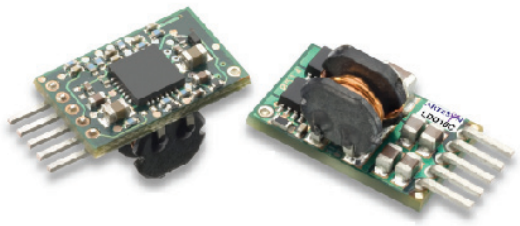
LDO10C Series

50 Watts
C-Class Non-Isolated

Total Power: 50 Watts
Input Voltage: 3 - 13.8 Vdc
No. of Outputs: Single



RoHS 2002/95/EC

Special Features

- 10 A current rating
- Adjustable output voltage: 0.59 - 5.1 V
- Excellent transient response
- Power enable (5 pin model)
- Minimum airflow
- Small package
- Termination voltage capability
- RoHS compliant

Safety

UL, cUL CAN/CSA 22.2
No. E139421
TÜV Product Service (EN60950)
Certificate No. TBD
CB Report and
Certificate to IEC60950

Electrical Specifications

Output		
Output voltage	See Note 5	0.59 - 5.1 V
Output setpoint accuracy	0.1% trim resistors	± 1.0%
Line regulation	Low line to high line	± 0.2%
Load regulation	Full load to min. load	± 0.5%
Min./max. load		0 A/10 A
Overshoot	At turn-on	0.5% max.
Undershoot	At turn-off	100 mV max.
Ripple and noise 5 Hz to 20 MHz	See Note 1	20 mV Vin = 5 V, Vout = 2.5 V
Transient response	See Notes 1, 2	130 mV max. deviation 15 µs recovery to within regulation band
Input		
Input voltage range		3 - 13.8 Vdc
Input current	Minimum load Remote OFF	50 mA 5 mA
Input current (max.)	See Note 3	10 A @ lo max.
Start-up time	Power up Remote ON/OFF	3 ms 2 ms

EMERSON
Network Power

General		
Efficiency (high input)	Vin=5 V, Vo=2.5 V, Io=10 A	91% typical
Switching frequency	Fixed	620 kHz
Approvals and standards (pending)		EN60950 UL/cUL6950
Material flammability		UL94V-0
Weight		1.899 g (0.067 oz.)
MTBF	12 V @ 40 °C, 100% load Bellcore 332	> 8,220,210 hours
Coplanarity	Surface mount models	150 µm

Environmental Specifications

Thermal performance See Note 5	Operating ambient, temperature Non-operating	-40 °C to +85 °C -40 °C to +125 °C
Protection		
Short-circuit		Hiccup, non-latching
Recommended System Capacitance		
Input	See Note 6	0 µF
Output	See Note 7	0 µF

Ordering Information

Output Power (Max.)	Input Voltage	OVP	Output Voltage	Output Current (Min.)	Output Current (Max.)	Efficiency (Typical)	Regulation Line	Regulation Load	Model Number [3,5]
50 W	3 - 13.8 Vdc	N/A	0.59 - 5.1 V	0 A	10 A	94%	± 0.2%	± 0.5%	LDO10C-005W05-VJ
50 W	3 - 13.8 Vdc	N/A	0.59 - 5.1 V	0 A	10 A	94%	± 0.2%	± 0.5%	LDO10C-005W05-HJ
50 W	3 - 13.8 Vdc	N/A	0.59 - 5.1 V	0 A	10 A	94%	± 0.2%	± 0.5%	LDO10C-005W05-SJ

Part Number System with Options

Product Family	Rated Output Current	Performance	Input Voltage	Number of Pins and Type of Output	Output Voltage	Mounting Option	RoHS Compliance (8)
LDO	**10**	**C**	**00**	**5W**	**05**	**V**	**J**
Product Family LDO = C-Class LDO Series	**Rated Output Current** 10 = 10 Amp	**Performance** C = Cost Optimized	**Input Voltage** 00 = 3 - 13.8 V	**Number of Pins and Type of Output** 5 W = 5 Pins and Wide Output	**Output Voltage** 05 = 0.59-5.1 V	**Mounting Option** V = Vertical H = Horizontal S = Surface	**RoHS Compliance** J = Pb free (RoHS 6/6 compliant) Y = non PB-free (TSE 5/6 compliant)

Output Voltage Adjustment of the LDO03C Series

The ultra-wide output voltage trim range offers major advantages to users who select the LDO010C series. It is no longer necessary to purchase a variety of modules in order to cover different output voltages. The output voltage can be trimmed in a range of 0.59 - 5.1 Vdc. When the LDO03C converter leaves the factory, the output has been adjusted to the default voltage of 0.59 V.

Notes:
1 Measured as per recommended system capacitance. See Application Note 186.
2 di/dt = 10 A/µs, Vin = Nom, Tc = 25 °C, load change = 0.50 lo to full lo and full lo to 0.50.
3 External input fusing is recommended.
4 Additional part numbers may be available with different output voltages.
5 Airflow dependent, 100 LFM minimum required.
6 No capacitors needed for ripple current capability.
7 No capacitors needed for stability.
8 NOTICE: the input voltage must be greater than the programmed output voltage. the max duty cycle is 95%. These non-isolated dc-dc modules are buck converters.

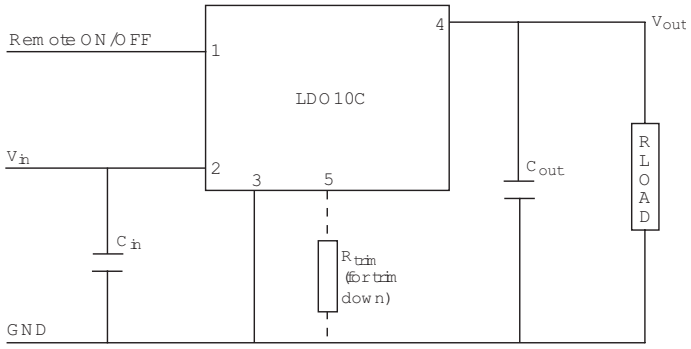


Figure 1: Standard Application Drawing

Mechanical Drawings

Vertical Mount

Dimensions in inches (mm). Tolerances (unless otherwise specified) 2 Places ± 0.030 (± 0.76) 3 Places ± 0.010 (± 0.25)

Pin Assignments

Pin No.	Function
1.	Enable
2.	Vin
3.	Common/RTN
4.	Vout
5.	Trim

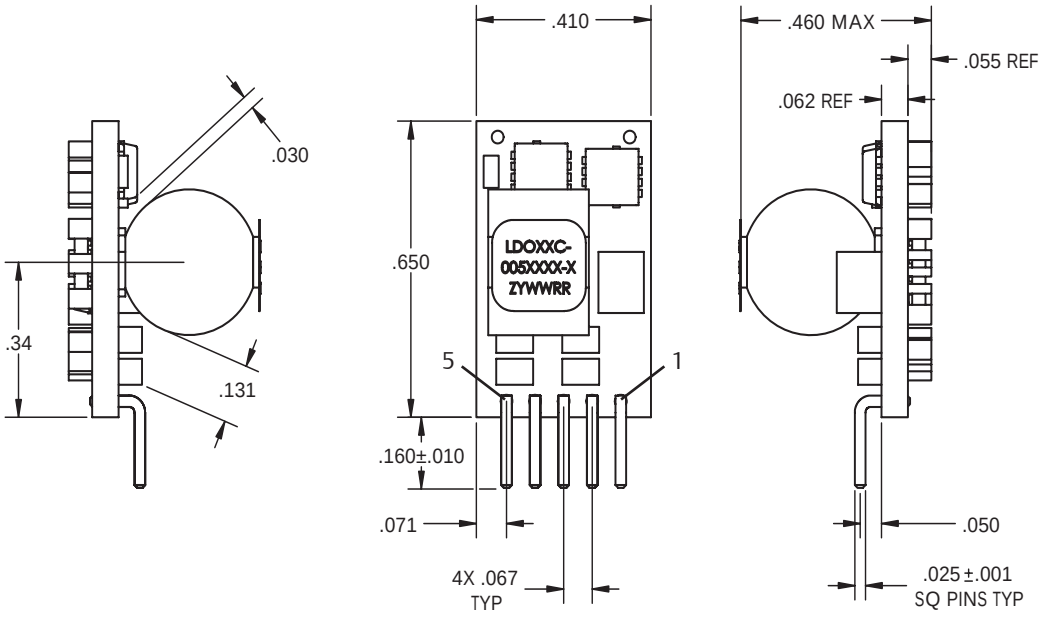


Figure 2: Vertical Mount Mechanical Drawing

Horizontal Mount

Dimensions in inches (mm). Tolerances (unless otherwise specified) 2 Places ± 0.030 (± 0.76) 3 Places ± 0.010 (± 0.25)

Pin Assignments

Pin No.	Function
1.	Enable
2.	Vin
3.	Common/RTN
4.	Vout
5.	Trim
6.	Mech Pin

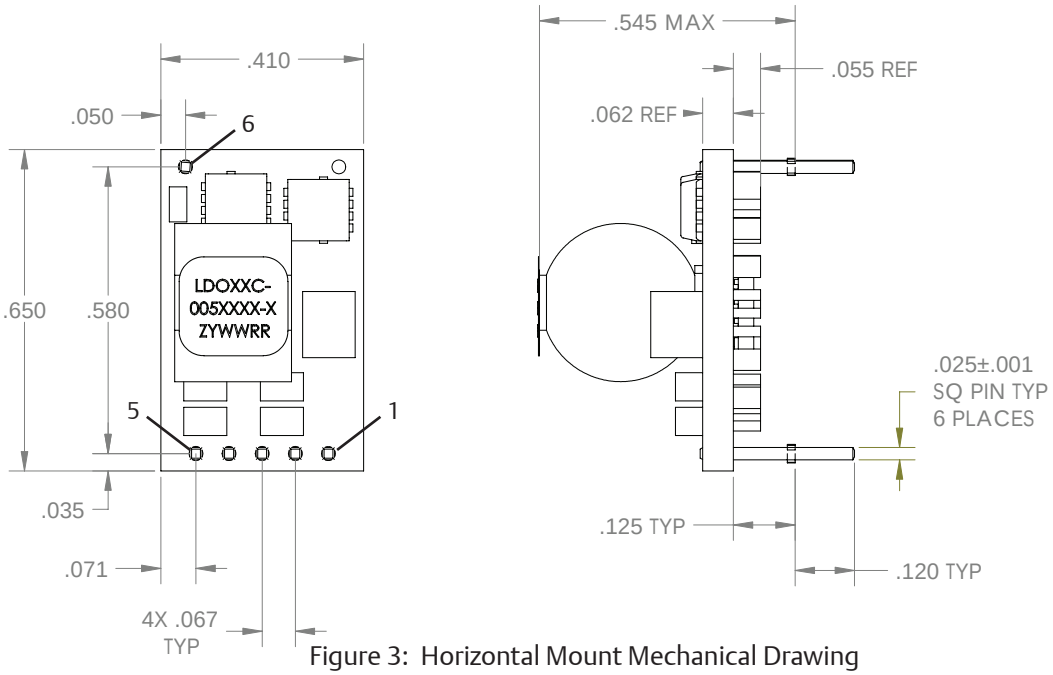


Figure 3: Horizontal Mount Mechanical Drawing

Surface Mount

Dimensions in inches (mm). Tolerances (unless otherwise specified) 2 Places ± 0.030 (± 0.76)
3 Places ± 0.010 (± 0.25)

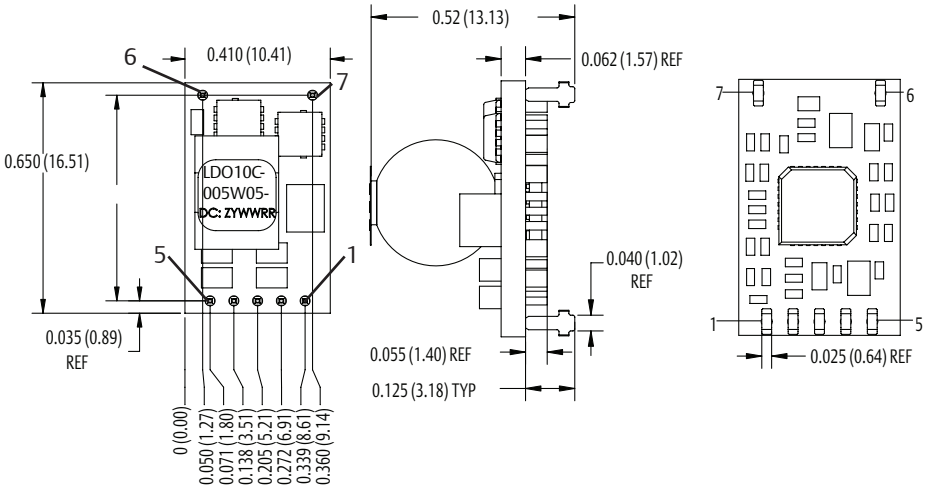


Figure 4: Surface Mount Mechanical Drawing

Pin Assignments

Pin No.	Function
1.	Enable
2.	Vin
3.	Common/RTN
4.	Vout
5.	Trim
6.	Mech Pin
7.	Mech Pin

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