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MAX17614 Evaluation Kit

Evaluates: MAX17614 in Ideal Diode/Power Source Selector Applications

General Description

The MAX17614 evaluation kit (EV kit) is a fully assembled and tested circuit board that demonstrates the MAX17614 ideal diode/power source selector in a 20-pin TQFN-EP package. The EV kit allows two power sources to be connected as inputs. The load gets power from the higher voltage power source for ideal diode applications. For power source selector applications, the load gets power from either of the two power sources by driving respective EN pins. The EV kit configurations allow independent settings for the two instances to demonstrate adjustable overvoltage, undervoltage, reverse current blocking, three current-limit types (autoretry, continuous, and latch-off) with different programmable current-limit thresholds (from 0.15A to 3A). For more details about the IC benefits and features, refer to the MAX17614 IC data sheet.

Features

- 4.5V to 40V Operating Input Voltage Range (Remove the TVS Diodes D101, D201, and Open Jumpers JU101, JU201 to Extend the Operating Range up to 60V)
- 40V TVS Diodes (D101 and D201) across the Input Terminals
- Schottky Diode (D103) across the Output Terminals
- Evaluates Undervoltage Lockout (UVLO1, UVLO2), Overvoltage Lockout (OVLO1, OVLO2), Three Current-Limit Types, and Current-Limit Thresholds
- UVLO Programmed to 4.5V for Both Input Voltages
- OVLO Programmed to 40.2V for Both Input Voltages
- Internally Pulled-Up Active High Enable Inputs
- Jumper-Configurable Current Limits (Selected as 0.3A by Default)
- Jumper-Configurable (JU102, JU202) Current-Limit Types (Selected as Autoretry by Default)
- Programmable Startup Blanking Times (C103, C203)
- Fault Indication Signals (UVOV1, UVOV2, $\overline{\text{FLAG1}}$, $\overline{\text{FLAG2}}$)
- Proven PCB Layout
- Fully Assembled and Tested

***Ordering Information* appears at end of data sheet.**

319-101000; Rev 0; 6/23

Quick Start

Configuration Diagram

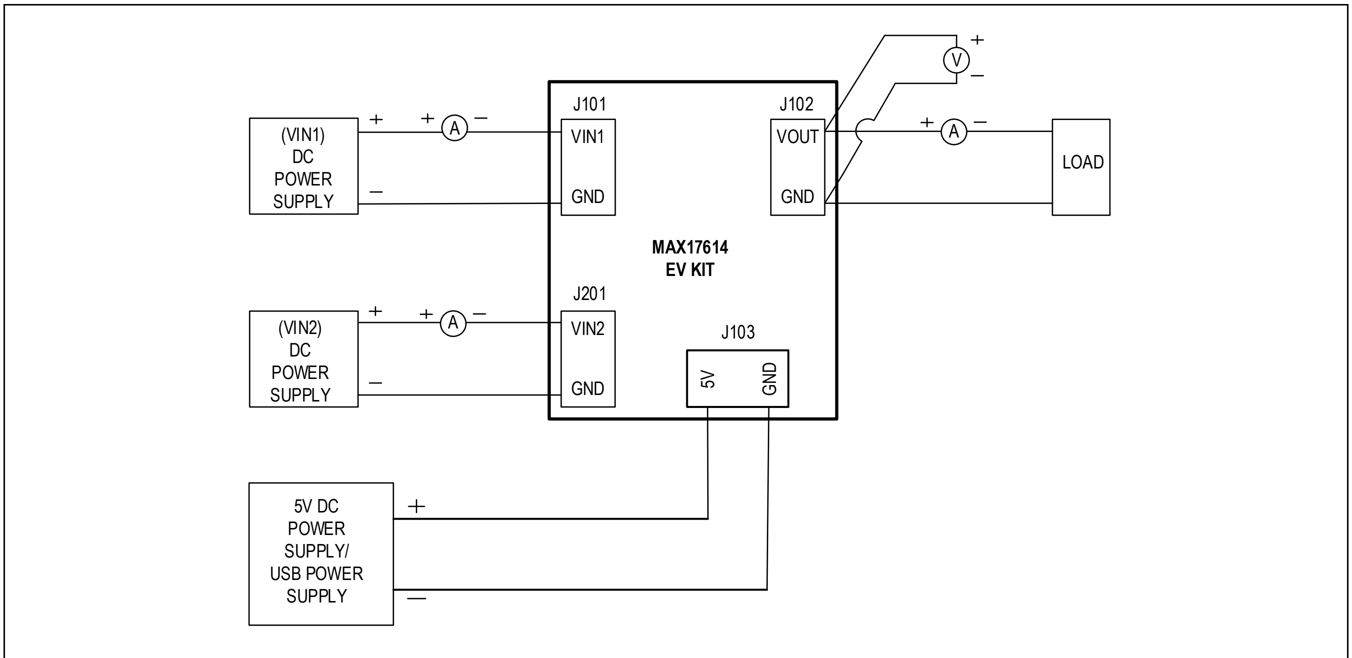


Figure 1. MAX17614 EV Kit Setup Diagram

Required Equipment

- MAX17614 EV kit
- Two 60V, 4A DC power supplies
- Multimeters
- Adjustable load (0A to 3.5A)
- USB power source or 5V DC power supply

Equipment Setup and Test Procedure

A typical bench setup for MAX17614 EV Kit is shown in *Figure 1.*

The EV kit is fully assembled and tested. Follow the steps to verify board operation.

Caution: Do not turn on power supply until all connections are completed.

1. Connect the USB cable to J103 from a USB power source or connect a 5V DC power supply to 5V test point.
2. Verify that LED1 glows.
3. Verify that the JU105 and JU205 jumpers are installed.
4. Verify that all jumpers are in their default positions.
5. Set the first 60V DC power supply (VIN1) to 5V and connect to VIN1 (J101). Verify that VOUT (J102) is 5V.
6. Connect a 200Ω resistive load across VOUT and GND terminals.

Follow the steps (7-10) to test OVLO operation.

7. Gradually increase VIN1 and monitor VOUT voltage (J102). Verify that VOUT voltage (J102) increases as VIN1 increases and goes down when the input voltage reaches approximately 40.2V. Also check that UVOV1 status changes from 0V to 5V.

8. Gradually decrease VIN1 and verify that VOUT voltage (J102) is restored back when the input voltage reaches approximately 38.8V. Also check that UVOV1 status changes from 5V to 0V.
9. Reduce VIN1 to zero volts and verify that the output voltage goes down to zero volts.
10. Set the second 60V DC power supply (VIN2) to 5V and connect to VIN2 (J201). Verify that VOUT (J102) is 5V. Repeat the steps 7-8 and verify the device U2 performance for OVLO operation.

Follow the steps (11-14) to test current-limit operation.

11. Set VIN1 to 24V and connect the adjustable load between VOUT and GND terminals and a multimeter in series to measure the current. Gradually increase the load current and verify that VOUT (J102) goes down when the load current increases above 0.3A. Also check that $\overline{\text{FLAG1}}$ status changes from 5V to 0V.
12. Jumper JU103 can be configured to change the current limit as shown in *Table 3*. Verify various current-limit settings by repeating Step 11.
13. Reduce VIN1 to zero volts and verify that the output voltage goes down to zero volts.
14. Set the second 60V DC power supply (VIN2) to 24V and connect to IN2 (J201). Verify that VOUT (J102) is 24V. Repeat the steps 11-12 and verify the device U2 performance for different current-limit settings.

Follow the steps (15-20) to test ideal diode application.

15. Configure the jumpers JU103 and JU203 to current-limit setting = 3A as shown in *Table 3* and connect 2.7A load between VOUT and GND terminals.
16. Set VIN2 to 20V and connect to VIN2 (J201). Verify that VOUT (J102) is 20V.
17. Set VIN1 to 24V and connect to VIN1 (J101) to observe seamless switchover of VOUT voltage (J102) from VIN2 = 20V to VIN1 = 24V.
18. Observe that device U1 enters forward conduction state by verifying $\overline{\text{FLAG1}}$ status change from 0V to 5V and device U2 enters reverse blocking state by verifying $\overline{\text{FLAG2}}$ status change from 5V to 0V.
19. Set the first DC power supply (VIN1) to 18V and observe seamless switchover of VOUT voltage (J102) from VIN1 to 20V.
20. Observe that device U1 enters reverse blocking state by verifying $\overline{\text{FLAG1}}$ status change from 5V to 0V and device U2 enters forward conduction state by verifying $\overline{\text{FLAG2}}$ status change from 0V to 5V.

Follow the steps (21-26) to test power source selector application.

21. Configure the jumpers JU103 and JU203 to current-limit setting = 3A as shown in *Table 3* and connect 2.7A load between VOUT and GND terminals.
22. Set VIN1 to 24V and connect to VIN1 (J101). Verify that VOUT (J102) is 24V. Verify that the load is supported from VIN1.
23. Set VIN2 to 20V and connect to VIN2 (J201). Verify that VOUT (J102) is still 24V and the load is supported from VIN1.
24. Set JU104, JU204 open and drive EN1 low with a waveform generator. Verify that VOUT (J102) switchover to VIN2 (= 20V) and IIN1 is 0A, the load is supported from VIN2.
25. Drive EN1 high with a waveform generator. Verify that VOUT (J102) switchover to VIN1 (= 24V) and IIN2 = 0A, the load is supported from VIN1.
26. To select/deselect the second power supply (VIN2), drive EN2 high and low with a waveform generator. Repeat steps 21-25 to demonstrate power source selector application using EN2.

Detailed Description of Hardware

The conventional redundant power architecture solution to support a critical load is to OR two power sources using Schottky diodes. In this scheme, if one of the power sources were to fail, switchover to the other source occurs smoothly without interruption of power to the load. However, the Schottky-based solution suffers from power loss and higher temperature rise while also requiring a large number of discrete components for implementation of other important protection features such as current limit, UVLO, and OVLO.

The MAX17614 device with internal back-to-back nFETs provides a highly integrated, efficient, and reliable ideal diode solution for fast and seamless switchover response while delivering significant reduction in component count and design complexity. The MAX17614 EV kit circuit can be configured to evaluate the MAX17614 performance for ideal diode applications and power source selector applications during selection of input supply voltages by driving respective EN signals (EN1 and EN2).

The MAX17614 EV kit circuit can be configured to evaluate user-defined UVLO and OVLO thresholds using respective resistor-dividers. The current-limit threshold is determined by external resistors connected to the SETI pin and is configurable through jumpers JU103 and JU203. Using jumpers JU102 and JU202, the EV kit circuit can be configured to evaluate autoretry, continuous, and latch-off current-limit modes. LED1 on the EV kit indicates availability of logic power for fault indication signals (UVOV1, UVOV2, $\overline{\text{FLAG1}}$, and $\overline{\text{FLAG2}}$). The MAX17614 offers a programmable startup blanking time that enables charging of large capacitances on the output during startup and when recovering from a fault condition. Connecting a capacitor (C103, C203) from the TSTART pin (TSTART1 and TSTART2) to GND programs the startup blanking time. The EV kit provides on-board output capacitors (C107, C108) to enable a demonstration of the MAX17614 protection features while charging large capacitors. The capacitors (C107, C108) can be disconnected using Jumper JU106. For more details about the IC benefits and features, refer to the MAX17614 IC data sheet.

Input Power Supply

The EV kit is powered by two user-supplied 4.5V to 60V power supplies connected between input connector (J101 and J201) terminals. The EV kit features 40V rating TVS diodes at input terminals to support high input surge applications. To extend the operating input voltage up to 60V, remove TVS diode and adjust OVLO resistor configuration accordingly with reference to *Undervoltage Lockout/Overvoltage Lockout (UVLO/OVLO) Programming* section.

Ideal Diode Application

The EV kit features jumpers (JU105 and JU205) to connect the OUT pins of devices U1 and U2 to VOUT (J102) (see *Table 1*). For more details about the MAX17614 timing parameters for ideal diode applications, refer to the MAX17614 IC data sheet.

Table 1. Output Jumper (JU105, JU205) Settings

JU105 SHUNT POSITION	JU205 SHUNT POSITION	DESCRIPTION
Installed*	Installed*	Ideal diode application: Both OUT1 and OUT2 are connected to VOUT (J102)
Installed	Not Installed	Only OUT1 is connected to VOUT (J102)
Not Installed	Installed	Only OUT2 is connected to VOUT (J102)
Not Installed	Not Installed	Both OUT1 and OUT2 are not connected to VOUT (J102)

**Default Position*

Power Source Selector

The EN pin of the MAX17614 allows a system microcontroller to turn ON/OFF power to the load, thus enabling the system to select a power source based on operating conditions. Configure shunt position not installed for jumpers JU104 and JU204 and drive the EN pins of devices U1 and U2 high or low for selection of input supply voltages.

Choose the jumpers (JU104 and JU204) settings to enable or disable operation of the MAX17614 (see *Table 2*).

Table 2. EN (JU104, JU204) Settings

SHUNT POSITION	DESCRIPTION
Not Installed*	EN1/EN2 pin unconnected
1-2	EN1/EN2 is connected to GND

**Default Position*

Setting the Current-Limit Threshold (SETI)

The EV kit features jumpers (JU103 and JU203) to select the current-limit threshold. Install jumpers as shown in *Table 3* to change the current-limit threshold. The current limit can be programmed between 0.15A to 3A. The current limit (I_{LIM}) is programmed by the resistor R_{SETI} connected at the SETI pin. Use the following equation to calculate the current-limit setting resistor:

$$R_{SETI} = \frac{4500}{I_{LIM}}$$

where I_{LIM} is the desired current limit in mA and R_{SETI} is in kΩ.

Do not use R_{SETI} lower than 1.5kΩ.

Table 3. Current-Limit Threshold Jumper (JU103, JU203) Settings

SHUNT POSITION	CURRENT-LIMIT THRESHOLD
1-2	Adjustable using the resistor pot (R107, R207)
3-4*	0.3A
5-6	1.5A
7-8	3A

**Default Position*

Current Monitoring

The MAX17614 features read out of the current flowing from IN-to-OUT. The current from IN-to-OUT is mirrored with a ratio of 3032 (C_{IRATIO}) and flows out through the SETI pin, into the external current-limit resistor. The voltage on the SETI pin provides information about IN current with the following relationship:

$$I_{IN-OUT} = \frac{3.032 \times V_{SETI}}{R_{SETI}}$$

where $I_{IN\text{-}OUT}$ is current from IN-to-OUT in A

V_{SETI} is SETI pin voltage in V

and R_{SETI} is in kΩ

Current-Limit Type Selection (CLMODE)

The EV kit features jumpers (JU102 and JU202) to select different current-limit type responses (see *Table 4*). For more details about each current-limit type, refer to the MAX17614 IC data sheet.

Table 4. Current-Limit Type Selection (JU102, JU202)

SHUNT POSITION	CURRENT-LIMIT TYPE
1-2	Latch-off
2-3	Continuous
Not Installed*	Autoretry

**Default Position*

Undervoltage Lockout/Overvoltage Lockout (UVLO/OVLO) Programming

The UVLO threshold for input voltage is set through the R101, R102 resistive divider for U1 and R201, R202 resistive divider for U2, respectively. Use the following equations to calculate the value of R102 and R202 to adjust falling input UVLO threshold. The recommended value of R101 and R201 is 2.2MΩ.

$$R102 = \frac{R101}{\left(\frac{V_{IN1\_UVF}}{V_{UVF}} - 1\right)}$$

$$R202 = \frac{R201}{\left(\frac{V_{IN2\_UVF}}{V_{UVF}} - 1\right)}$$

where V_{UVF} = 1.45V (typ)

V_{IN1_UVF} = Required falling input undervoltage threshold for U1

V_{IN2_UVF} = Required falling input undervoltage threshold for U2

The OVLO threshold for input voltage is set through the R103, R104 resistive divider for U1 and R203, R204 resistive divider for U2, respectively. Use the following equation to calculate the value of R104 and R204 to adjust rising input OVLO threshold. The recommended value of R103 and R203 is 450kΩ to 500kΩ.

$$R104 = \frac{R103}{\left(\frac{V_{IN1\_OVR}}{V_{OVR}} - 1\right)}$$

$$R204 = \frac{R203}{\left(\frac{V_{IN2\_OVR}}{V_{OVR}} - 1\right)}$$

where V_{OVR} = 1.5V (typ)

V_{IN1_OVR} = Required rising input overvoltage threshold for U1

V_{IN2_OVR} = Required rising input overvoltage threshold for U2

Startup Blanking Time (TSTART) Programming

Connecting a capacitor from the TSTART1/TSTART2 pin to GND programs the startup blanking time. In order to program $t_{TSTART1}$/$t_{TSTART2}$, the capacitor C103/C203 connected to the TSTART1/TSTART2 pin is charged with a constant current of 5µA (typ). When the voltage on the capacitor (C103/C203) reaches 1.5V, $t_{TSTART1}$/$t_{TSTART2}$ is considered expired and C103/C203 is discharged to ground.

$$C103 \geq \frac{t_{TSTART1}}{1.5} \times 5\mu$$

$$C203 \geq \frac{t_{TSTART2}}{1.5} \times 5\mu$$

For more details about startup requirements, refer to the MAX17614 IC data sheet.

Output Load Capacitor

Configure Jumper JU106 to connect output to 470µF capacitors (see *Table 5*).

Table 5. Output Load Capacitor (JU106) Settings

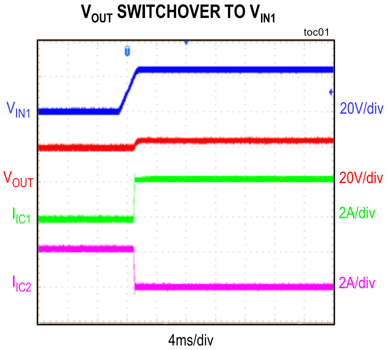
SHUNT POSITION	DESCRIPTION
Installed	C107 and C108 connected to OUT
Not Installed*	C107 and C108 not connected to OUT

**Default Position*

MAX17614 EV Kit Typical Operating Characteristics

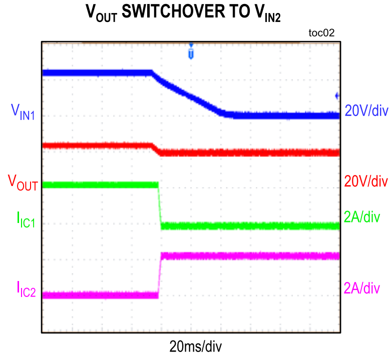
(C_{IN1} = C_{IN2} = 1µF, C_{OUT} = 4.7µF, V_{IN1} = 24V, V_{IN2} = 20V, V_{BUS} = 5V, I_{LIMIT1} = I_{LIMIT2} = 3A, CLMODE1 = CLMODE2 = Autoretry, V_{IN1_OVR} = V_{IN2_OVR} = 40.2V, T_A = +25°C, *unless* otherwise noted. I_{IC1}, I_{IC2} measured using JU105, JU205, respectively)

IDEAL DIODE APPLICATION, V_{OUT} SWITCHOVER TO V_{IN1}



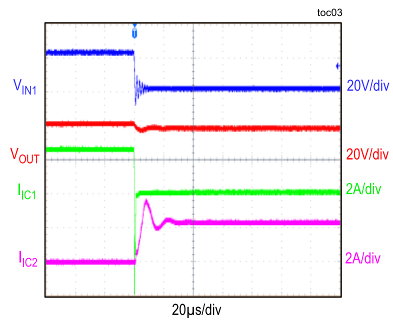
CONDITIONS: V_{IN1} = 0V to 24V, V_{IN2} = 20V, I_{OUT} = 2.1A

IDEAL DIODE APPLICATION, V_{OUT} SWITCHOVER TO V_{IN2}



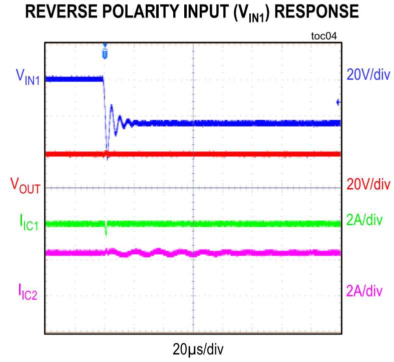
CONDITIONS: V_{IN1} = 24V to 0V, V_{IN2} = 20V, I_{OUT} = 2.1A

IDEAL DIODE APPLICATION, INPUT (V_{IN1}) SHORT-CIRCUIT RESPONSE



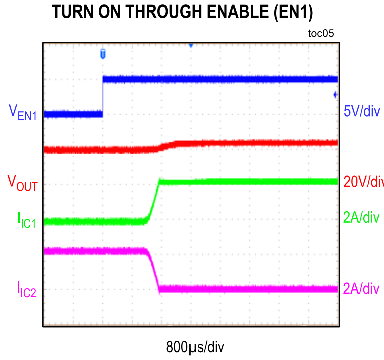
CONDITIONS: V_{IN1} = 24V to 0V (V_{IN1} IS SHORT-CIRCUITED TO GND) V_{IN2} = 20V, R_{OUT} = 9Ω

IDEAL DIODE APPLICATION, REVERSE POLARITY INPUT (V_{IN1}) RESPONSE



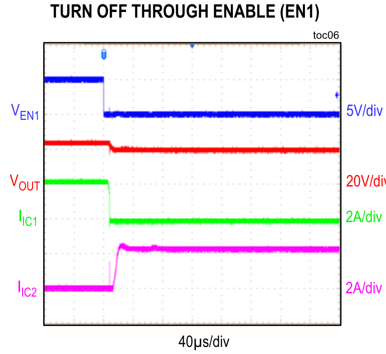
CONDITIONS: V_{IN1} = OPEN TO -24V, V_{IN2} = 20V, R_{OUT} = 9Ω

POWER SOURCE SELECTOR, TURN ON THROUGH ENABLE (EN1)



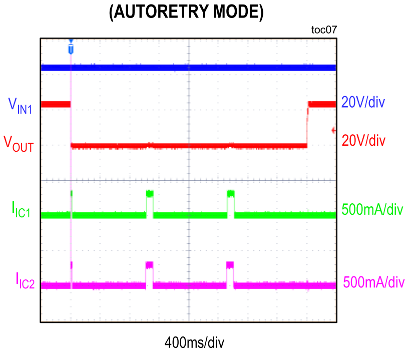
CONDITIONS: I_{OUT} = 2.1A

POWER SOURCE SELECTOR, TURN OFF THROUGH ENABLE (EN1)



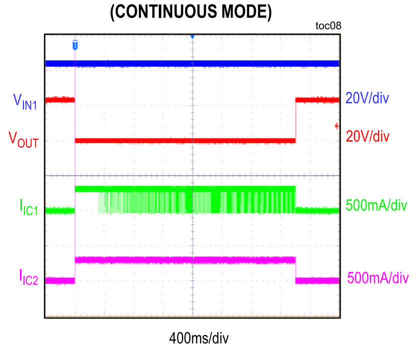
CONDITIONS: I_{OUT} = 2.1A

IDEAL DIODE APPLICATION, OVERCURRENT FAULT RESPONSE AND RECOVERY (AUTORETRY MODE)



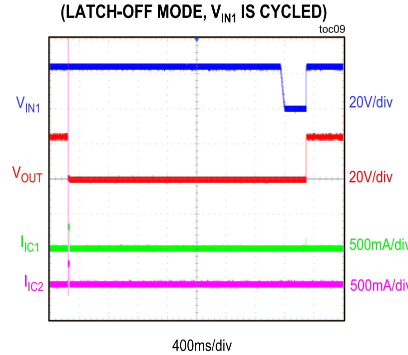
CONDITIONS:
I_{LIM1} = I_{LIM2} = 0.3A, R_{OUT} = OPEN TO 1Ω (FOR 3s DURATION)

IDEAL DIODE APPLICATION, OVERCURRENT FAULT RESPONSE AND RECOVERY (CONTINUOUS MODE)



CONDITIONS:
I_{LIM1} = I_{LIM2} = 0.3A, R_{OUT} = OPEN TO 1Ω (FOR 3s DURATION)

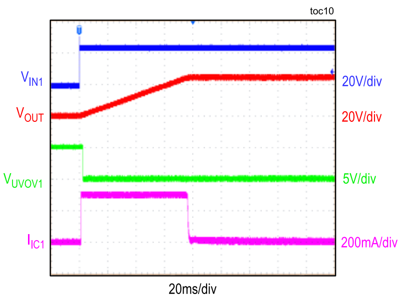
IDEAL DIODE APPLICATION, OVERCURRENT FAULT RESPONSE AND RECOVERY (LATCH-OFF MODE, V_{IN1} IS CYCLED)



CONDITIONS:
I_{LIM1} = I_{LIM2} = 0.3A, R_{OUT} = OPEN TO 1Ω (FOR 3s DURATION)

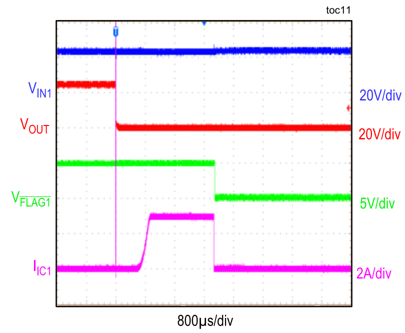
(C_{IN1} = C_{IN2} = 1µF, C_{OUT} = 4.7µF, V_{IN1} = 24V, V_{IN2} = 20V, V_{BUS} = 5V, I_{LIMIT1} = I_{LIMIT2} = 3A, CLMODE1 = CLMODE2 = Autoretry, V_{IN1_OVR} = V_{IN2_OVR} = 40.2V, T_A = +25°C, *unless* otherwise noted. I_{IC1}, I_{IC2} measured using JU105, JU205, respectively)

INPUT POWER-UP RESPONSE



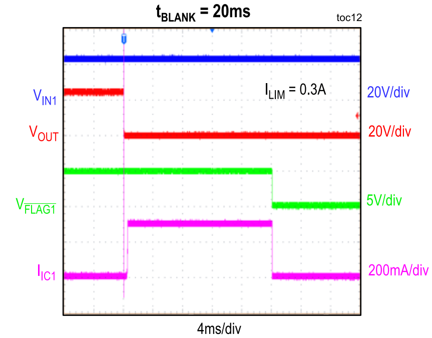
CONDITIONS: V_{IN2} = OPEN, I_{LIM1} = 0.3A, C_{OUT} = (2*470µF), R_{OUT} = OPEN

THERMAL SHUTDOWN DUE TO OUTPUT SHORT-CIRCUIT



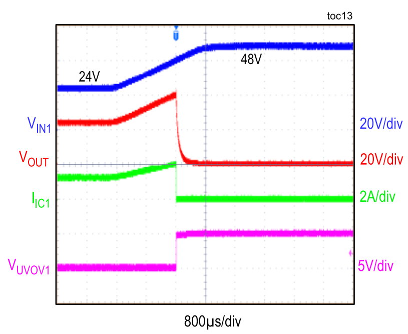
CONDITIONS: V_{IN2} = OPEN, I_{LIM1} = 3A, R_{OUT} = OPEN
CLMODE = OPEN OR CONNECTED TO 150kΩ TO GND

OUTPUT SHORT-CIRCUIT RESPONSE
t_{BLANK} = 20ms



CONDITIONS: V_{IN2} = OPEN, I_{LIM1} = 0.3A, R_{OUT} = OPEN
CLMODE = OPEN OR CONNECTED TO 150kΩ TO GND

INPUT OVERVOLTAGE FAULT RESPONSE



CONDITIONS: V_{IN1} = 24V to 48V, V_{IN2} = OPEN, R_{OUT} = 20Ω

Component Suppliers

SUPPLIER	WEBSITE
Murata Americas	www.murata.com
Vishay	www.vishay.com
Panasonic	www.panasonic.com
Taiyo Yuden	www.taiyoyuden.com
Diodes Incorporated	www.diodes.com
Bourns, Inc.	www.bourns.com

Note: *Indicate that you are using MAX17614 when contacting these component suppliers.*

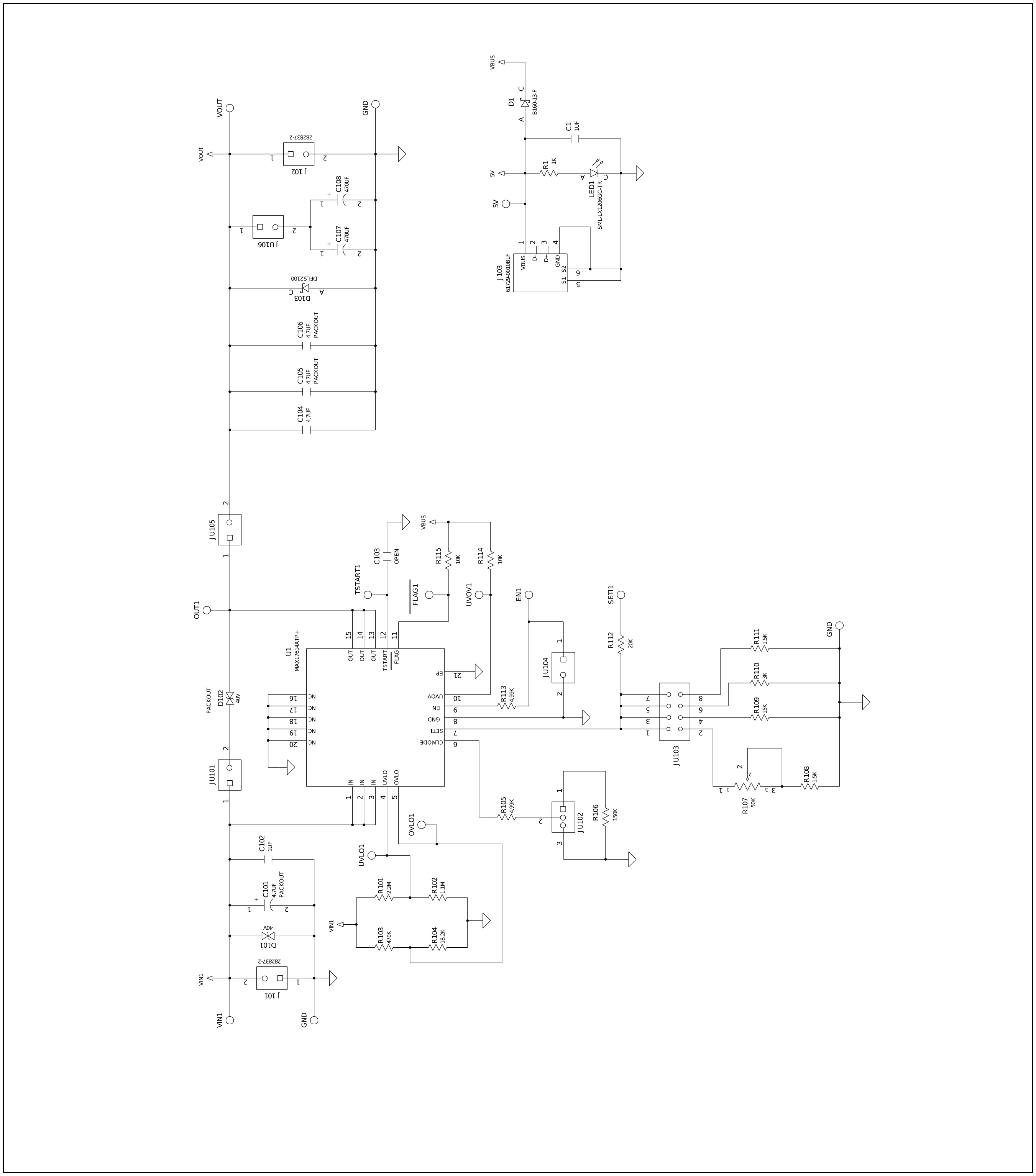
MAX17614 EV Kit Bill of Materials

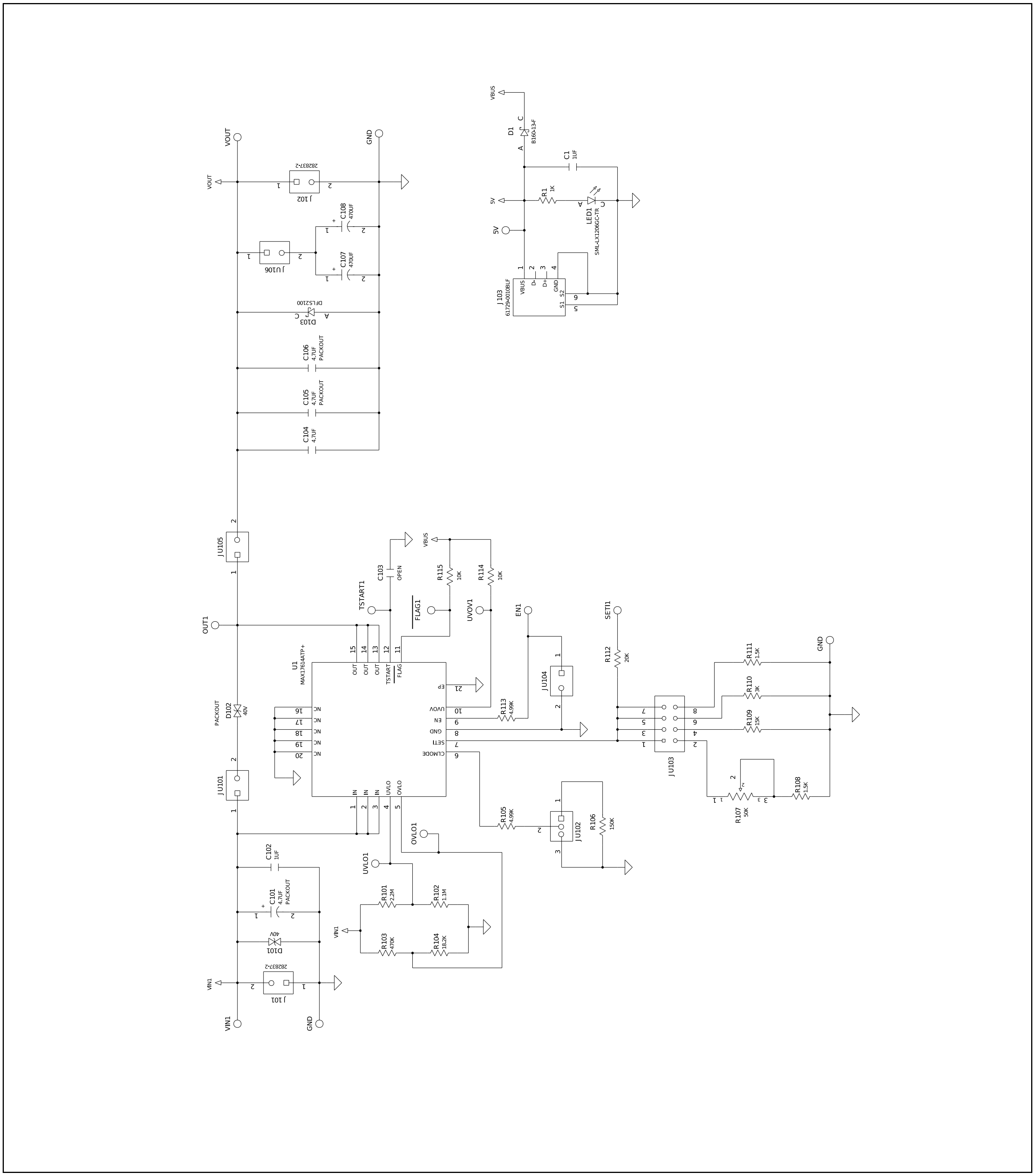
S.NO	PART REFERENCE	QTY	DESCRIPTION	MANUFACTURER PART NUMBER
1	C1	1	1µF 10% 25V X7R ceramic capacitor (0603)	TAIYO YUDEN TMK107B7105KA
2	C102, C202	2	1µF 10% 100V X7R ceramic capacitor (1206)	TAIYO YUDEN HMK316B7105KLH
3	C104	1	4.7µF 10% 100V X7R ceramic capacitor (1206)	MURATA GRM31CZ72A475KE11
4	C107, C108	2	470µF 20% 63V aluminum (8mm)	PANASONIC EEU-FR1J471
5	D1	1	Power Schottky Diode, 60V, 1A (SMA)	DIODES INCORPORATED B160-13-F
6	D101, D201	2	TVS Diode, 40V, 600W (SMB)	BOURNS SMBJ40CA
7	D103	1	Power Schottky Diode, 100V, 2A (POWERDI-123)	DIODES INCORPORATED DFLS2100
8	LED1	1	Green LED (1206)	LUMEX OPTOCOMPONENTS INC SML-LX1206GC-TR
9	R1	1	SMT Resistor 1kΩ 1% (0805) 0.125W	VISHAY DALE CRCW08051K00FK
10	R101, R201	2	SMT Resistor 2.2MΩ 1% (0603) 0.1W	VISHAY DALE CRCW06032M20FK
11	R102, R202	2	SMT Resistor 1.1MΩ 1% (0603) 0.1W	VISHAY CRCW06031M10FK
12	R103, R203	2	SMT Resistor 470kΩ 1% (0603) 0.1W	VISHAY DALE CRCW0603470KFK
13	R104, R204	2	SMT Resistor 18.2kΩ 1% (0603) 0.1W	PANASONIC ERJ-3EKF1822
14	R105, R113, R205, R213	4	SMT Resistor 4.99kΩ 1% (0402) 0.063W	VISHAY DALE CRCW04024K99FK
15	R106, R206	2	SMT Resistor 150kΩ 1% (0402) 0.063W	VISHAY DALE CRCW0402150KFK
16	R107, R207	2	Through-Hole Radial Trimmer Potentiometer 50kΩ 10% 0.5W	BOURNS 3296W-1-503LF
17	R108, R111, R208, R211	4	SMT Resistor 1.5kΩ 1% (0402) 0.063W	VISHAY DALE CRCW04021K50FK
18	R109, R209	2	SMT Resistor 15kΩ 1% (0402), 0.063W	VISHAY DALE CRCW040215K0FK
19	R110, R210	2	SMT Resistor 3kΩ 1% (0402) 0.063W	VISHAY DALE CRCW04023K00FK
20	R112, R212	2	SMT Resistor 20kΩ 1% (0402) 0.063W	VISHAY DALE CRCW040220K0FK
21	R114, R115, R214, R215	4	SMT Resistor 10kΩ 1% (0402) 0.063W	VISHAY DALE CRCW040210K0FK
22	U1, U2	2	4.5V to 60V, 3A, Ideal Diode/Power Path Selector with Current Limit, UV, OV Protection (20-pin TQFN-EP, 4mm x 4mm)	ADI MAX17614ATP+
23	5V	1	Red Test Point 0.040" (1.02mm) Hole Diameter	KEYSTONE 5000
24	EN1, EN2, UVLO1, UVLO2	4	White Test Point 0.063" (1.60mm) Hole Diameter	KEYSTONE 5012
25	$\overline{\text{FLAG1}}$, $\overline{\text{FLAG2}}$, OVLO1, OVLO2, SETI1, SETI2, TSTART1, TSTART2, UVOV1, UVOV2	10	White Test Point 0.040" (1.02mm) Hole Diameter	KEYSTONE 5002
26	GND, GND1, GND3	3	Black Test Point 0.063" (1.60mm) Hole Diameter	KEYSTONE 5011
27	GND2, GND4	2	Black Test Point 0.040" (1.02mm) Hole Diameter	KEYSTONE 5001
28	OUT1, OUT2, VIN1, VIN2, VOUT	5	Red Test Point 0.063" (1.60mm) Hole Diameter	KEYSTONE 5010

S.NO	PART REFERENCE	QTY	DESCRIPTION	MANUFACTURER PART NUMBER
29	SU1-SU11	11	Shunt Connector, Black Closed Top	SULLINS ELECTRONICS CORP. STC02SYAN
30	J101, J102, J201	3	2-Pin Green PC Terminal Block	TE CONNECTIVITY 282837-2
31	J103	1	USB B connector	FCI CONNECT 61729-0010BLF
32	JU101, JU104, JU105, JU106, JU201, JU204, JU205	5	2-Pin Single-Row Header	SULLINS ELECTRONICS CORP. GCC02SAAN
33	JU102, JU202	4	3-Pin Single-Row Header	SULLINS ELECTRONICS CORP. GBC03SAAN
34	JU103, JU203	2	2x4 Dual-Row Header	SULLINS ELECTRONICS CORP. GBC04DAAN
35	C101, C201	2	PACKOUT: Aluminum-Electrolytic Capacitor	PANASONIC EEE-FK1K4R7P
36	C103, C203	0	OPEN: Ceramic Capacitor (0603)	-
37	C105, C106	2	PACKOUT: Ceramic Capacitor (1206)	MURATA GRM31CZ72A475KE11
38	D102, D202	2	PACKOUT: 40V, 600W, TVS (SMB)	BOURNS SMBJ40CA
39	PCB	1	PCB: MAX17614 Evaluation Kit	-

DEFAULT JUMPER TABLE	
JUMPER	**SHUNT POSITION**
JU103	(3:4)
JU105	(1:2)
JU203	(3:4)
JU205	(1:2)

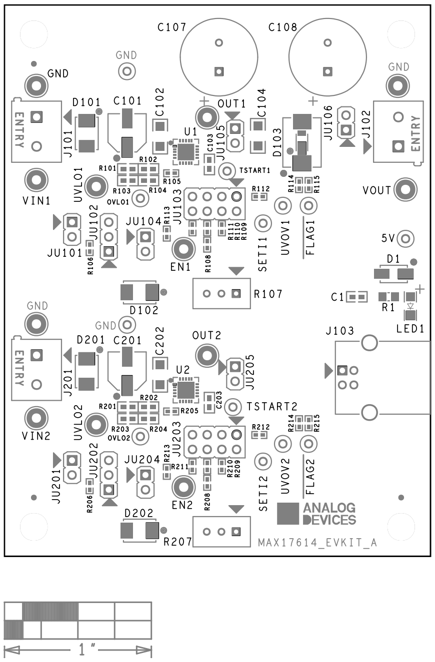
MAX17614 EV Kit Schematics



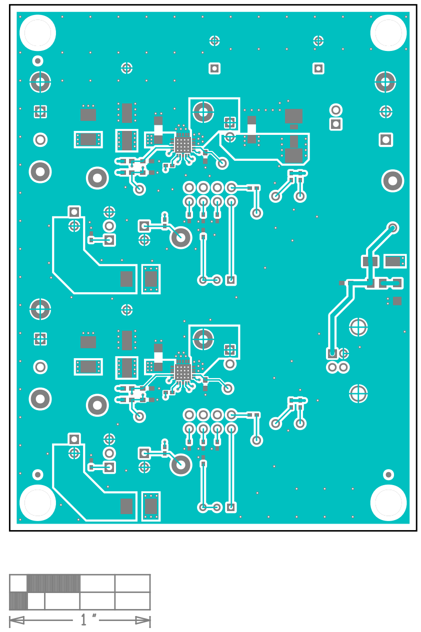


VBUS
D1
B160-13-F
C1
1UF
5V
R1
1K
LED1
SML-LX1206GC-TR
J103
61729-0010BLF
VOUT
GND
J102
282837-2
C108
470UF
C107
470UF
JU106
D103
DFLS2100
C106
4.7UF
PACKOUT
C105
4.7UF
PACKOUT
C104
4.7UF
JU105
OUT1
TSTART1
C103
OPEN
R115
10K
R114
10K
FLAG1
UVOV1
EN1
SET1
U1
MAX17614ATP+
D102
40V
JU101
JU104
JU103
R111
1.5K
R110
3K
R109
15K
R112
20K
R113
4.99K
R105
4.99K
JU102
R106
150K
R107
50K
R108
1.5K
OVLO1
UVLO1
C102
1UF
C101
4.7UF
PACKOUT
D101
40V
R101
2.2M
R102
1.1M
R103
470K
R104
18.2K
VIN1
J101
282837-2
GND

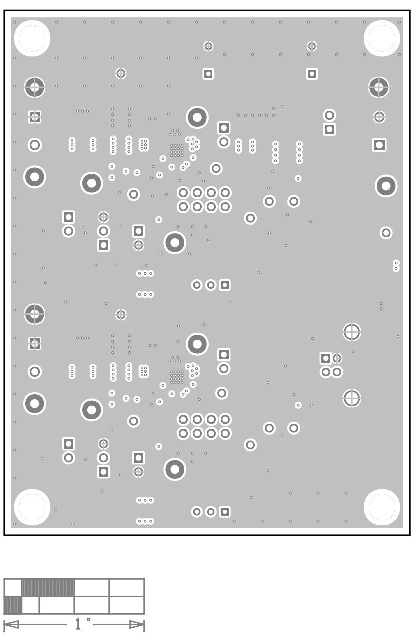
MAX17614 EV Kit PCB Layout



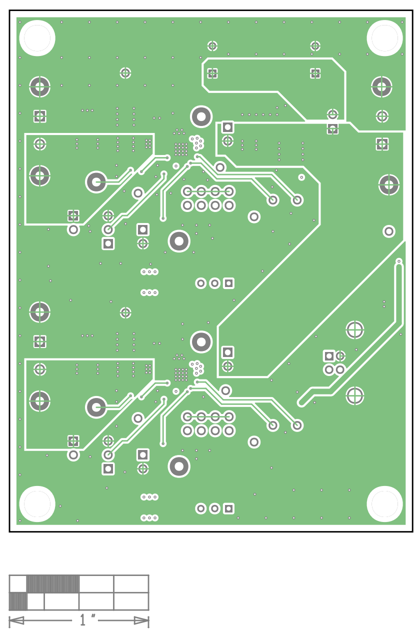
MAX17614 EV Kit PCB Layout—Top Silkscreen



MAX17614 EV Kit PCB Layout—Top Layer

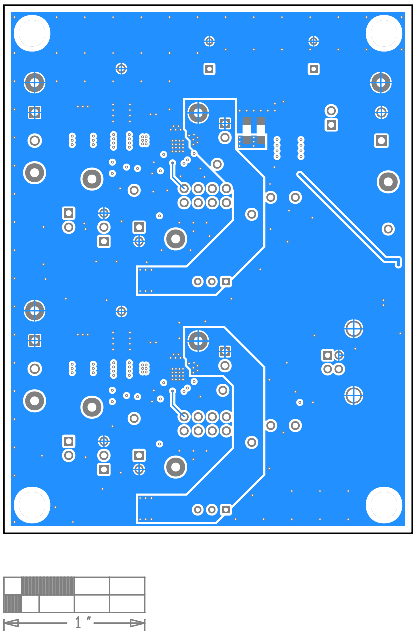


MAX17614 EV Kit PCB Layout—Layer 2

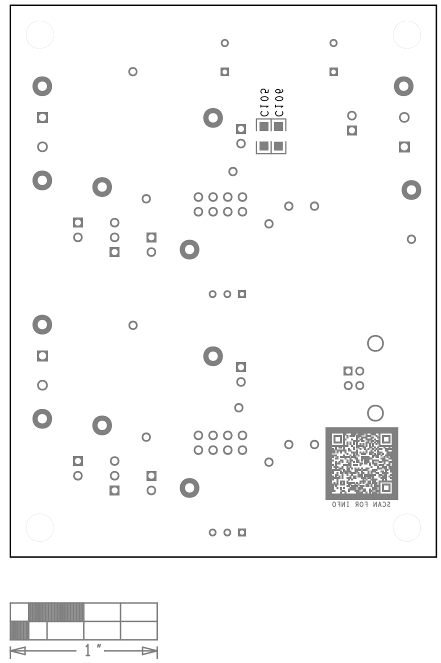


MAX17614 EV Kit PCB Layout—Layer 3

MAX17614 EV Kit PCB Layout (Continued)



MAX17614 EV Kit PCB Layout—Bottom Layer



MAX17614 EV Kit PCB Layout—Bottom Silkscreen

Ordering Information

PART	TYPE
MAX17614EVKIT#	EV Kit

#Denotes RoHS compliance.

Revision History

REVISION NUMBER	REVISION DATE	DESCRIPTION	PAGES CHANGED
0	6/23	Initial release	—