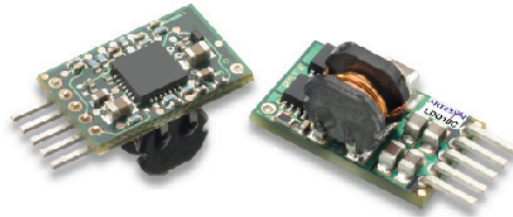


## LDO10C Series

### 50 Watts C-Class Non-Isolated

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



### 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

## 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 @ 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=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	Operating ambient, temperature	-40 °C to +85 °C
See Note 5	Non-operating	-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 <sup>(3,5)</sup>
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 <sup>(8)</sup>
<b>LDO</b>	<b>10</b>	<b>C</b>	<b>00</b>	<b>5W</b>	<b>05</b>	<b>V</b>	<b>J</b>
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 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) 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  $di/dt = 10 \text{ A}/\mu\text{s}$ ,  $V_{in} = \text{Nom}$ ,  $T_c = 25 \text{ }^\circ\text{C}$ , 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.

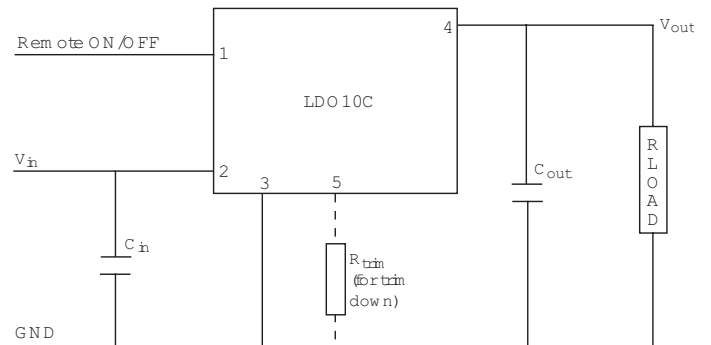


Figure 1: Standard Application Drawing

# Mechanical Drawings

## Vertical Mount

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

### Pin Assignments

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

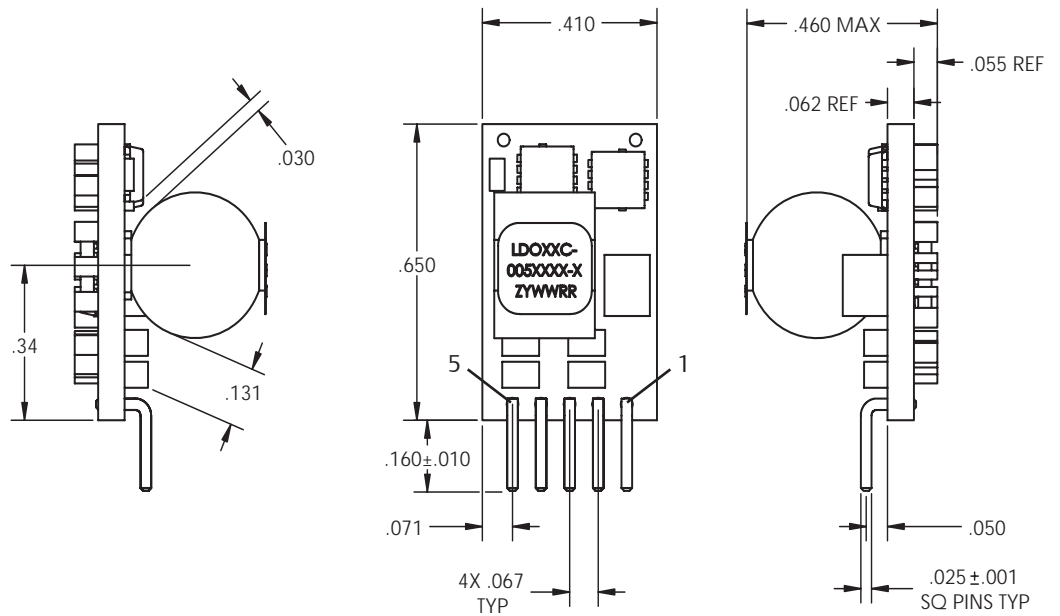


Figure 2: Vertical Mount Mechanical Drawing

## Horizontal Mount

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

### Pin Assignments

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

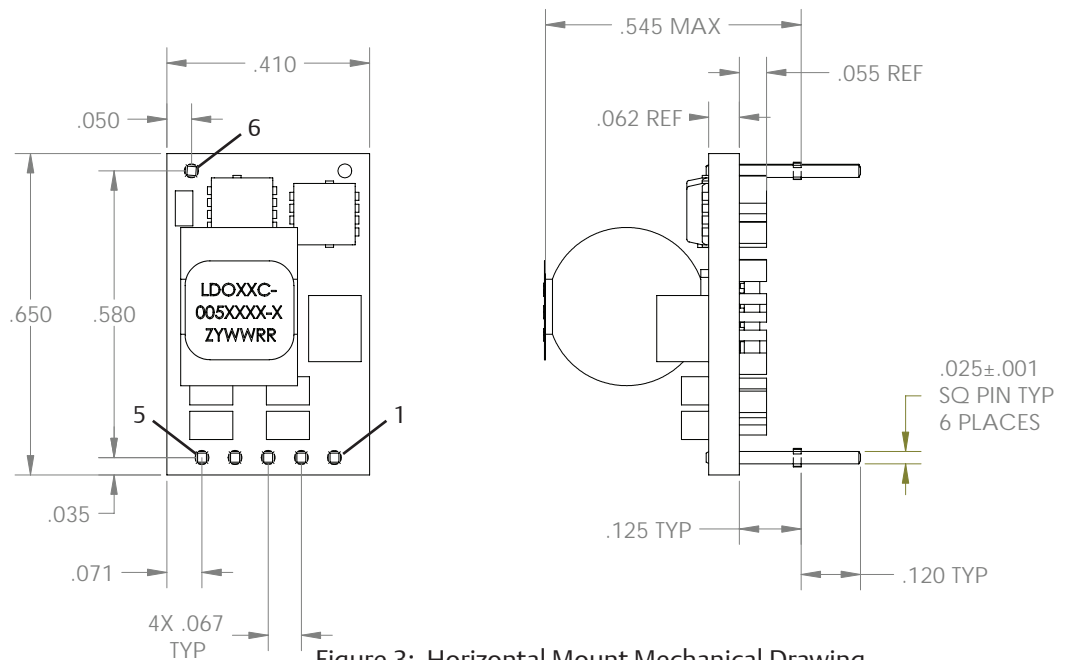


Figure 3: Horizontal Mount Mechanical Drawing

## Surface Mount

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

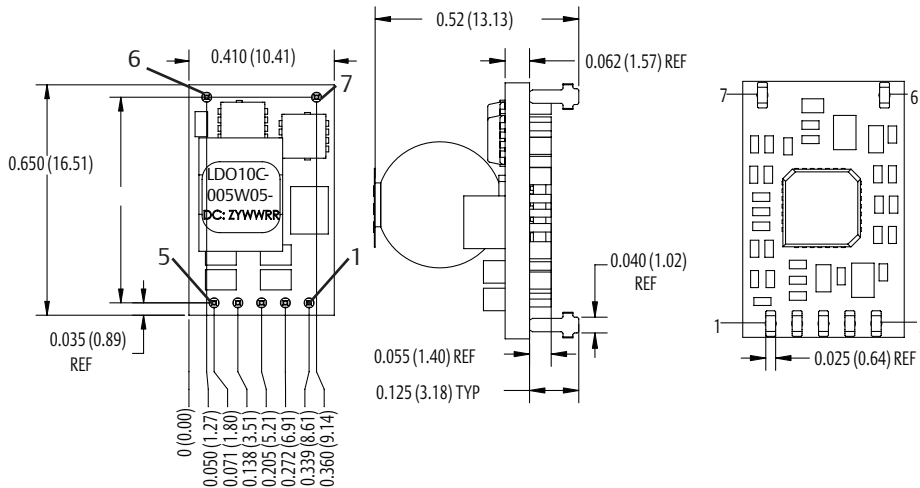


Figure 4: Surface Mount Mechanical Drawing

## 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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