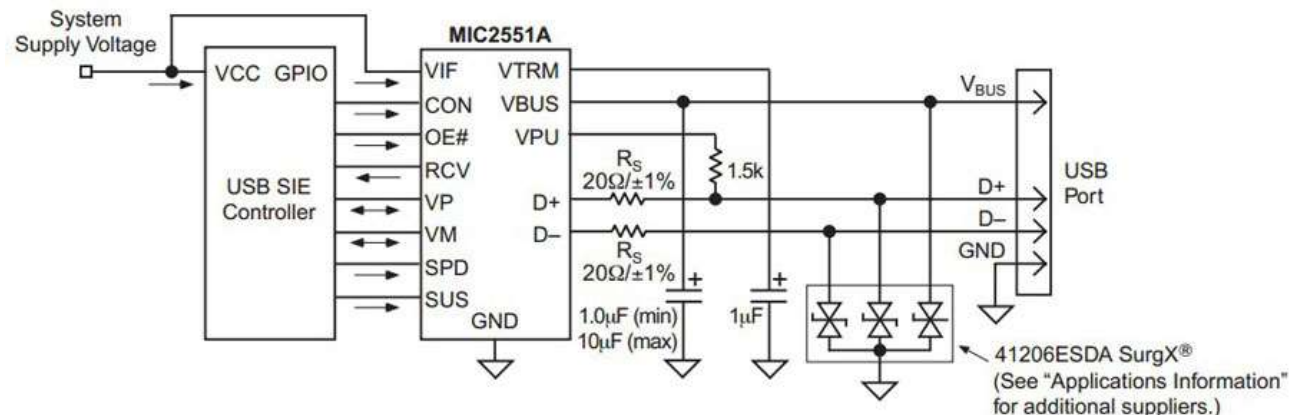
- ◆ Compliant to USB Specification Revision 2.0 for full speed (12Mbps) and low speed (1.5Mbps) operation
- ◆ Compliant to IEC-61000-4.2 (Level 3)
- ◆ Separate I/O supply with operation down to 1.6V
- ◆ Integrated speed select termination supply
- ◆ Very-low power consumption to meet USB suspend current requirements
- ◆ Small TSSOP and MLF® packages
- ◆ No power supply sequencing requirements
- ◆ Software controlled re-enumeration



MIC2551A

USB Transceiver

- ◆ Compliant to USB Specification Revision 2.0 for full speed (12Mbps) and low speed (1.5Mbps) operation
- ◆ Compliant to IEC-61000-4.2 (Level 3)
- ◆ Separate I/O supply with operation down to 1.6V
- ◆ Integrated speed select termination supply
- ◆ Very-low power consumption to meet USB suspend current requirements
- ◆ Small TSSOP and MFL® packages
- ◆ No power supply sequencing requirements
- ◆ Software controlled re-enumeration

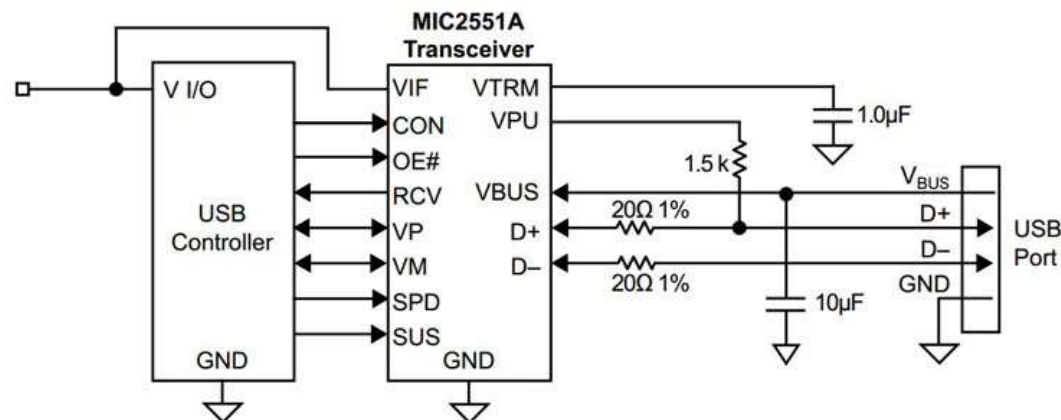




MIC2551A-2.5

USB Transceiver

- ◆ $\pm 15\text{kV}$ ESD protection on VBUS, D+ and D-
- ◆ Smaller 2.5mm x 2.5mm MLF® package
- ◆ USB 1.1 and 2.0 compliant transceiver (full speed -12Mbps and low speed - 1.5Mbps) operation
- ◆ Separate I/O supply with operation down to 1.6V
- ◆ Integrated speed select termination supply
- ◆ Very-low power consumption to meet USB suspend current requirements
- ◆ No power supply sequencing requirements
- ◆ Software controlled enumeration

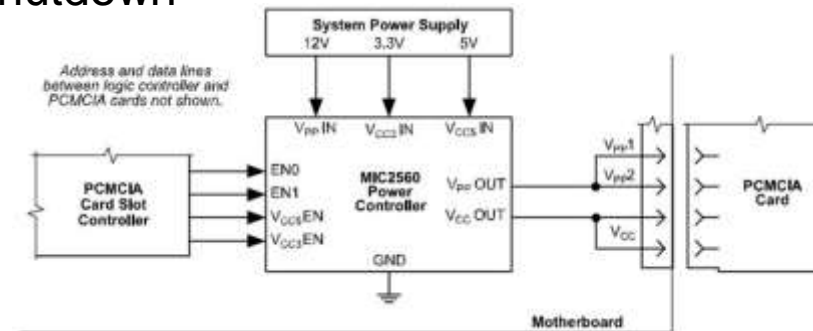




MIC2560

PCMCIA Card Socket V_{CC} and V_{PP} Switching Matrix

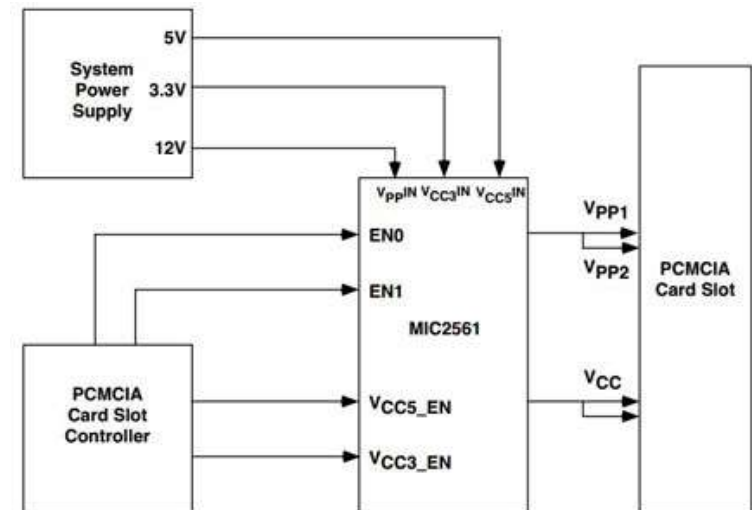
- ◆ Complete PCMCIA V_{CC} and V_{PP} switch matrix in a single IC
- ◆ No external components required
- ◆ Logic compatible with industry standard PCMCIA controllers
- ◆ No voltage overshoot or switching transients
- ◆ Break-before-make switching
- ◆ Output current limit and overtemperature shutdown
- ◆ Digital flag for error condition indication
- ◆ Ultra-low power consumption
- ◆ Digital selection of V_{CC} and V_{PP} voltages
- ◆ Over 1A V_{CC} output current
- ◆ 200mA V_{PP} (12V) output current
- ◆ Options for direct compatibility with industry standard PCMCIA controllers
- ◆ 16-Pin SOIC package



MIC2561

PCMCIA Card Socket V_{CC} and V_{PP} Switching Matrix

- ◆ Complete PCMCIA V_{CC} and V_{PP} Switch Matrix in a Single IC
- ◆ No External Components Required
- ◆ Controlled Switching Times
- ◆ Logic Options for Compatible with Industry Standard PCMCIA Controllers
- ◆ No Voltage Overshoot or Switching Transients
- ◆ Break-Before-Make Switching
- ◆ Output Current Limit and Over-Temperature Shutdown
- ◆ Digital Flag for Error Condition Indication
- ◆ Ultra Low Power Consumption
- ◆ Digital Selection of V_{CC} and V_{PP} Voltages
- ◆ Over 750mA of V_{CC} Output Current
- ◆ 200mA of V_{PP} Output Current
- ◆ 14-Pin SOIC Package

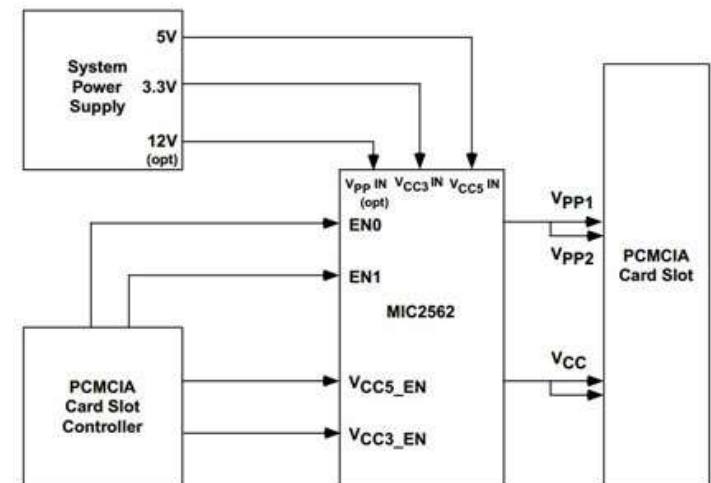




MIC2562A

PCMCIA/CardBus Socket Power Controller

- ◆ High-efficiency, low-resistance switches require no 12V bias supply
- ◆ No external components required
- ◆ Output current limit and overtemperature shutdown
- ◆ Open-drain flag for error condition indication
- ◆ Ultra-low power consumption
- ◆ Complete PC Card/CardBus V_{CC} and V_{PP} switch matrix in a single package
- ◆ Logic compatible with industry standard PC Card logic controllers
- ◆ No voltage shoot-through or switching transients
- ◆ Break-before-make switching
- ◆ Digital selection of V_{CC} and V_{PP} voltages
- ◆ Over 1A V_{CC} output current
- ◆ Over 200mA V_{PP} output current
- ◆ Pb-free SOIC packages
- ◆ UL recognized, file #179633

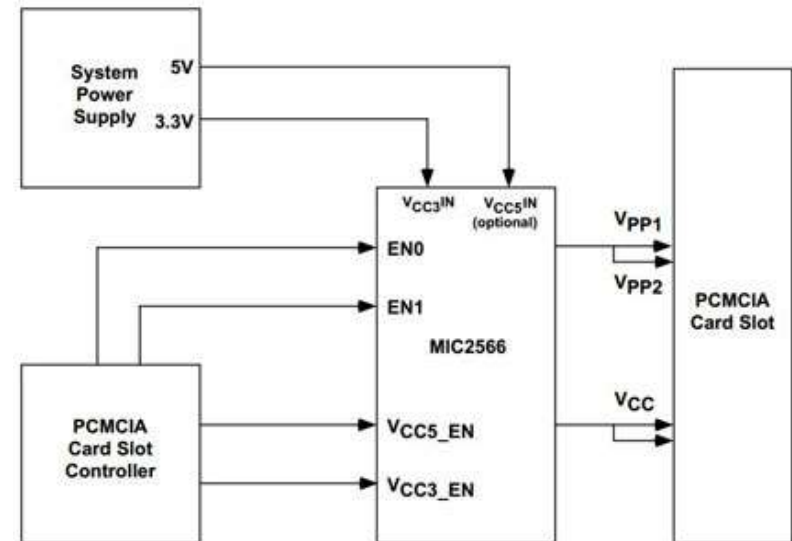




MIC2566

Single-Slot PC Card/CardBus Power Controller

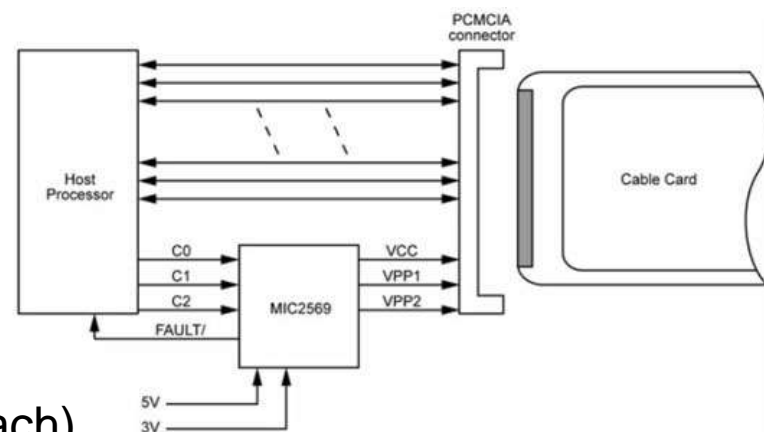
- ◆ Complete single-slot power switch solution
- ◆ No external components required
- ◆ Output current limit and thermal shutdown
- ◆ Ultra-low power consumption
- ◆ Compatible with standard PC Card logic controllers
- ◆ Break-before-make switching (no transients)
- ◆ Digital V_{CC} and V_{PP} voltage selection
- ◆ > 1A V_{CC} output current per slot
- ◆ > 120mA V_{PP} output current per slot
- ◆ 14-pin SOP and TSSOP package
- ◆ Pb-free SO package
- ◆ UL recognized, file #179633



MIC2569

CableCARD™ Power Switch

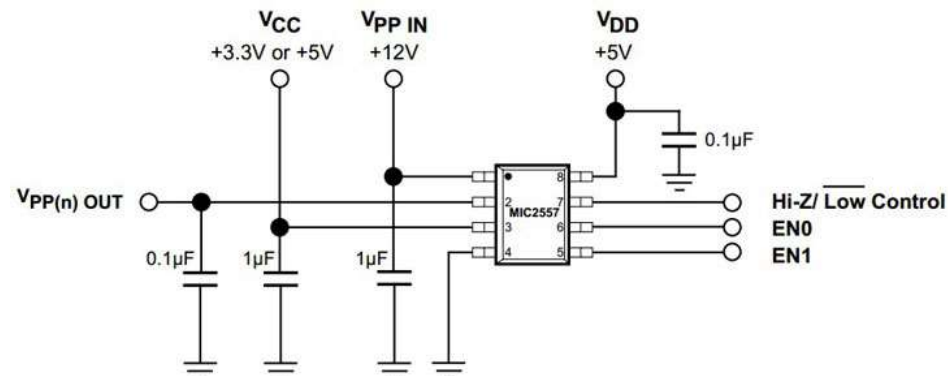
- ◆ 110 mΩ maximum V_{CC} on resistance
- ◆ 400 mΩ maximum V_{PP} on resistance
- ◆ 3.0V to 3.6V for the 3.3V_{IN} operating range
- ◆ 3.0V to 5.5V for the 5V_{IN} operating range
- ◆ 1.3A minimum V_{CC} current limit
- ◆ 150mA minimum V_{PP} current limit (150mA each)
- ◆ Compact 16-pin QSOP packaging
- ◆ Operating temperatures from -40°C to +85°C
- ◆ Low quiescent current
- ◆ Soft start turn-on
- ◆ Break-before-make voltage switching
- ◆ Short-circuit protection with thermal shutdown
- ◆ Input under voltage lock-out (UVLO)
- ◆ ESD protection
- ◆ No external components required



MIC2557

PCMCIA Card Socket V_{PP} Switching Matrix

- ◆ Complete PCMCIA V_{PP} Switch Matrix in a Single IC
- ◆ No External Components Required
- ◆ Digital Selection of 0V, V_{CC} , V_{PP} , or High Impedance Output
- ◆ No V_{PP} OUT Overshoot or Switching Transients
- ◆ Break-Before-Make Switching
- ◆ Low Power Consumption
- ◆ 120mA V_{PP} (12V) Output Current
- ◆ Optional Active Source Clamp for Zero Volt Condition
- ◆ 3.3V or 5V Supply Operation
- ◆ 8-Pin SOIC Package

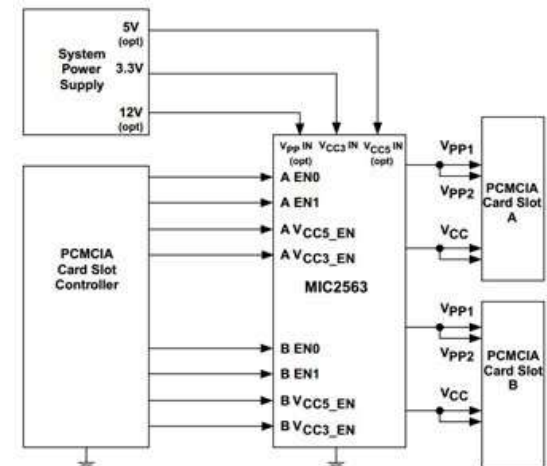




MIC2563A

Dual-Slot PCMCIA/CardBus Power Controller

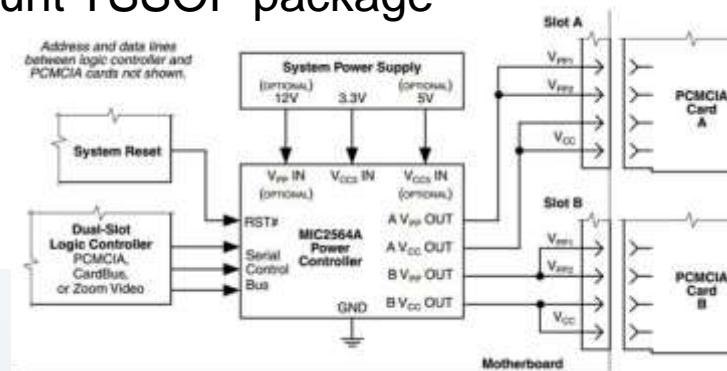
- ◆ Single package controls two PC Card slots
- ◆ High-efficiency, low-resistance switches require no 12V bias supply
- ◆ No external components required
- ◆ Output current limit and overtemperature shutdown
- ◆ Ultra-low power consumption
- ◆ Complete dual-slot PC Card/CardBus V_{CC} and V_{PP} switch matrix in a single package
- ◆ Logic compatible with industry standard PC Card logic controllers
- ◆ No voltage shoot-through or switching transients
- ◆ Break-before-make switching
- ◆ Digital selection of V_{CC} and V_{PP} voltages
- ◆ Over 1A V_{CC} output current for each section
- ◆ Over 250mA V_{PP} output current for each section
- ◆ Lead-free 28-pin SSOP package
- ◆ UL recognized, file #179633



MIC2564A

Dual Serial PCMCIA/CardBus Power Controller

- ◆ Standard 3-wire serial control data input
- ◆ Controls two card slots from one surface mount device
- ◆ High-efficiency, low-resistance switches
- ◆ 12V supply optional (not required by MIC2564A)
- ◆ Current limit and overtemperature shutdown
- ◆ Ultra-low 1mA-typical standby power consumption
- ◆ Cross-conduction lockout (no switching transients)
- ◆ Break-before-make switching
- ◆ 1A minimum V_{CC} output per slot
- ◆ Independent V_{CC} and V_{PP} voltage output (MIC2564A-1)
- ◆ 120mA minimum V_{PP} output current per slot
- ◆ Lead-free 24-pin surface-mount TSSOP package
- ◆ UL recognized, file #179633

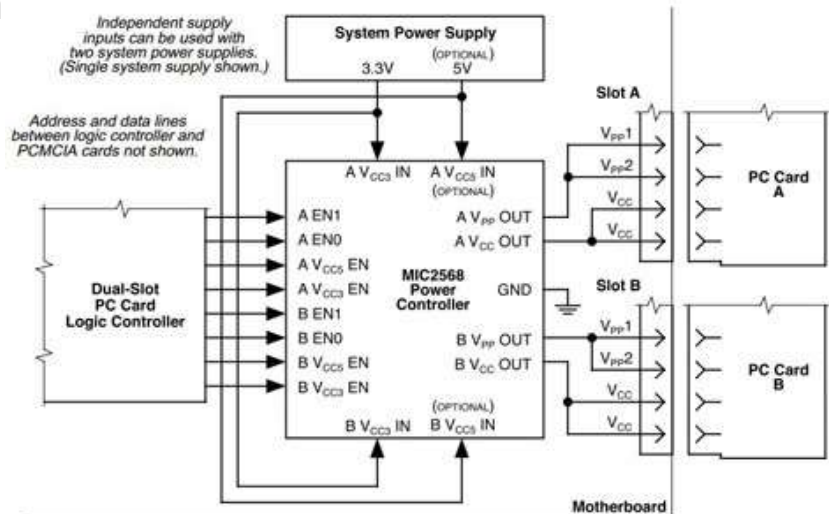




MIC2568

Dual-Slot PC Card/CardBus Power Controller

- ◆ Complete single-chip dual-slot power switch
- ◆ No external components required
- ◆ Output current limit and thermal shutdown
- ◆ Ultra-low power consumption
- ◆ Compatible with standard PC Card logic controllers
- ◆ Break-before-make switching (no transients)
- ◆ Digital V_{CC} and V_{PP} voltage selection
- ◆ $> 1A$ V_{CC} output current per slot
- ◆ $> 200mA$ V_{PP} output current per slot
- ◆ 28-pin SSO and TSSO package
- ◆ Pb-free 28-pin SSO package
- ◆ UL recognized, file #179633

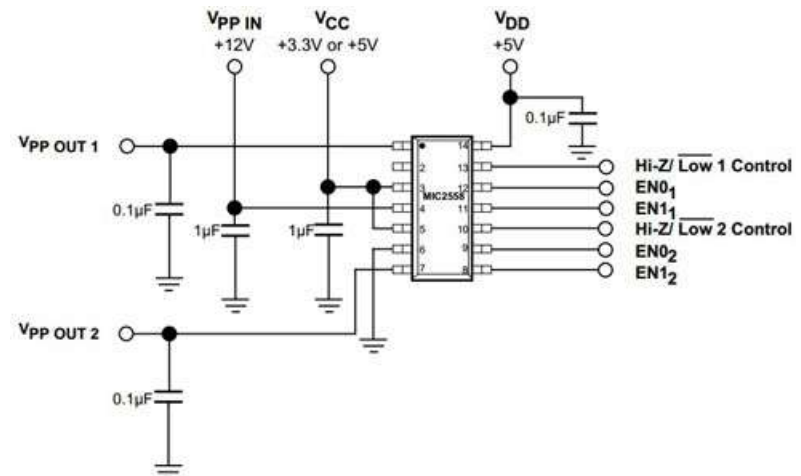


MIC2558



PCMCIA Dual Card Socket V_{PP} Switching Matrix

- ◆ Complete PCMCIA V_{PP} Switch Matrix in a Single IC
- ◆ Dual Matrix allows independent V_{PP1} and V_{PP2}
- ◆ Digital Selection of 0V, V_{CC} , V_{PP} , or High Impedance Output
- ◆ No $V_{PP\text{OUT}}$ Overshoot or Switching Transients
- ◆ Break-Before-Make Switching
- ◆ Ultra Low Power Consumption
- ◆ 120mA V_{PP} (12V) Output Current
- ◆ Optional Active Source Clamp for Zero Volt Condition
- ◆ 3.3V or 5V Supply Operation
- ◆ 14-Pin SOIC Package

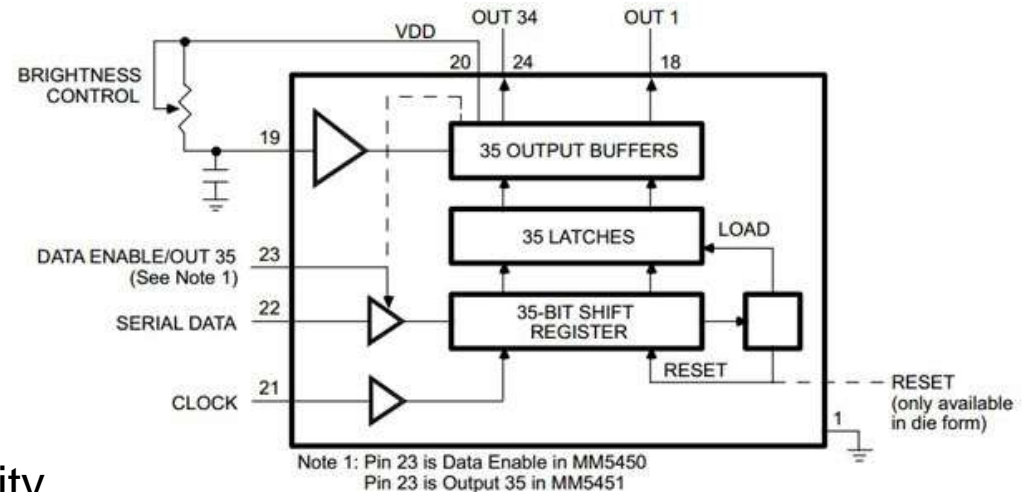




MM5450/1

LED Display Driver

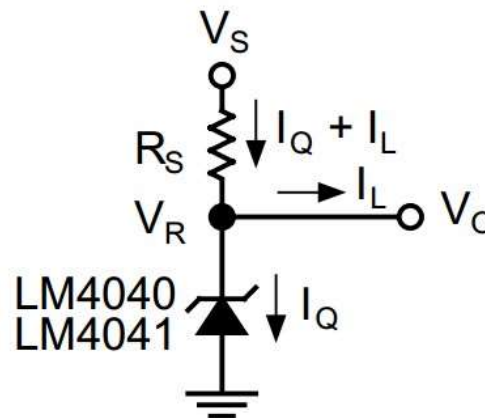
- ◆ Continuous brightness control
- ◆ Serial data input
- ◆ No load signal requirement
- ◆ Enable (on MM5450)
- ◆ Wide power supply operation
- ◆ TTL compatibility
- ◆ 34 or 35 outputs, 15mA capability
- ◆ Alphanumeric capability



LM4040C

Precision Micropower Shunt Voltage Reference

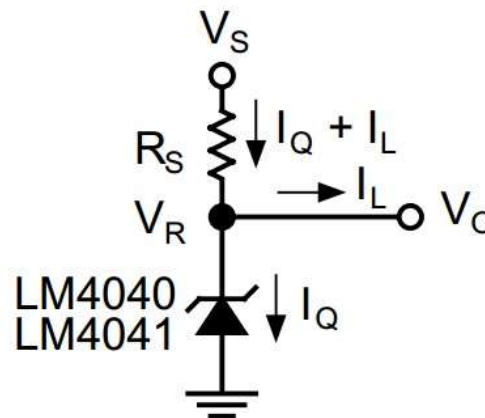
- ◆ Small SOT-23 package
- ◆ No output capacitor required
- ◆ Tolerates capacitive loads
- ◆ Fixed reverse breakdown voltages of 1.225V, 2.5V, 4.096V and 5.0V
- ◆ Adjustable reverse breakdown version
- ◆ Contact Micrel for parts with extended temperature range.



LM4041C

Precision Micropower Shunt Voltage Reference

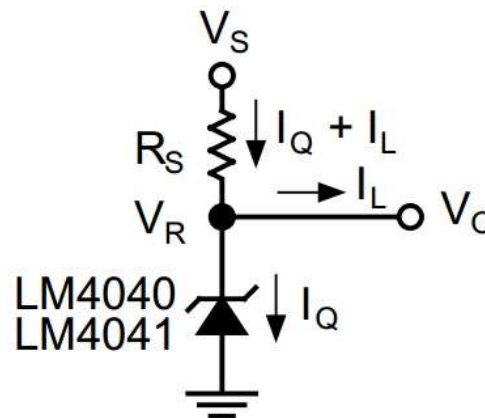
- ◆ Small SOT-23 package
- ◆ No output capacitor required
- ◆ Tolerates capacitive loads
- ◆ Fixed reverse breakdown voltages of 1.225, 2.5V, 4.096V and 5.0V
- ◆ Adjustable reverse breakdown version
- ◆ Contact Micrel for parts with extended temperature range.



LM4040D

Precision Micropower Shunt Voltage Reference

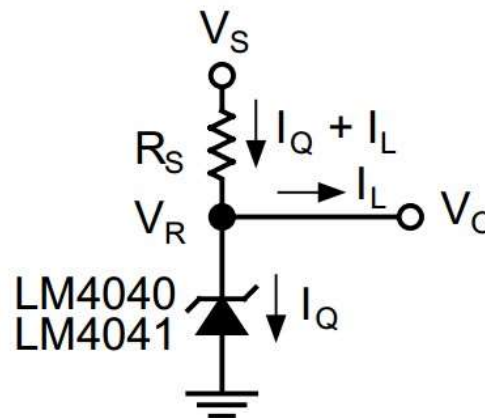
- ◆ Small SOT-23 package
- ◆ No output capacitor required
- ◆ Tolerates capacitive loads
- ◆ Fixed reverse breakdown voltages of 1.225, 2.5V, 4.096V and 5.0V
- ◆ Adjustable reverse breakdown version
- ◆ Contact Micrel for parts with extended temperature range.



LM4041D

Precision Micropower Shunt Voltage Reference

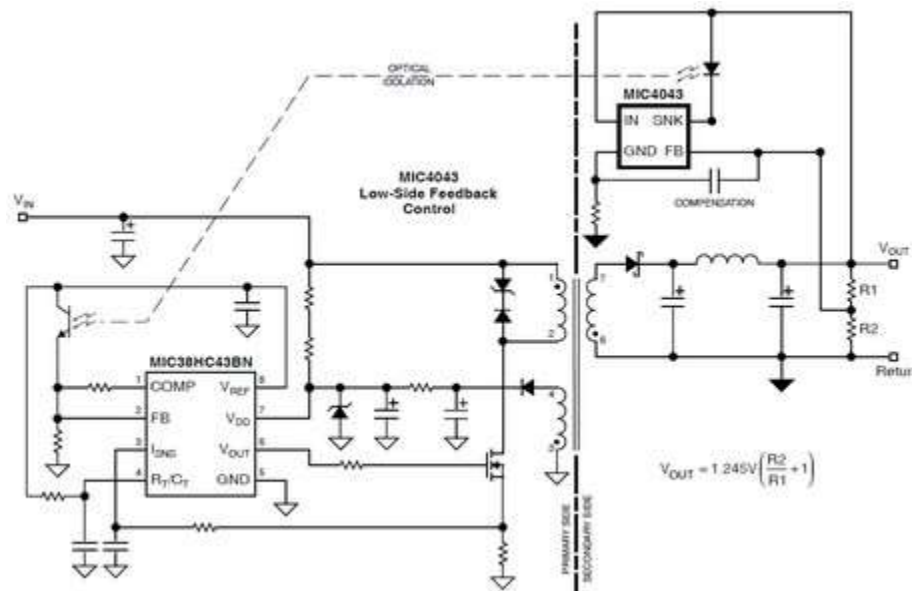
- ◆ Small SOT-23 package
- ◆ No output capacitor required
- ◆ Tolerates capacitive loads
- ◆ Fixed reverse breakdown voltages of 1.225, 2.5V, 4.096V and 5.0V
- ◆ Adjustable reverse breakdown version
- ◆ Contact Micrel for parts with extended temperature range.



MIC4043

Low-Voltage Secondary-Side Shunt Regulator

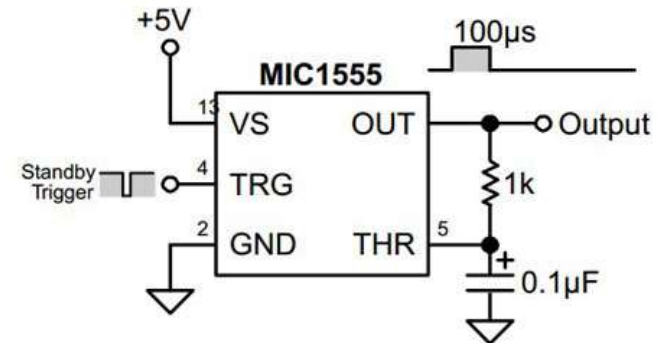
- ◆ Ideal for 1.8V switching converters
- ◆ Low-voltage operation: 400mV maximum saturation over operating temperature range
- ◆ Easy to use: voltage in, current out
- ◆ 2% voltage tolerance over operating temperature range



MIC1555

IttyBitty® RC Timer / Oscillator

- ◆ +2.7V to +18V operation
- ◆ Low current
 - <1μA typical shutdown mode (MIC1557)
 - 200μA typical (TRG and THR low) at 3V supply
- ◆ Timing from microseconds to hours
- ◆ "Zero" leakage trigger and threshold inputs
- ◆ 50% square wave with one Resistor, one Capacitor
- ◆ Threshold input precedence over trigger input
- ◆ <15Ω output on resistance
- ◆ No output cross-conduction current spikes
- ◆ <0.005%/°C temperature stability
- ◆ <0.055%/V supply stability
- ◆ Small SOT-23-5 surface mount package



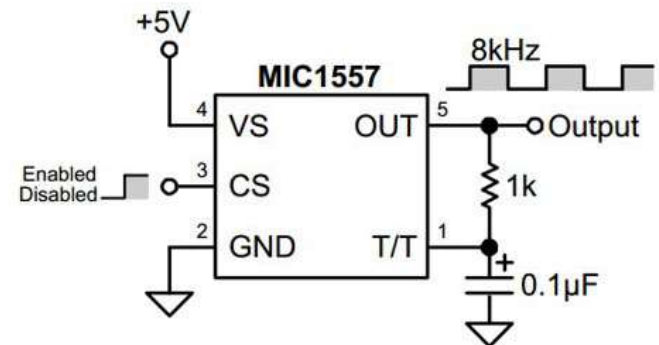
Monostable (One-Shot)



MIC1557

IttyBitty® RC Timer / Oscillator

- ◆ +2.7V to +18V operation
- ◆ Low current
 - <1 μ A typical shutdown mode (MIC1557)
 - 200 μ A typical (TRG and THR low) at 3V supply
- ◆ Timing from microseconds to hours
- ◆ "Zero" leakage trigger and threshold inputs
- ◆ 50% square wave with one Resistor, one Capacitor
- ◆ Threshold input precedence over trigger input
- ◆ <15 Ω output on resistance
- ◆ No output cross-conduction current spikes
- ◆ <0.005%/°C temperature stability
- ◆ <0.055%/V supply stability
- ◆ Small SOT-23-5 surface mount package



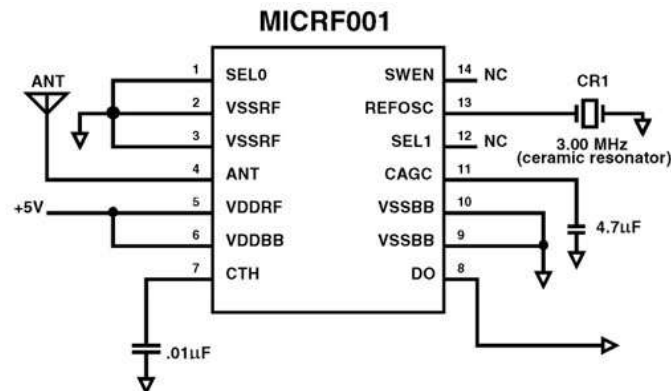
Astable (Oscillator)



MICRF001

QwikRadio® Receiver/Data Demodulator

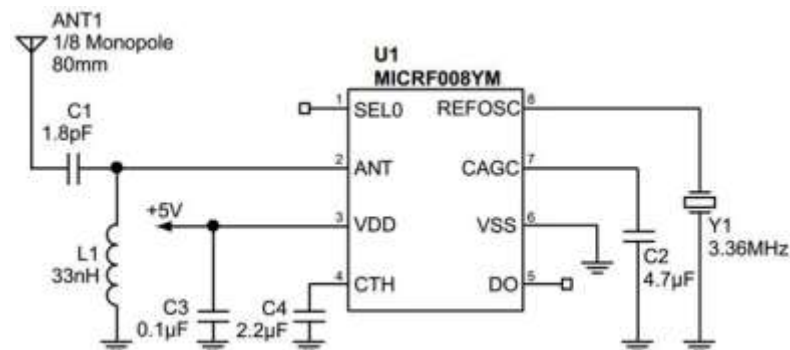
- ◆ Complete UHF receiver on a monolithic chip
- ◆ Frequency range 300 to 440 MHz
- ◆ Typical range over 100 meters with monopole antenna
- ◆ Data rates to 4.8kbps
- ◆ Automatic tuning, no manual adjustment
- ◆ No Filters or Inductors required
- ◆ Very low RF re-radiation at the antenna
- ◆ Direct CMOS logic interface to standard decoder and microprocessor ICs
- ◆ Extremely low external part count



MICRF008

QwikRadio® Sweep-Mode Receiver

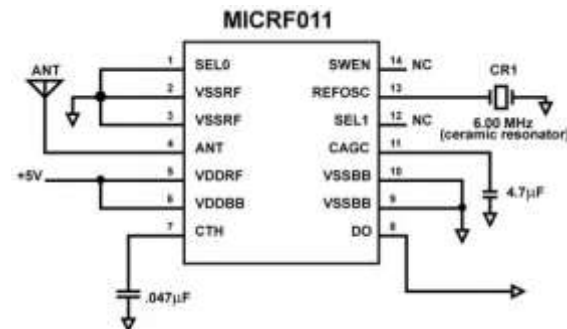
- ◆ Complete UHF receiver on a monolithic chip
- ◆ 300MHz to 440MHz frequency range
- ◆ Up to 4.8kbps data rate.
- ◆ Automatic tuning, no manual adjustment
- ◆ Very low RF antenna reradiation
- ◆ CMOS logic interface for standard ICs
- ◆ Low external part count
- ◆ Replaces superregenerative receivers design
- ◆ Manufacturability and same performance over the years
- ◆ Very small PCB area required



MICRF011

QwikRadio® Receiver/Data Demodulator

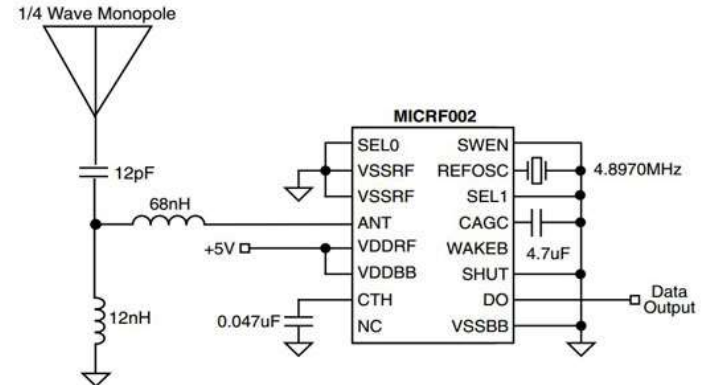
- ◆ Complete UHF receiver on a monolithic chip
- ◆ Frequency range 300 to 440 MHz
- ◆ Typical range over 200 meters with monopole antenna
- ◆ Data rates to 2.5kbps (SWP), 10kbps (FIXED)
- ◆ Automatic tuning, no manual adjustment
- ◆ No Filters or Inductors required
- ◆ Low Operating Supply Current: 2.4mA at 315MHz
- ◆ Fully pin compatible with MICRF001
- ◆ Very low RF re-radiation at the antenna
- ◆ Direct CMOS logic interface to standard decoder and microprocessor ICs
- ◆ Extremely low external part count



MICRF002/22

300-440MHz QwikRadio® ASK Receiver

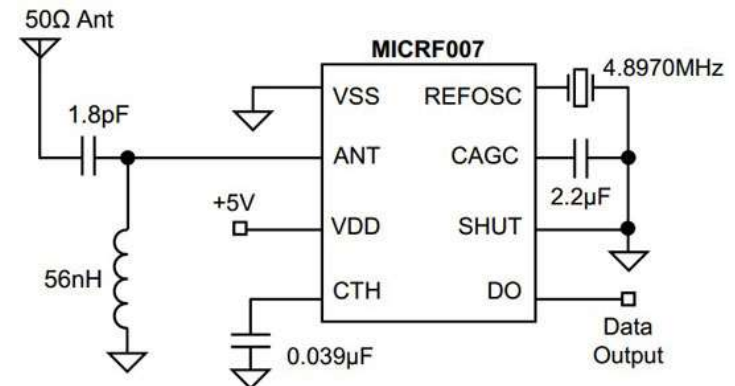
- ◆ 300MHz to 440MHz frequency range
- ◆ Data-rate up to 10kbps (fixed-mode)
- ◆ Low Power Consumption
- ◆ 2.2mA fully operational (315MHz)
- ◆ 0.9μA in shutdown
- ◆ 220μA in polled operation (10:1 duty-cycle)
- ◆ Wake-up output flag to enable decoders and microprocessors
- ◆ Very low RF re-radiation at the antenna
- ◆ Highly integrated with extremely low external part count
- ◆ MICRF022: same part packaged in 8-pin packaging with a reduced feature set



MICRF007

QwikRadio® Low-Power UHF Receiver

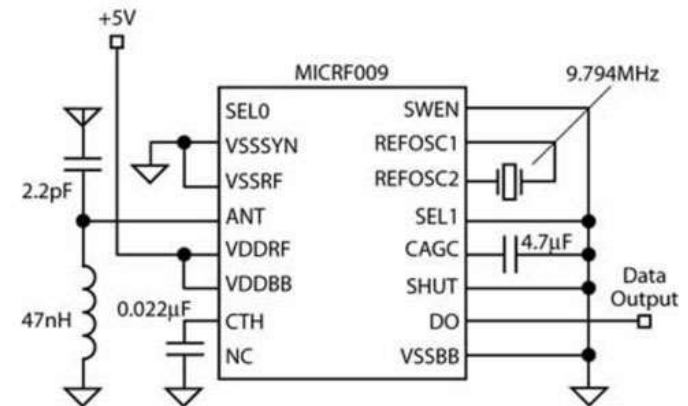
- ◆ Complete UHF receiver on a monolithic chip
- ◆ 300MHz to 440MHz
- ◆ Data rates up to 3.2kbps NRZ
- ◆ Automatic tuning, no manual adjustment
- ◆ Low power consumption
 - 315MHz
 - 2.3 mA fully operational (315MHz)
 - 230µA polled at a 10:1 duty cycle ratio
 - 433.92MHz
 - 3.8mA fully operational (433.92MHz)
 - 380µA polled at a 10:1 duty cycle ratio
- ◆ 0.5µA shutdown
- ◆ Virtually no RF re-radiation at the antenna
- ◆ CMOS logic interface to standard decoder and microprocessor ICs
- ◆ Extremely low external part count
- ◆ No filters or inductors required



MICRF009

QwikRadio® Low-Power UHF Receiver

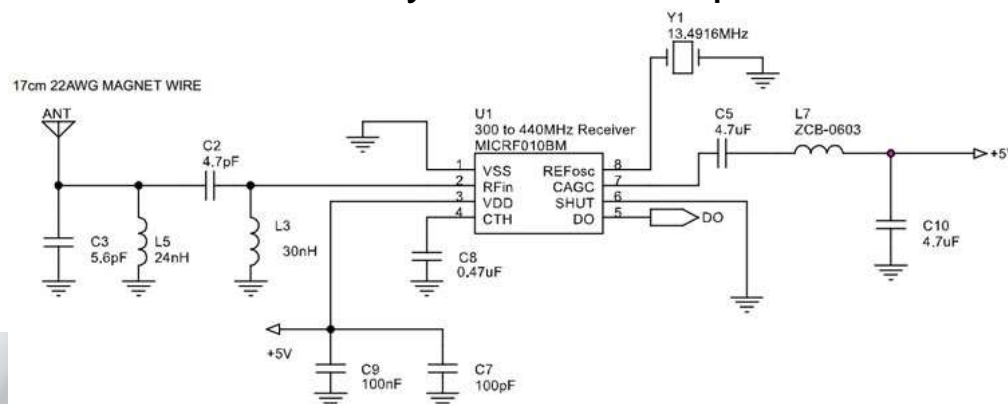
- ◆ High sensitivity (-104dBm)
- ◆ Fast recovery from shutdown (1ms)
- ◆ 300MHz to 440MHz frequency range
- ◆ Data-rate up to 2.0kbps (fixed-mode, Manchester encoding)
- ◆ Low power consumption
 - 2.9mA fully operational (315MHz)
 - 0.15µA in shutdown
 - 290µA in polled mode (10:1 duty-cycle)
- ◆ Shutdown input
- ◆ Automatic tuning, no manual adjustment
- ◆ Very low RF re-radiation at the antenna
- ◆ Highly integrated with extremely low external part count
- ◆ 1ms time to good data



MICRF010

QwikRadio® Low-Power UHF Receiver

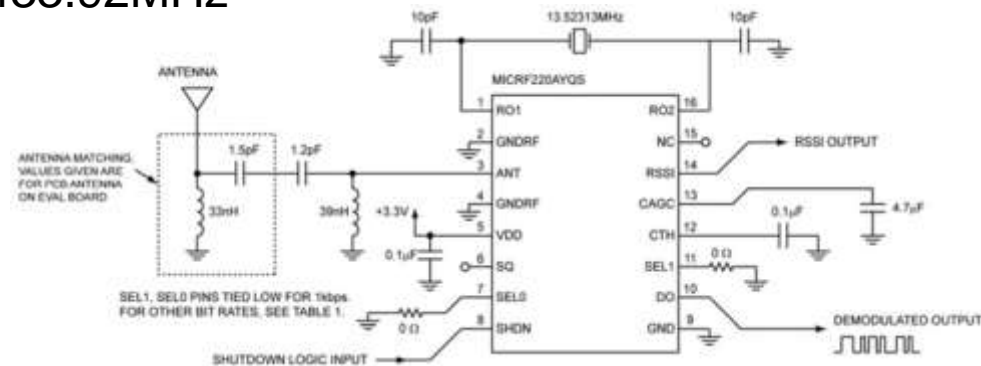
- ◆ High sensitivity (-104dBm)
- ◆ 300MHz to 440MHz frequency range
- ◆ Data-rate up to 2.0kbps (Manchester encoding)
- ◆ Low power consumption
 - 2.9mA fully operational (315MHz)
 - 0.15µA in shutdown
 - 290µA in polled mode (10:1 duty-cycle)
- ◆ Shutdown input
- ◆ Automatic tuning, no manual adjustment
- ◆ Very low RF re-radiation at the antenna
- ◆ Highly integrated with extremely low external part count



MICRF220

300MHz to 450MHz, 3.3V ASK/OOK Receiver with RSSI and Squelch

- ◆ -110dBm sensitivity at 1kbps with 0.1% BER
- ◆ Supports bit rates up to 20kbps at 433.92MHz
- ◆ 25dB image-reject mixer
- ◆ No IF filter required
- ◆ 60dB analog RSSI output range
- ◆ 3.0V to 3.6V supply voltage range
- ◆ 4.3mA supply current at 315MHz
- ◆ 6.0mA supply current at 434MHz
- ◆ 0.1μA supply current in shutdown mode
- ◆ Data output squelch until valid bits detected
- ◆ 16-pin QSOP package (4.9mm x 6.0mm)
- ◆ -40°C to +105°C temperature range
- ◆ 3kV HBM ESD Rating

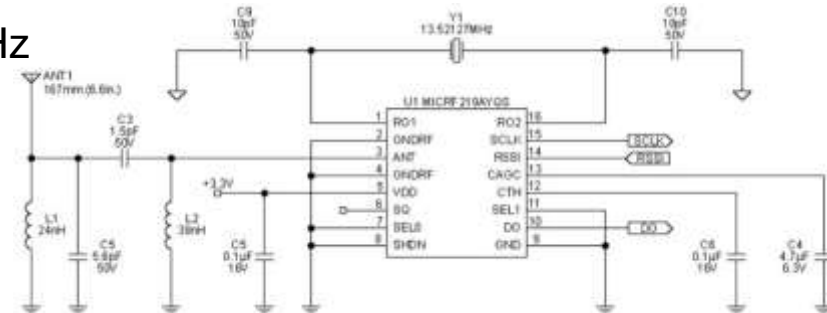


MICRF219

300MHz to 450MHz ASK Receiver with RSSI, Auto-Poll, Bit-Check and Squelch

NOT RECOMMENDED, REFER TO MICRF219A FOR NEW DESIGNS

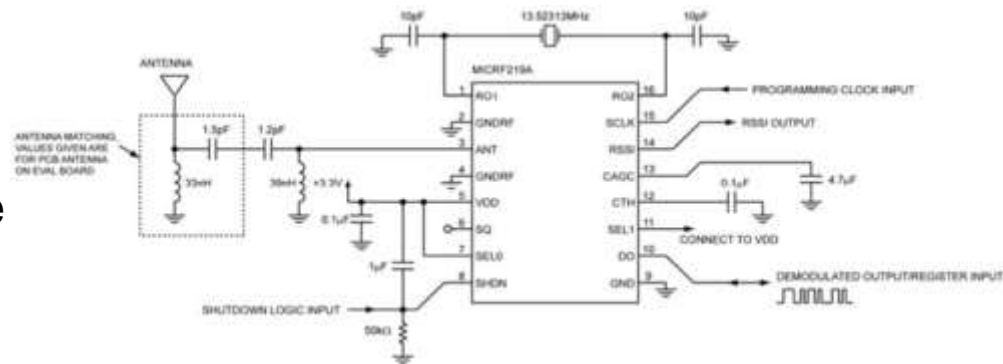
- ◆ S110dBm sensitivity at 1kbps with BER 10E-02
- ◆ Supports data rates up to 10kbps at 433.92MHz
- ◆ 25dB Image-Reject Mixer
- ◆ No IF Filter Required
- ◆ 60dB Analog RSSI Output
- ◆ 3.0V to 3.6V Supply Voltage Range
- ◆ 4.0mA supply current at 315MHz (continuous receive)
- ◆ 6.0mA supply current at 434MHz (continuous receive)
- ◆ 0.5µA supply current in Shutdown Mode
- ◆ Optional Auto-Polling (sleep mode, current <0.1mA)
- ◆ Optional Valid Bit-Check in Auto-Poll Mode
- ◆ Optional Programmable 6dB to 42dB Desense
- ◆ Optional Data Output Squelch until valid bits detected
- ◆ 16-pin QSOP Package (4.9mm x 6.0mm)
- ◆ -40°C to +105°C Temperature Range
- ◆ 2kV HBM ESD Rating
- ◆ Evaluation board QR219BPF Available



MICRF219A

300MHz to 450MHz ASK/OOK Receiver with Auto-Poll, RSSI, and Squelch

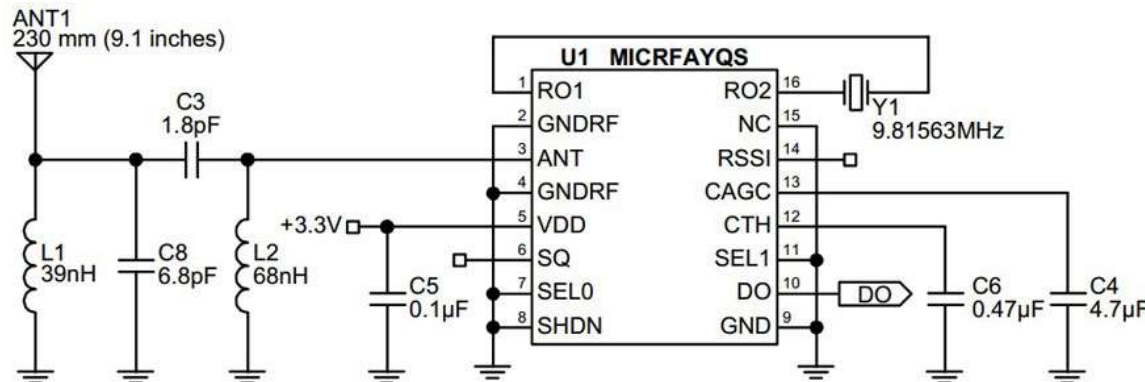
- ◆ -110dBm sensitivity at 1kbps with 0.1% BER
- ◆ Auto-polling mode with bit checking
- ◆ Supports bit rates up to 20kbps at 433.92MHz
- ◆ 25dB image-reject mixer
- ◆ No IF filter required
- ◆ 60dB analog RSSI output range
- ◆ 3.0V to 3.6V supply voltage range
- ◆ 4.3mA supply current at 315MHz
- ◆ 6.0mA supply current at 434MHz
- ◆ 13μA supply current in sleep mode
- ◆ 0.1μA supply current in shutdown mode
- ◆ 16-pin QSOP package (4.9mm x 6.0mm)
- ◆ -40°C to +105°C temperature range
- ◆ 3kV HBM ESD Rating



MICRF213

3.3V, QwikRadio® 315MHz Receiver

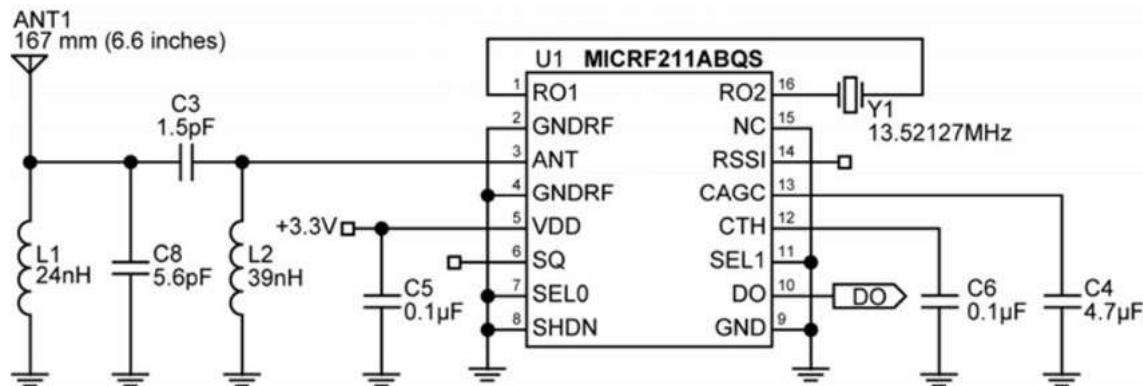
- ◆ Up to -110dBm sensitivity, 1kbps and BER 10E-02
- ◆ Image Rejection Mixer
- ◆ Frequency from 300MHz to 350MHz
- ◆ Low current consumption: 3.9mA @ 315MHz, continuous on data rates to 7.2kbps (Manchester Encoded)
- ◆ Analog RSSI Output
- ◆ No IF filter required
- ◆ Excellent selectivity and noise rejection
- ◆ Low external part count



MICRF211

3.3V, QwikRadio® 433.92 MHz Receiver

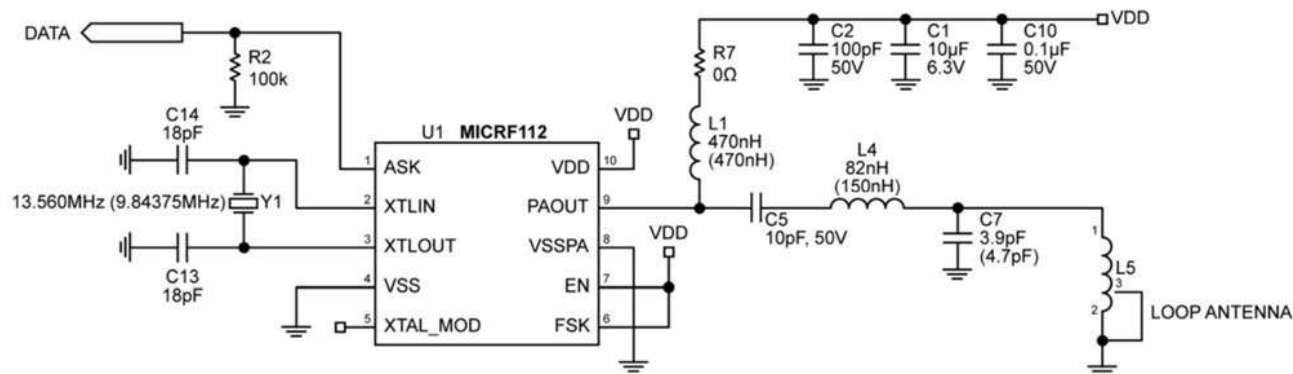
- ◆ -110dBm sensitivity, 1kbps and BER 10E-02
- ◆ Image Rejection Mixer
- ◆ Frequency from 380MHz to 450MHz
- ◆ Low power, 6.0mA @ 433.92MHz, continuous on data rates to 10kbps (Manchester Encoded)
- ◆ Analog RSSI Output
- ◆ No IF filter required
- ◆ Excellent selectivity and noise rejection
- ◆ Low external part count



MICRF112

QwikRadio® UHF ASK/FSK Transmitter

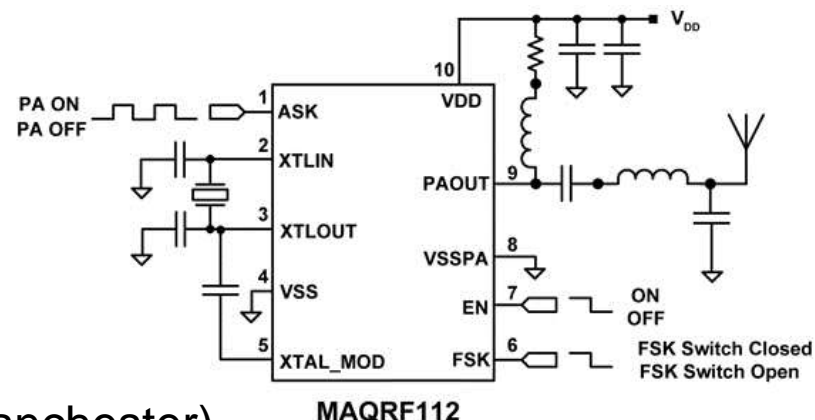
- ◆ Complete UHF transmitter
- ◆ Frequency range 300MHz to 450MHz
- ◆ Data rates up to 50kbps ASK, 10kbps FSK
- ◆ Output Power to 10dBm
- ◆ Low external part count
- ◆ Low standby current $<1\mu\text{A}$
- ◆ Low voltage operation (down to 1.8V)
- ◆ Operate with crystals or ceramic resonators



MAQRF112

Automotive, 300MHz to 450MHz, +10dBm, 1.8V to 3.6V, ASK/FSK Transmitter w/Shutdown

- ◆ AEC-Q100 Automotive Qualified
- ◆ 300MHz to 450MHz frequency range
- ◆ Data rates up to 50kbps ASK/10kbps FSK
- ◆ 1.8V to 3.6V operating voltage range
- ◆ +10dBm output power (CW) at 3.0V
- ◆ 11.5mA of supply current at +10dBm (CW)
- ◆ 6.9mA of supply current at 1kbps (ASK, Manchester)
- ◆ 50nA supply current in shutdown mode
- ◆ Needs only one crystal to set the desired RF frequency
- ◆ -40°C to +125°C operating temperature range
- ◆ 10-pin MSOP package (4.9mm x 3.0mm)

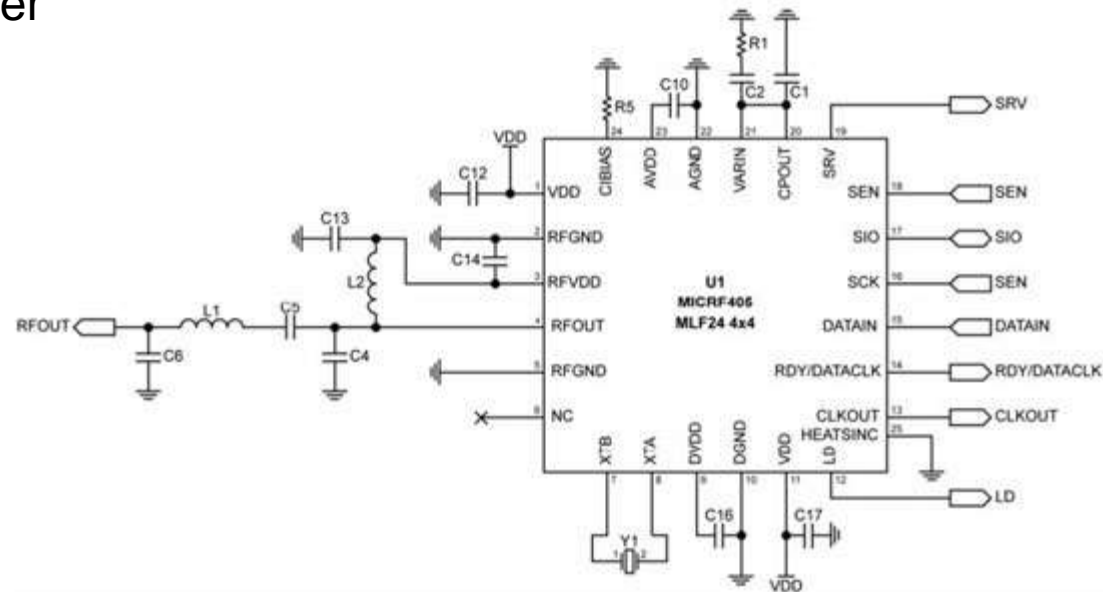




MICRF405

290MHz – 980MHz ISM Band ASK / FSK Transmitter

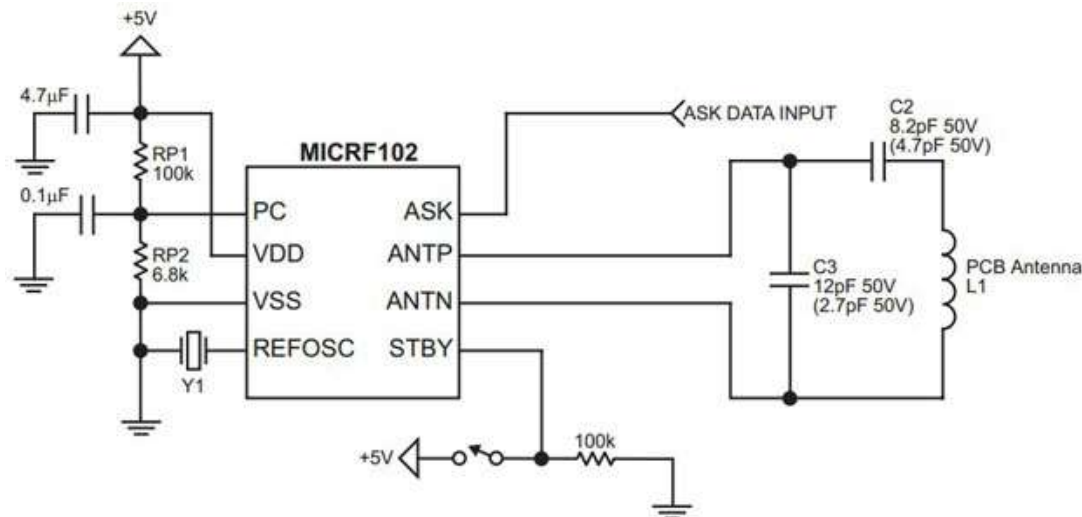
- ◆ FSK/ASK transmitter
- ◆ Frequency programmable
- ◆ ASK modulation depth programmable
- ◆ High efficiency power amplifier
- ◆ Programmable output power
- ◆ Power down function
- ◆ MCU reference clock
- ◆ Base band package engine
- ◆ TX buffer
- ◆ No external tuning circuitry



MICRF102

QwikRadio® UHF ASK Transmitter

- ◆ Complete UHF transmitter on a monolithic chip
- ◆ Frequency range 300MHz to 470MHz
- ◆ Data rates to 20kbps
- ◆ Automatic antenna alignment, no manual adjustment
- ◆ Low external part count
- ◆ Low standby current $<0.04\mu\text{A}$

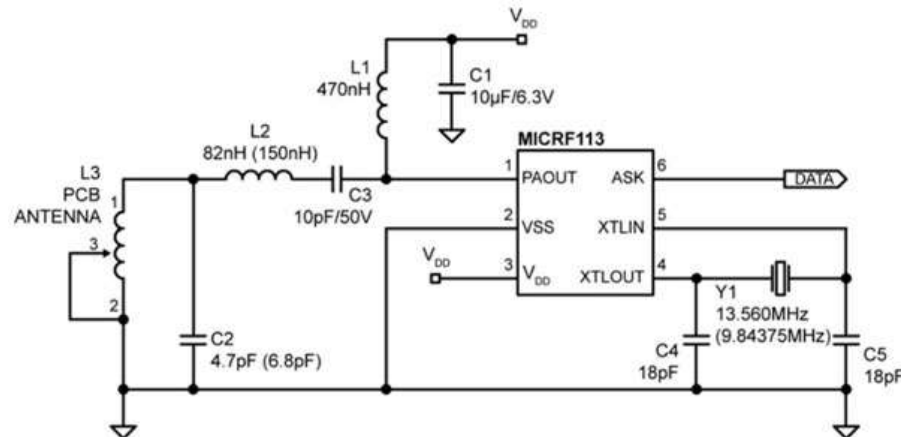




MICRF113

300MHz to 450MHz +10dBm ASK Transmitter in SOT23

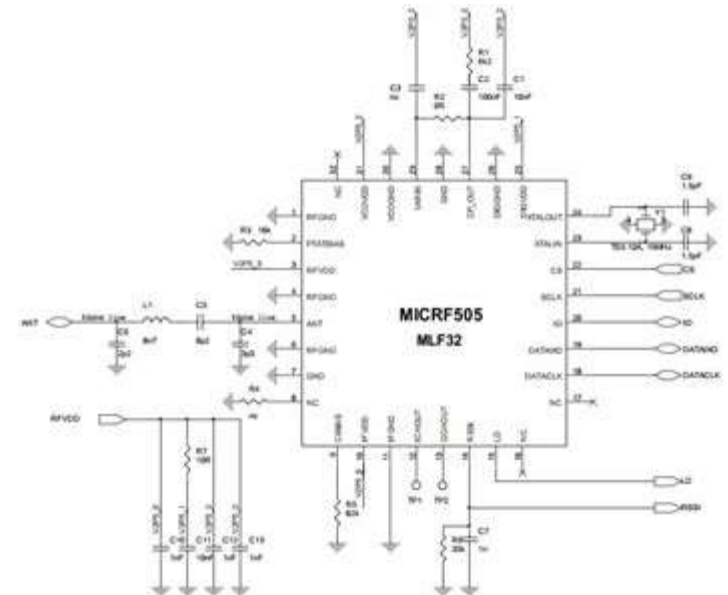
- ◆ Complete UHF ASK transmitter
- ◆ Frequency range 300MHz to 450MHz
- ◆ Bit rates up to 20kbps
- ◆ Output power up to 10dBm
- ◆ Low external part count
- ◆ Low voltage operation (down to 1.8V)
- ◆ Operate with crystals or ceramic resonators
- ◆ 6-pin SOT23



MICRF505

850MHz and 950MHz ISM Band Transceiver

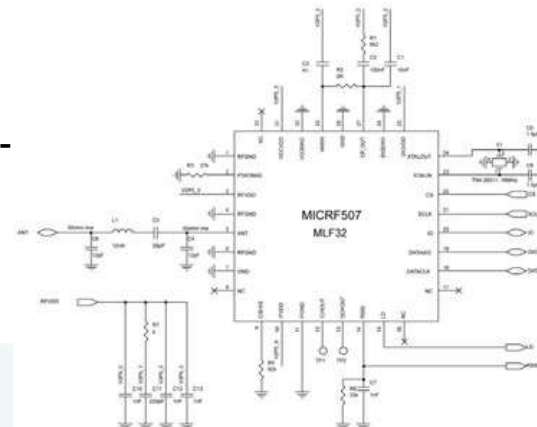
- ◆ True single chip transceiver
- ◆ Digital bit synchronizer
- ◆ Received signal strength indicator (RSSI)
- ◆ RX and TX power management
- ◆ Power down function
- ◆ Reference crystal tuning capabilities
- ◆ Frequency error estimator
- ◆ Baseband shaping
- ◆ Three-wire programmable serial interface
- ◆ Register read back function



MICRF507

470MHz to 510MHz Low-Power FSK Transceiver with +10dBm Power Amplifier

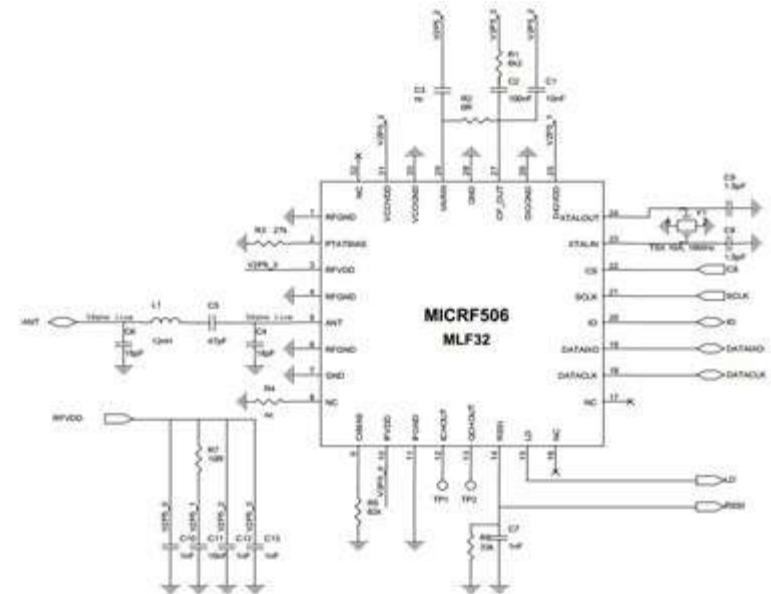
- ◆ -113dBm sensitivity at 2.4kbps encoded bit rate
- ◆ +10dBm power amplifier with seven gain steps
- ◆ 12mA receive supply current
- ◆ 21.5mA transmit supply current at +10dBm
- ◆ 0.2μA power down current (registers retain settings)
- ◆ 280μA standby current (crystal oscillator enabled)
- ◆ Data rates up to 20kbps with PLL divider modulation
- ◆ Data rates up to 200kbps with VCO modulation
- ◆ Integrated transmit and receive (T/R) switch
- ◆ LNA with bypass mode
- ◆ Zero IF I/Q receiver architecture
- ◆ IF pre-amplifiers with DC-offset removal
- ◆ Three-pole Sallen-Key IF channel low-pass pre-filter
- ◆ Six-pole elliptic switched capacitor IF low-pass filter
- ◆ 50kHz - 350kHz programmable baseband bandwidth
- ◆ 59dB blocking at ± 1 MHz offset
- ◆ 53dB adjacent channel rejection at ± 500 kHz offset
- ◆ FSK digital demodulator with clock recovery
- ◆ 50dB Received Signal Strength Indicator (RSSI)
- ◆ Frequency Error Estimator (FEE)
- ◆ Reference crystal tuning capability
- ◆ 2.0 to 2.5V supply voltage range
- ◆ -40°C to +85°C operating temperature range
- ◆ 32-pin MLF® package (5.0 x 5.0 x 0.85mm)



MICRF506

410MHz and 450MHz ISM Band Transceiver

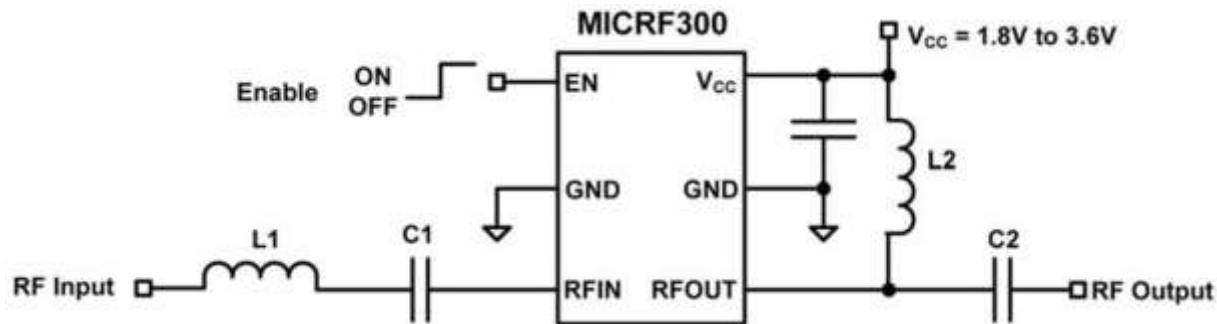
- ◆ True single chip transceiver
- ◆ Digital bit synchronizer
- ◆ Received signal strength indicator (RSSI)
- ◆ RX and TX power management
- ◆ Power down function
- ◆ Reference crystal tuning capabilities
- ◆ Frequency error estimator
- ◆ Baseband shaping
- ◆ Three-wire programmable serial interface
- ◆ Register read back function



MICRF300

100MHz to 1000MHz, 1.8 to 3.6V Low-Noise Amplifier with Shutdown

- ◆ 1.8V to 3.6V supply voltage range
- ◆ 2.5mA operating supply current
- ◆ 1 μ A (Max) shutdown current over temperature
- ◆ 18.3dB gain at 315MHz/433.92MHz
- ◆ 1.15dB noise figure at 315MHz/433.92MHz
- ◆ -25dBm input P1dB compression point at 433.92MHz
- ◆ -40°C to +125°C operating temperature range
- ◆ Small 6-pin SC70 package

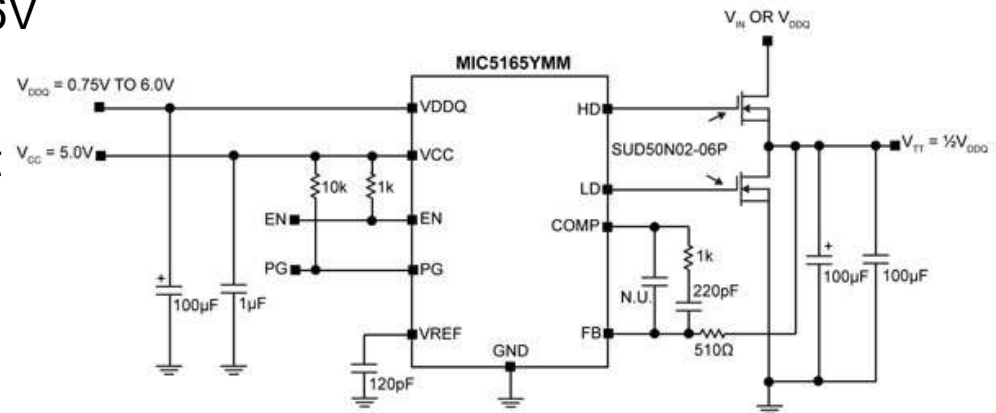




MIC5165

Dual Regulator Controller for DDR3 GDDR3/4/5 Memory Termination

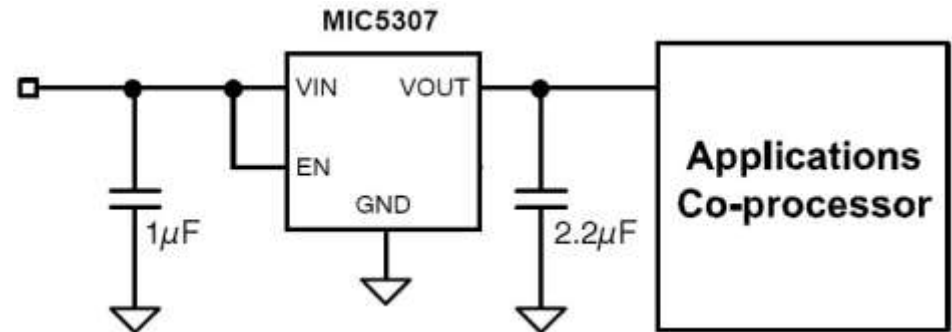
- ◆ Input voltage range: 0.75V to 6V
- ◆ Up to 7A V_{TT} Current
- ◆ Tracking programmable output
- ◆ Power Good signal
- ◆ Wide bandwidth
- ◆ Logic-controlled enable input
- ◆ Requires minimal external components
- ◆ DDR3, GDDR3/4/5 memory termination
- ◆ $-40^{\circ}\text{C} < T_J < +125^{\circ}\text{C}$
- ◆ Tiny MSOP-10 package

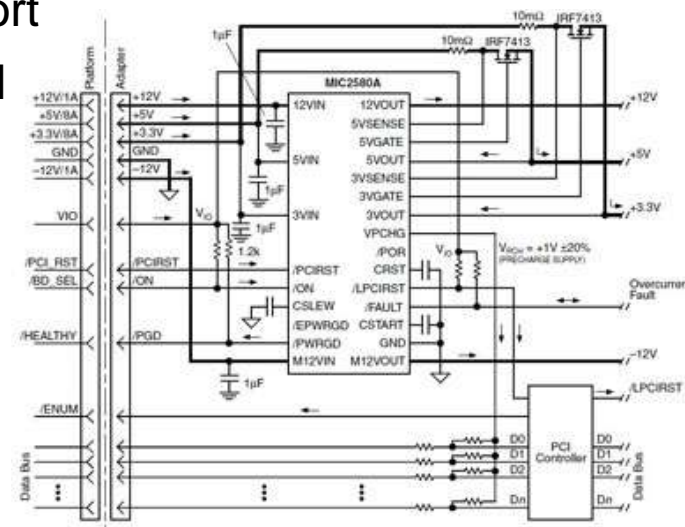


MIC5307

300mA Micropower μ Cap Baseband LDO

- ◆ Input voltage range: 2.4V to 5.5V
- ◆ Ultra-low I_Q : only 20 μ A operating current
- ◆ Stable with ceramic output capacitor
- ◆ Low dropout voltage of 120mV at 300mA
- ◆ High output accuracy:
 - $\pm 1.0\%$ initial accuracy
 - $\pm 2.0\%$ over temperature
- ◆ Thermal shutdown protection
- ◆ Current limit protection

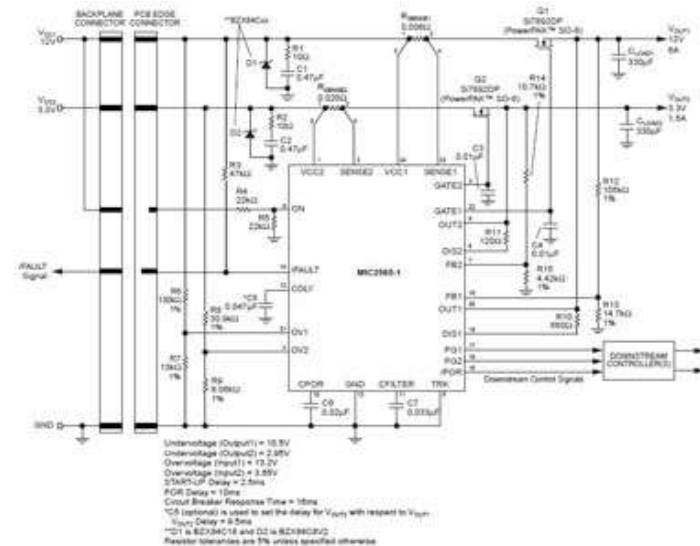




MIC2584/5

Dual-Channel Hot Swap Controller/Sequencer

- ◆ 1.0V to 13.2V supply voltage operation
- ◆ Surge voltage protection up to 20V
- ◆ Programmable inrush current limiting
- ◆ Electronic circuit breaker
- ◆ Undervoltage lockout protection
- ◆ Fast response to short circuit conditions ($<1\mu\text{s}$)
- ◆ Two sequenced output mode selections (MIC2585 only)
- ◆ Dual-level overcurrent fault sensing eliminates false tripping
- ◆ $\Delta 250\text{mV}$ supply tracking mode during turn-on/turn-off (MIC2585 only)
- ◆ Current regulation limits inrush current regardless of load capacitance
- ◆ Overvoltage & undervoltage output monitoring (Overvoltage for MIC2585 only)
- ◆ Power-On Reset & Power-Good status output (Power-Good for MIC2585 only)

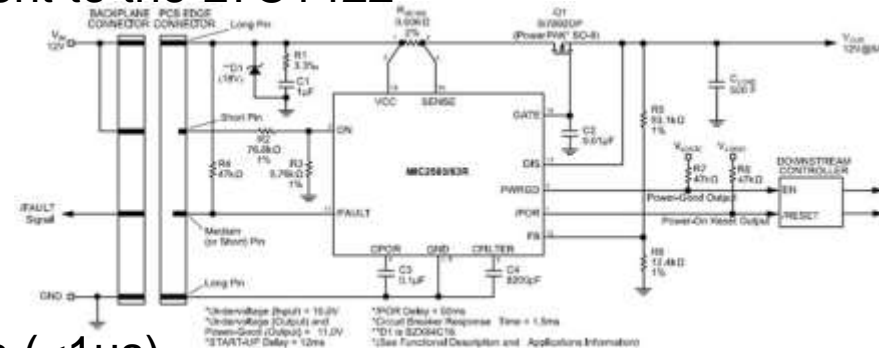




MIC2582/3/3R

Single Channel Hot Swap Controllers

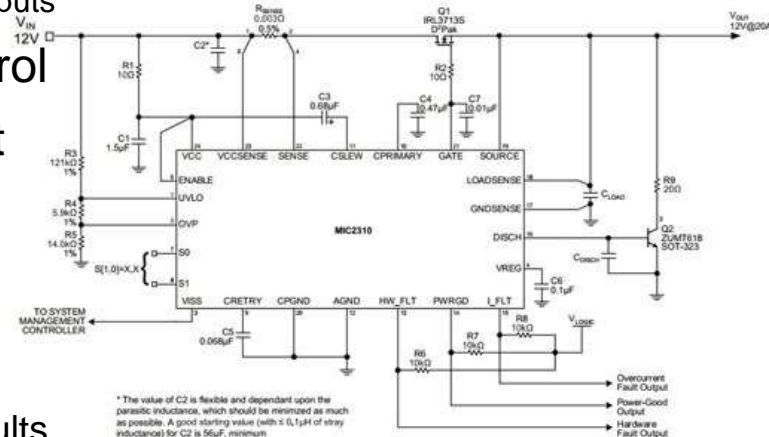
- ◆ MIC2582: Pin-for-pin functional equivalent to the LTC1422
- ◆ 2.3V to 13.2V supply voltage operation
- ◆ Surge voltage protection up to 20V
- ◆ Programmable inrush current limiting
- ◆ Electronic circuit breaker
- ◆ Fast response to short-circuit conditions ($<1\mu\text{s}$)
- ◆ Programmable output undervoltage detection
- ◆ Undervoltage Lockout (UVLO) protection
- ◆ Auto-restart function (MIC2583R)
- ◆ Power-on-Reset status output
- ◆ Power good (PG) status output (MIC2583 and MIC2583R)
- ◆ /FAULT status output (MIC2583 and MIC2583R)
- ◆ Current regulation limits inrush current regardless of load capacitance



MIC2310

Single-FET, Constant Power-Limit Hot Swap Controller

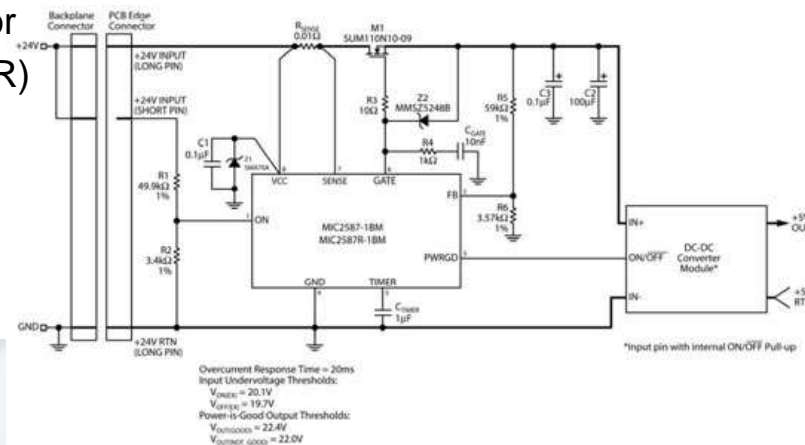
- ◆ Provides safe PCB insertion and removal from live +12V backplanes
- ◆ Patent-pending, adaptive circuit breaker threshold control
 - Maintains constant power product at output
 - Power-limit product (VA) is externally programmable for various power applications
- ◆ Dual-level, dual-speed overcurrent detection/protection
 - Programmable primary detector response time
 - Fast ($<1\mu\text{s}$) secondary detector response time to short circuit conditions
 - User-programmable threshold settings via (2) digital inputs
 - User-programmable threshold settings via (2) digital inputs
- ◆ Programmable inrush current slew-rate control
- ◆ Electronic circuit breaker functions after fault
 - Latch off
 - Automatic retry
- ◆ Fault reporting:
 - Open-drain 'Power-is-Good' output
 - Open-drain 'I_FLT' output signaling for all current faults
 - Shorted R_{SENSE} and Damaged MOSFET detection (D-G and D-S shorts)



MIC2587

Single-Channel, Positive High-Voltage Hot Swap Controller

- ◆ MIC2587: Pin-for-pin functional equivalent to the LT1641
- ◆ Fast responding circuit breaker ($< 2\mu\text{s}$) to short circuit loads
- ◆ Operates from +10V to +80V with 100V ABS MAX operation
- ◆ Fault Reporting: Open-drain "Power-is-Good" output for enabling DC/DC converter(s)
 - Active-HIGH: MIC2587-1/MIC2587R-1
 - Active-LOW: MIC2587-2/MIC2587R-2
- ◆ Industrial temperature specifications at $V_{CC} = +24\text{V}$ and $V_{CC} = +48\text{V}$
- ◆ Active current regulation minimizes inrush current
- ◆ Electronic circuit breaker for overcurrent fault protection
 - Output latch off (MIC2587) or
 - Output auto-retry (MIC2587R)

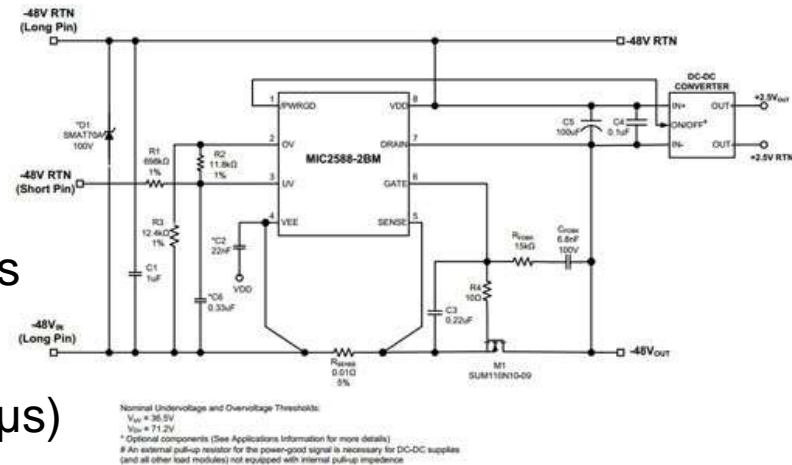




MIC2588/94

Single-Channel, Negative High-Voltage Hot Swap Power Controllers

- ◆ MIC2588: Pin-for-pin functional equivalent to the LT1640/LT1640A/LT4250
- ◆ Provides safe insertion and removal from live -48V (nominal) backplanes
- ◆ Operates from -19V to -80V
- ◆ Electronic circuit breaker function
- ◆ Built-in 400 μ s "nuisance-trip" delay (t_{FLT})
- ◆ Regulated maximum output current into faults
- ◆ Programmable inrush current limiting
- ◆ Fast response to short circuit conditions ($< 1\mu$ s)
- ◆ Programmable undervoltage and overvoltage lockouts (MIC2588-xBM)
- ◆ Programmable UVLO hysteresis (MIC2594-xBM)
- ◆ Fault reporting: Active-HIGH (-1BM) and Active-LOW (-2BM) Power-Good output signal

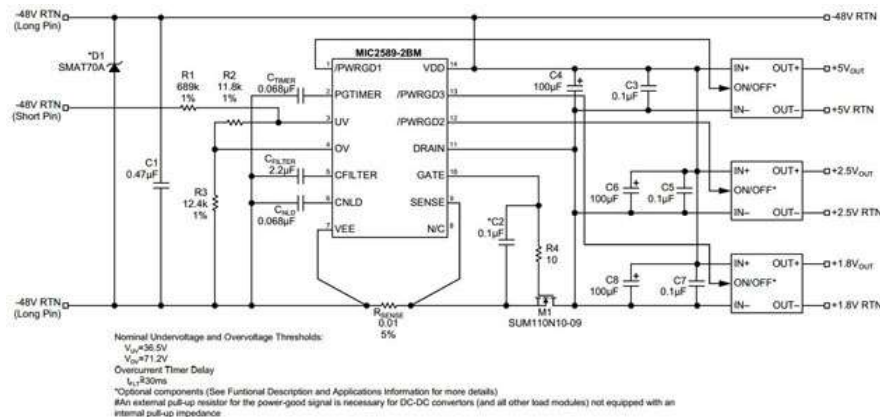


MIC2589/95



Single-Channel, Negative High-Voltage Hot Swap Power Controller/Sequencer

- ◆ Operates from -19V to -80V
- ◆ Electronic circuit breaker function:
 - Output latch OFF (MIC2589/MIC2595)
 - Output auto-retry (MIC2589R/MIC2595R)
- ◆ Active current regulation to control inrush currents
- ◆ Programmable UVLO hysteresis (MIC2595/MIC2595R)
- ◆ Provides safe insertion and removal from live -48V (nominal) backplanes
- ◆ User-programmable overcurrent detector response time
- ◆ Fast responding circuit breaker ($<1\mu\text{s}$) to short circuit conditions
- ◆ Programmable undervoltage and overvoltage lockouts (MIC2589/MIC2589R)
- ◆ Staggered 'Power-Good' output signals provide load sequencing
 - Active-HIGH (-1)
 - Active-LOW (-2)

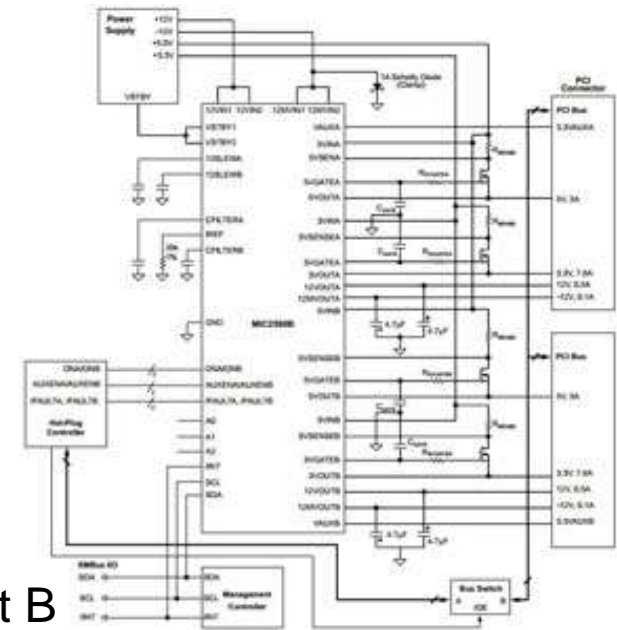




MIC2590B

Dual-Slot PCI Hot Plug Controller

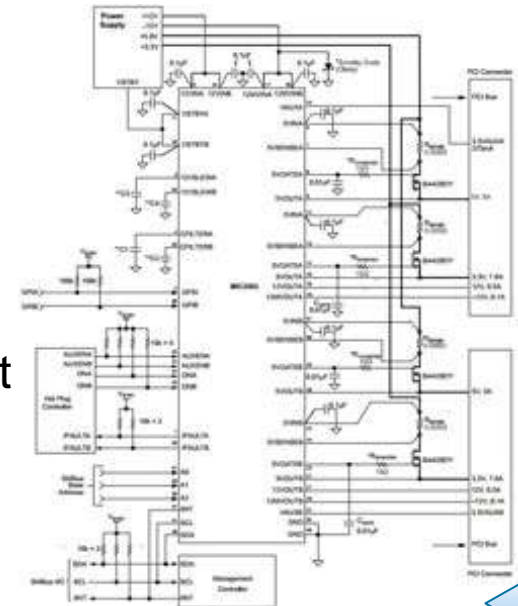
- ◆ Supports two independent PCI 2.2 slots
- ◆ SMBus interface for slot power control and status
- ◆ Programmable inrush current-limiting
- ◆ Active current regulation controls inrush current
- ◆ Electronic circuit breaker
- ◆ Thermal isolation between circuitry for slot A and slot B
- ◆ +5V, +3.3V, +12V, -12V, +3.3V_{AUX} supplies supported per PCI specification 2.2
- ◆ Dual level fault detection for quick fault response without nuisance tripping



MIC2593

Dual-Slot PCI Hot Plug Controller

- ◆ Supports two completely independent PCI slots:
 - Compliant to PCI v2.3 and PCI-X 1.0b power control requirements
 - Provides all major power control functions for two independent PCI-X 2.0 slots
- ◆ Five voltage supplies supported: +12V, -12V, +5V, +3.3V, and +3.3V_{AUX}
 - Integrated gate driver circuits, current sense, and power MOSFETs for 3.3V_{AUX}, +12V, and -12V
 - High-side +5V and +3.3V gate driver circuits for external N-Channel MOSFETs
- ◆ Slot power control with "Power-is-Good" and Fault status reporting
 - Via software over an SMBus interface or
 - Via dedicated hardware input/output lines: Hot Plug Interface (HPI)
- ◆ Complete thermal isolation between circuitry for Slot A and Slot B
- ◆ One General Purpose Input (GPI) pin per slot for mechanical switch or plug-in card retention/removal input

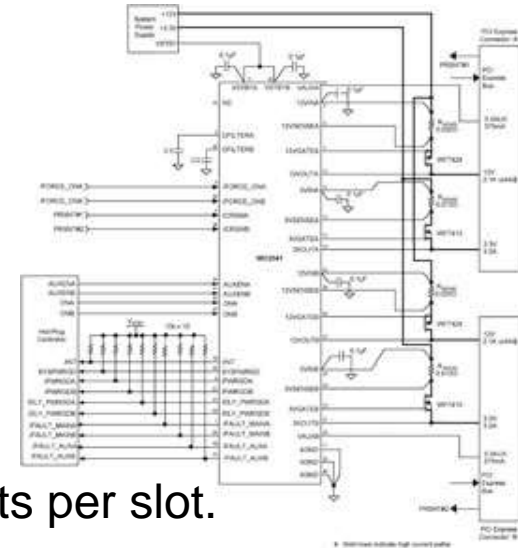




MIC2341

Dual-Slot PCI Express Hot-Plug Controller

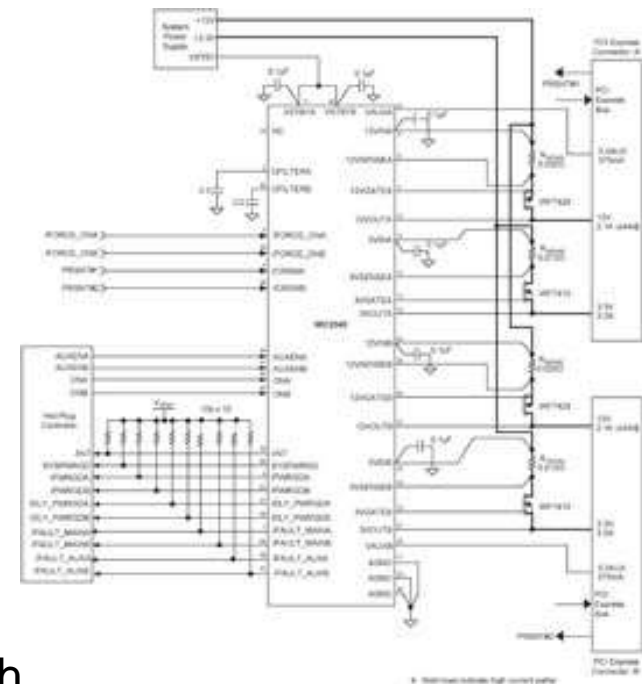
- ◆ Supports two independent PCI Express slots
- ◆ 12V, 3.3V, and 3.3V_{AUX} supplies supported per PCI Express Specification v1.0a, v.2.0
- ◆ Integrated Power MOSFETS for 3.3V_{AUX} rails
- ◆ Standby Operation for Wake-on-LAN applications with low backfeed on Main +12V and +3.3V rails
- ◆ Electronic circuit breakers for each supply per slot
 - Programmable gate voltage slew-rate control
 - Active current regulation controls inrush current
- ◆ User-programmable Primary Overcurrent Detector
- ◆ Global Systems Power-is-Good Output
- ◆ Both slots thermally isolated
- ◆ Internally Debounced Plug-in Card Retention Switch Inputs per slot.



MIC2342

Dual-Slot PCI Express® Hot-Plug Controller

- ◆ Supports two independent PCI Express slots
- ◆ MAIN & AUX outputs are inter-dependent during AUX overcurrent conditions
- ◆ 12V, 3.3V, and 3.3V_{AUX} supplies supported per PCI Express Specification v1.0a, v.2.0
- ◆ Integrated Power MOSFETS for 3.3V_{AUX} rails
- ◆ Electronic circuit breakers for each supply per slot
 - Programmable gate voltage slew-rate control
 - Active current regulation controls inrush current
- ◆ User-programmable Primary Overcurrent Detector
- ◆ /PWRGD and Delayed /PWRGD (164 ms) Signal Outputs per slot
- ◆ Separate /FAULT output signals for MAIN and AUX rails for each slot
- ◆ Internally Debounced Plug-in Card Retention Switch Inputs per slot.

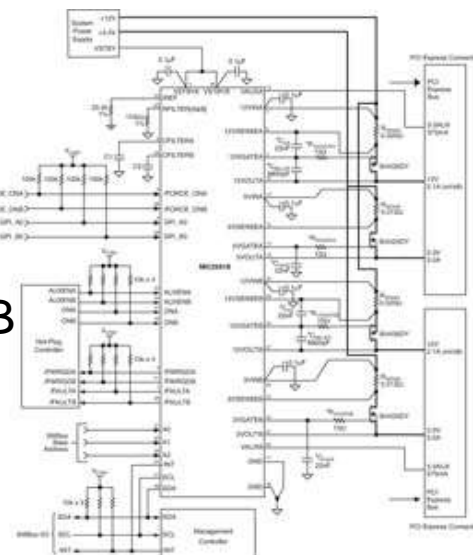




MIC2591B

Dual-Slot PCI Express Hot-Plug Controller

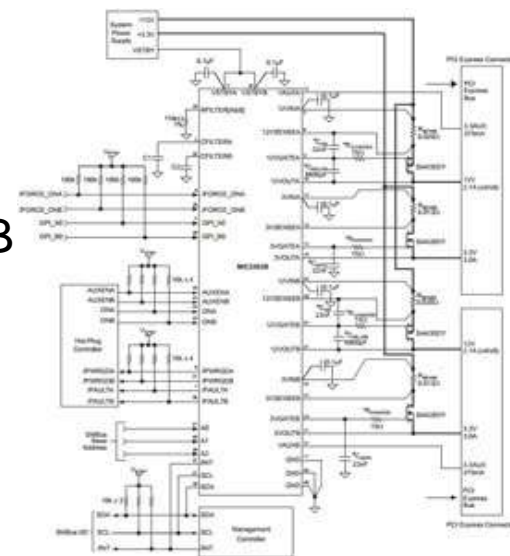
- ◆ Voltage-tolerant I/O for compatibility with SMBus 2.0 systems
- ◆ 12V, 3.3V, and 3.3V_{AUX} supplies supported per PCI Express Specification v1.0a
 - Integrated power MOSFETs for 3.3V_{AUX} rails
 - Standby operation for Wake-on-LAN applications with low backfeed on Main +12V and +3.3V rails.
- ◆ On-chip circuitry for data collection of each rail output voltage and output current for both slots
 - Integral analog multiplexer and 8-bit $\Delta\Sigma$ ADC
 - Compliant to the Intelligent Platform Management Interface (IPMI) Specification v1.0
 - Conversion results available via an SMBus interface
- ◆ Programmable inrush current limiting
- ◆ Active current regulation controls inrush current
- ◆ Electronic circuit breaker for each supply to each slot
- ◆ Thermal isolation between circuitry for Slot A and Slot B



MIC2592B

Dual-Slot PCI Express Hot-Plug Controller

- ◆ Supports two independent PCI Express slots
- ◆ SMBus interface for slot power control and status
- ◆ Voltage-tolerant I/O for compatibility with SMBus 2.0 systems
- ◆ 12V, 3.3V, and 3.3V_{AUX} supplies supported per PCI Express Specification v1.0a
 - Integrated power MOSFETs for 3.3V_{AUX} rails
 - Standby operation for Wake-on-LAN applications with low backfeed on Main +12V and +3.3V rails.
- ◆ Programmable inrush current limiting
- ◆ Active current regulation controls inrush current
- ◆ Electronic circuit breaker for each supply to each slot
- ◆ Thermal isolation between circuitry for Slot A and Slot B

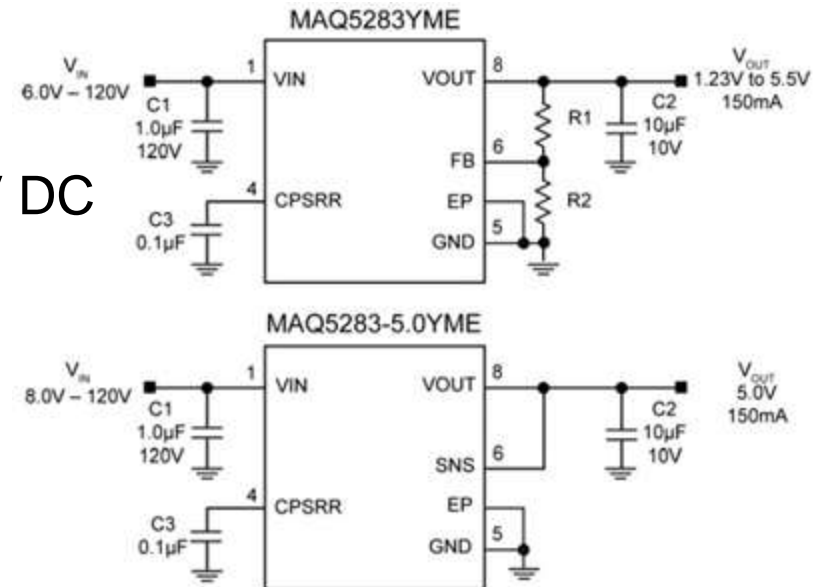


MAQ5283

120V_{IN}, 150mA, Ultra-Low I_Q, High-PSRR Linear Regulator

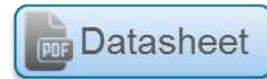


- ◆ AEC-Q100 qualified
- ◆ Wide input voltage range: 6V to 120V DC
- ◆ Ultra-low quiescent current: 8μA
- ◆ 150mA guaranteed output current
- ◆ Adjustable output from 1.23V to 5.5V
- ◆ Stable with ceramic capacitors
- ◆ Ultra-high PSRR (75dB at 10kHz)
- ◆ Ultra-high line rejection (load dump)
- ◆ High output accuracy: ±3% initial accuracy
- ◆ Thermal shutdown and current limit protection
- ◆ Thermally efficient, 8-pin ePad SOIC package

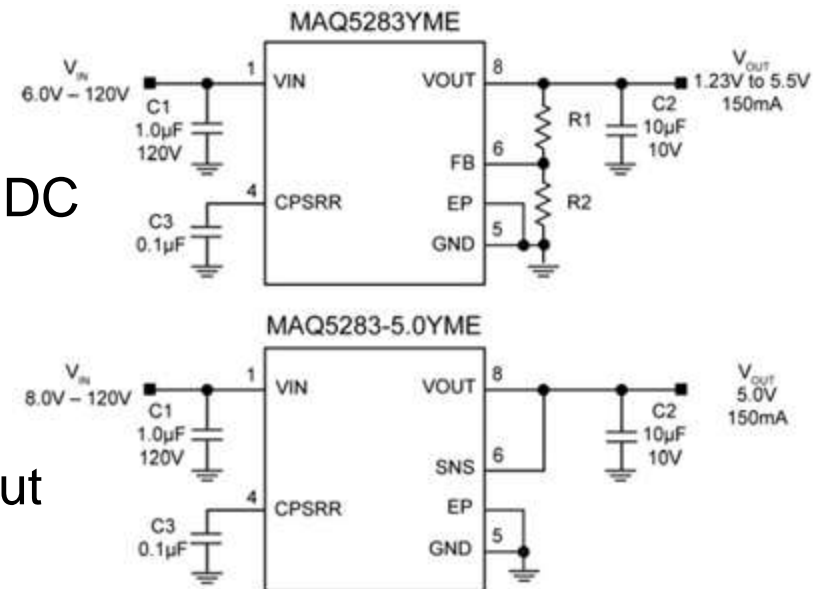


MAQ5282

120V_{IN}, 50mA, Ultra-Low I_Q, High-PSRR Linear Regulator



- ◆ AEC-Q100 qualified
- ◆ Wide input voltage range: 6V to 120V DC
- ◆ Ultra-low quiescent current: 6μA
- ◆ 50mA guaranteed output current
- ◆ Adjustable output from 1.27V to 5.5V
- ◆ Withstands up to +120V DC at the input
- ◆ Stable with ceramic output capacitors
- ◆ Ultra-high PSRR (80dB at 10kHz)
- ◆ Ultra-high line rejection (load dump)
- ◆ High output accuracy: ±3% initial accuracy
- ◆ Thermal shutdown and current limit protection
- ◆ Thermally efficient 8-pin ePad MSOP package

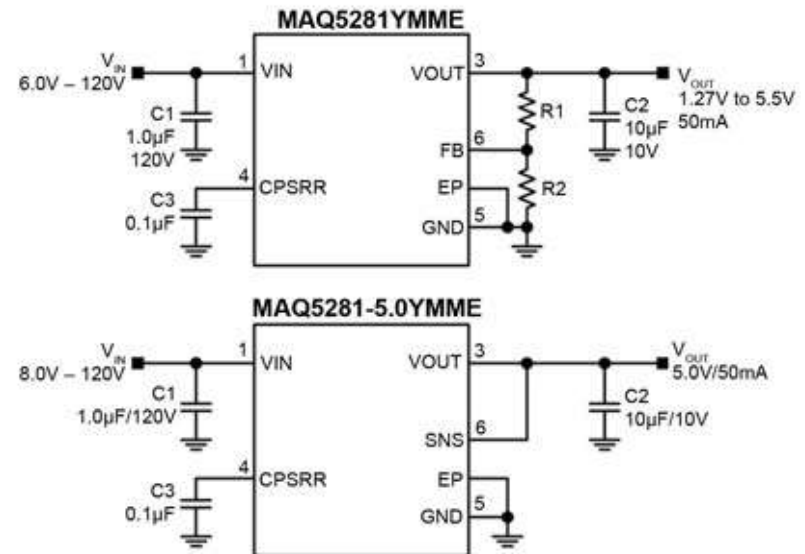




MAQ5281

120VIN, 25mA, Ultra-Low IQ, High-PSRR Linear Regulator

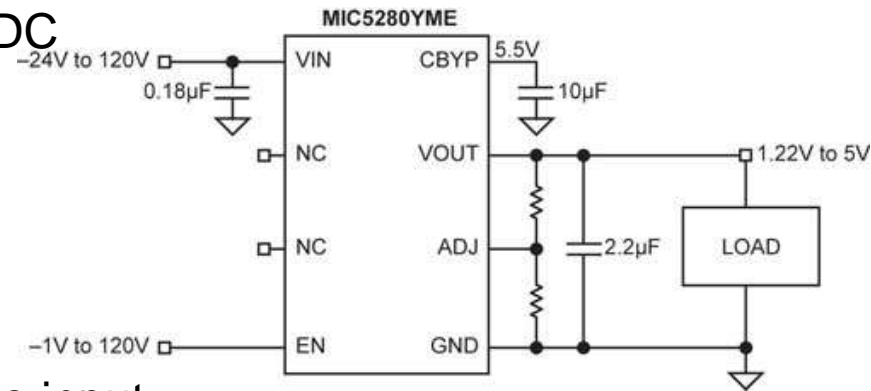
- ◆ Wide input voltage range: 6V to 120V DC
- ◆ Ultra-low quiescent current: 6 μ A
- ◆ 25mA guaranteed output current
- ◆ Adjustable output from 1.27V to 5.5V
- ◆ Withstands up to +120V DC at the input
- ◆ Stable with ceramic output capacitors
- ◆ Ultra-high PSRR <90dB
- ◆ Ultra-high line rejection (load dump)
- ◆ High output accuracy:
 - $\pm 3\%$ initial accuracy
- ◆ Thermal shutdown and current limit protection
- ◆ Thermally efficient 8-pin ePad MSOP package



MAQ5280

25mA, 120V, Low IQ, High-PSRR LDO

- ◆ Wide input voltage range: 4.5V to 120V DC
- ◆ Very low quiescent current: 31 μ A typical
- ◆ 25mA guaranteed output current
- ◆ Adjustable output from 1.215V to 5V
- ◆ DC voltage protection down to -24V
- ◆ Ability to withstand up to +120V DC at the input
- ◆ Stable with ceramic output capacitors
- ◆ Ultra high PSRR >80dB for RF applications
- ◆ High output accuracy
 - $\pm 2\%$ initial accuracy
 - $\pm 3\%$ over temperature (-40°C to +125°C)
- ◆ Thermal shutdown and current limit protection
- ◆ Thermally efficient 8-pin ePad SOIC package
- ◆ AEC-Q100 qualified

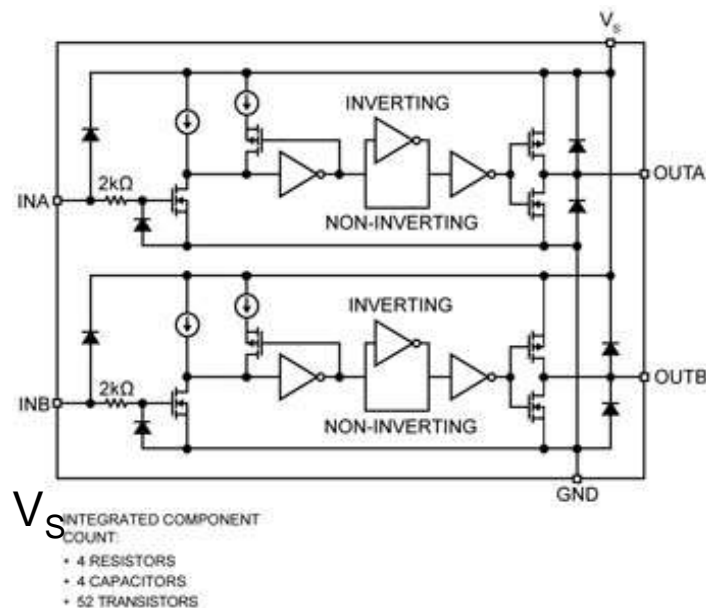


MAQ4123/4/5



Automotive AEC-Q100 Qualified Dual 3A Peak Low-Side MOSFET Driver Bipolar/CMOS/DMOS Process

- ◆ Automotive AEC-Q100 qualified
- ◆ High $\pm 3\text{A}$ peak output current
- ◆ Wide 4.5V to 20V supply voltage range
- ◆ Low 2.3Ω output resistance
- ◆ Logic input withstands swing to -5V
- ◆ Output voltage swings within 25mV of ground or V_S
- ◆ Low supply current
 - 2.0mA with logic 1 input (maximum over temperature)
 - 300 μA with logic 0 input (maximum over temperature)
- ◆ '426/7/8-, '1426/7/8-, '4426/7/8 industry standard pin out
- ◆ Fast 10ns rise/fall times with 1800pF capacitive load
- ◆ TTL/CMOS logic inputs independent of supply voltage
- ◆ Inverting, non-inverting, and differential configurations
- ◆ -40°C to +125°C temperature range





Revisions

Revision	Date	Name	Description
1.0	10/14/14	Tony Tu	Initial Release