

LDO03C Series

15 Watts C-Class Non-Isolated

Total Power: 15 Watts
Input Voltage: 3-13.8 Vdc
No. of Outputs: Single



Special Features

- 3 A current rating
- Adjustable output voltage: 0.59-5.1 V
- Excellent transient response
- Minimum airflow
- Small package
- Termination voltage capability
- RoHS compliant

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	±0.5%
Load regulation	Full load to min. load	±0.5%
Min./max. load		0 A/3 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	25 mV Vin=5 V, Vout=2.5 V
Transient response	See Notes 1, 2	235 mV max. deviation 20 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	3 A @ Io max.
Start-up time	Power up Remote ON/OFF	3 ms 2 ms

Safety

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

General

Efficiency (high input)	Vin=5 V, Vo=2.5 V, Io=3 A	90% typ.
Switching frequency	Fixed	1.5 mHz
Approvals and standards (pending)		EN60950 UL/cUL6950
Material flammability		UL94V-0
Weight		1.7 g (0.06 oz.)
MTBF	12 Vi, 5.0 Vo @ 40 °C, 100% load Bellcore 332	> 10,000,000 hours
Coplanarity	Surface mount models	150 µm

Environmental Specifications

Thermal performance	Operating ambient, temperature	-40 °C to +70 °C
See Note 5	Non-operating ambient	-40 °C to +125 °C

Protection

Short-circuit	Hiccup, non-latching
Overvoltage protection	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)
15 W	3-13.8 Vdc	N/A	0.59-5.1 V	0 A	3 A	90%	±0.5%	±0.5%	LDO03C-005W05-VJ
15 W	3-13.8 Vdc	N/A	0.59-5.1 V	0 A	3 A	90%	±0.5%	±0.5%	LDO03C-005W05-HJ
15 W	3-13.8 Vdc	N/A	0.59-5.1 V	0 A	3 A	90%	±0.5%	±0.5%	LDO03C-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	03	C	00	5W	05	V	J
Product Family LDO = C Class LDO Series	Rated Output Current 03 = 3 Amp	Performance C = Cost Optimized	Input Voltage 00 = 3-13.8 V	Number of Pins and Type of Output 5W = 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)

Output Voltage Adjustment of the LDO03C Series

The ultra-wide output voltage trim range offers major advantages to users who select the LDO03C 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 $di/dt = 10 \text{ A}/\mu\text{s}$, $V_{in} = \text{Nom}$, $T_c = 25^\circ\text{C}$, 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..

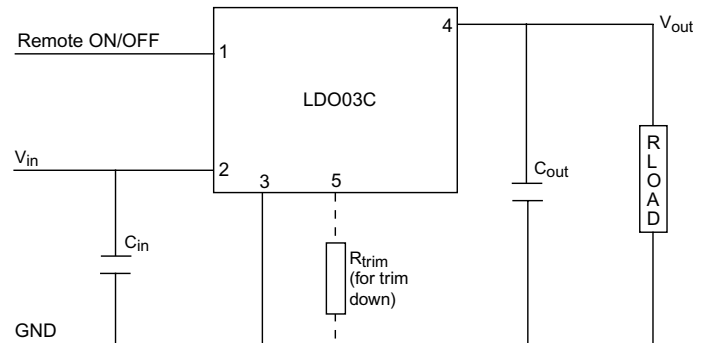


Figure 1: Standard Application Drawing

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

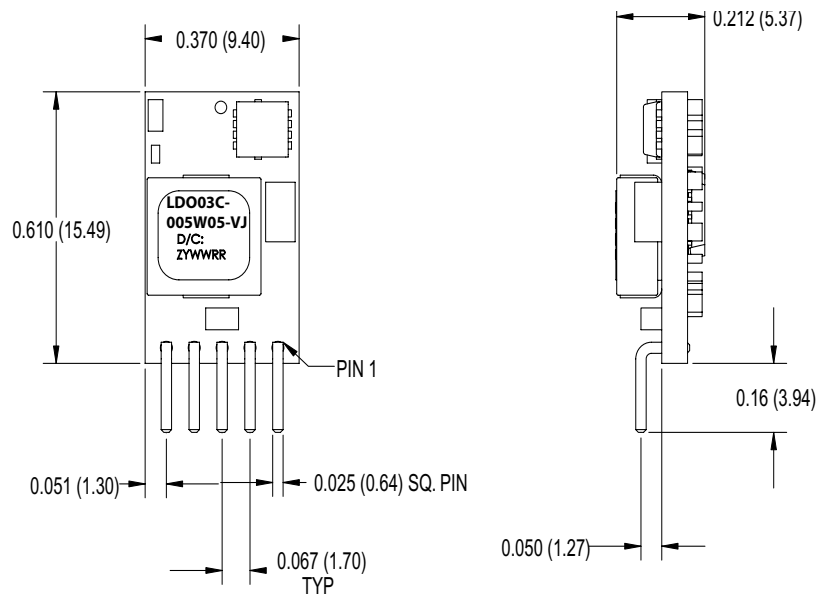


Figure 2: Vertical Mount Mechanical Drawing

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 (Horz/SMT only)

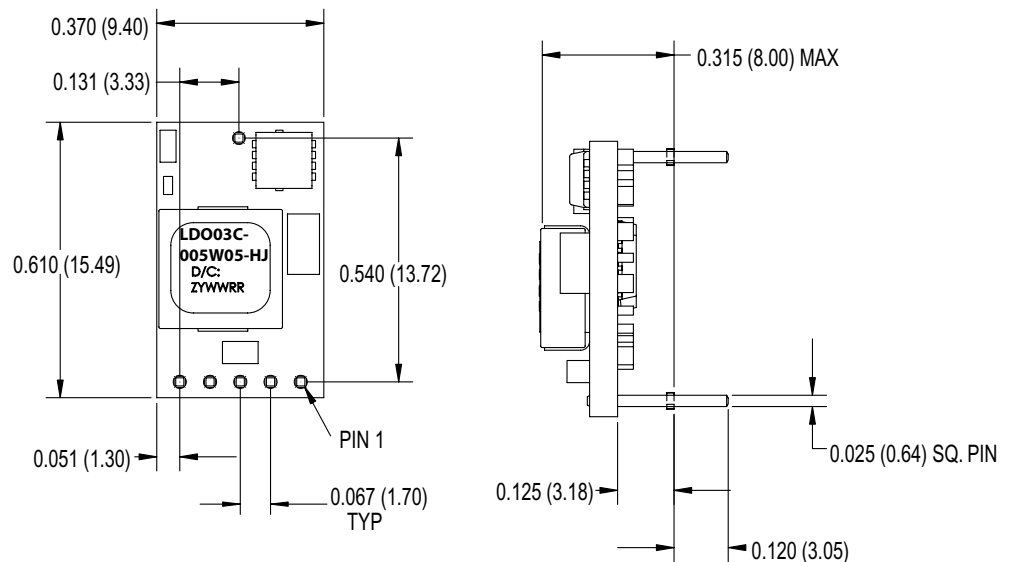


Figure 3: Horizontal Mount Mechanical Drawing

Surface Mount

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

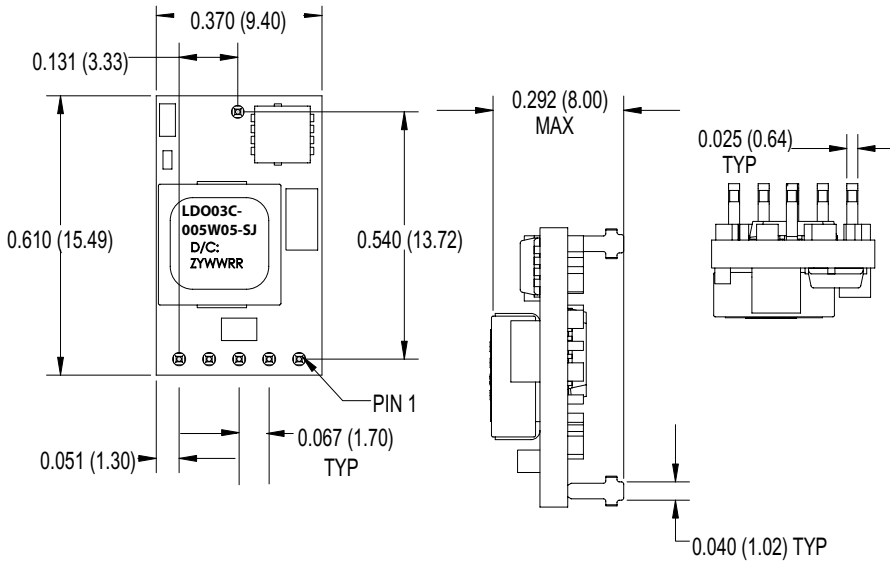


Figure 4: Surface Mount Mechanical Drawing

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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