

LDO03C Series

3 Vdc to 13.8 Vdc Input Single Output

ARTESYN[®]
TECHNOLOGIES

DC-DC CONVERTERS

C Class Non-isolated

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NEW Product

- **3 A current rating**
- **Input voltage range: 3-13.8 V**
- **Adjustable output voltage: 0.59-5.1 V**
 - **Optional 3 pin model factory set**
 - **Optional 5 pin model factory set with power good option**
- **Excellent transient response**
- **Power enable (5 pin model)**
- **Minimum airflow**
- **Small package**
- **Termination voltage capability**
- **RoHS compliant**



The LDO03C is a new high density, open frame, non-isolated converter for space sensitive applications. This model has a wide input range of 3-13.8 V and offers a 0.59-5.1 V adjustable output with 3 A capability. Typical efficiency for this model is 90%. The 5 pin version of this voltage device offers the standard features of enable, and with a default wide adjustable output voltage range or option of power good.

UL[®] US
TUV
2 YEAR WARRANTY

All specifications are typical at nominal input, full load at 25 °C unless otherwise stated

SPECIFICATIONS

OUTPUT SPECIFICATIONS

Output voltage	(See Note 5)	0.59-5.1 Vdc
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	(See Note 1)	25 mV 5 Hz to 20 MHz 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 SPECIFICATIONS

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.
Startup time	Power up Remote ON/OFF	3 ms 2 ms

GENERAL SPECIFICATIONS

Efficiency	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 (See Note 5)	Operating ambient, temperature Non-operating	0 °C to +70 °C -40 °C to +125 °C
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PROTECTION

Short-circuit	Hiccup, non-latching
Overvoltage	Hiccup, non-latching

RECOMMENDED SYSTEM CAPACITANCE

Input capacitance	(See Note 6)	0 µF
Output capacitance	(See Note 7)	0 µF

International Safety Standard Approvals



UL/cUL CAN/CSA 22.2 No. E139421
UL60950 File No. TBD



TÜV Product Service (EN60950) Certificate No. TBD
CB report and certificate to IEC60950

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NEW Product

OUTPUT POWER (MAX.)	INPUT VOLTAGE	OVP	OUTPUT VOLTAGE	OUTPUT CURRENT (MIN.)	OUTPUT CURRENT (MAX.)	EFFICIENCY (TYP.)	REGULATION		MODEL NUMBER (9, 10)
							LINE	LOAD	
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

LDO03C-005W05-VJ

Product Family

LDO = C Class

LDO Series

Rated Output Current

03 = 3 A

Performance

C = Cost Optimized

Input Voltage

00 = 3-13.8 V

RoHS Compliance⁽⁹⁾

J = Pb-free (RoHS 6/6 compliant)

Mounting Option

V = Vertical Mount

H = Horizontal Mount

S = Surface Mount

Output Voltage

05 = 0.59-5.1 V

Number of Pins and Type of Output⁽⁶⁾

5W = 5 Pins and Wide Output

Output Voltage Adjustment of the LDO03C Series

The ultra-wide output voltage trim range offers major advantages to users who select the LDO03C. 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 V. 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 Io to full Io and full Io 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 Consult factory for 3 pin (fixed output) version part numbers.
- 9 The 'J' suffix indicates that these parts are Pb-free (RoHS 6/6) compliant. TSE RoHS 5/6 (non Pb-free) compliant versions may be available on special request, please contact your local sales representative for details.
- 10 NOTICE: Some models may not support all options. Please contact your local Artesyn representative or use the on-line model number search tool at <http://www.artesyn.com/powergroup/products.htm> to find a suitable alternative.

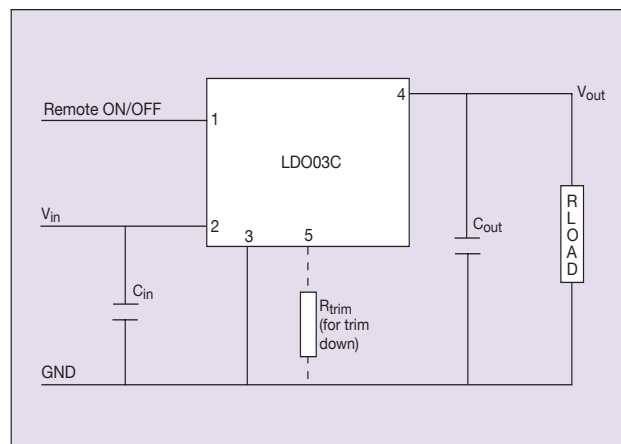


Figure 1: Standard Application Drawing

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NEW Product

PIN CONNECTIONS	
PIN NO.	FUNCTION
1	Enable
2	Vin
3	Common / RTN
4	Vout
5	PG / Trim

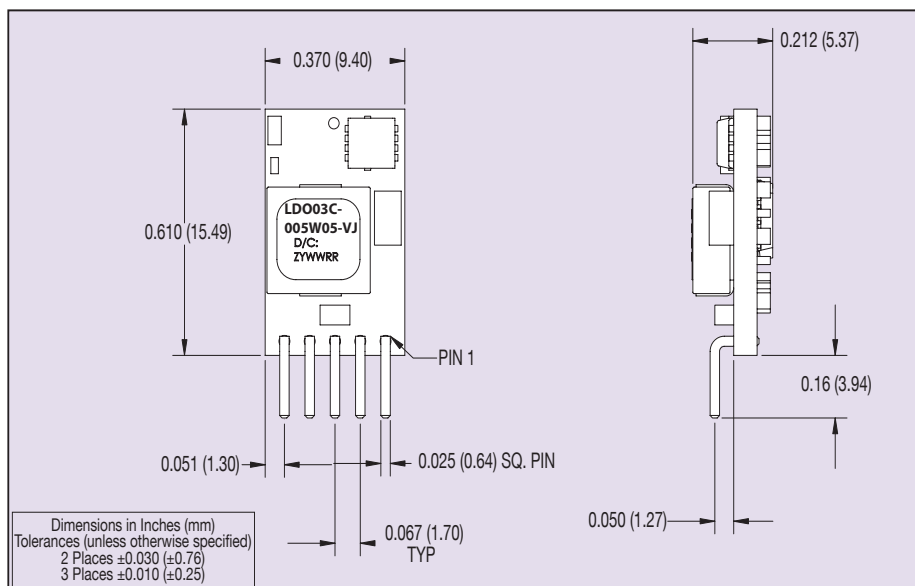


Figure 2: Vertical Mount Mechanical Drawing

PIN CONNECTIONS	
PIN NO.	FUNCTION
1	Enable
2	Vin
3	Common / RTN
4	Vout
5	PG / Trim
6	Mech Pin (Horz/SMT only)

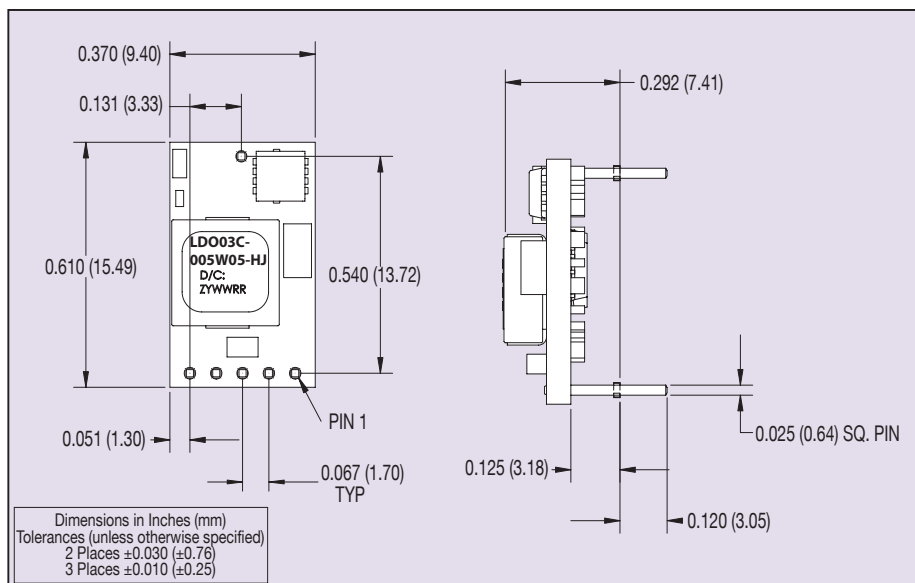


Figure 3: Horizontal Mount Mechanical Drawing

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PIN CONNECTIONS	
PIN NO.	FUNCTION
1	Enable
2	Vin
3	Common / RTN
4	Vout
5	PG / Trim
6	Mech Pin

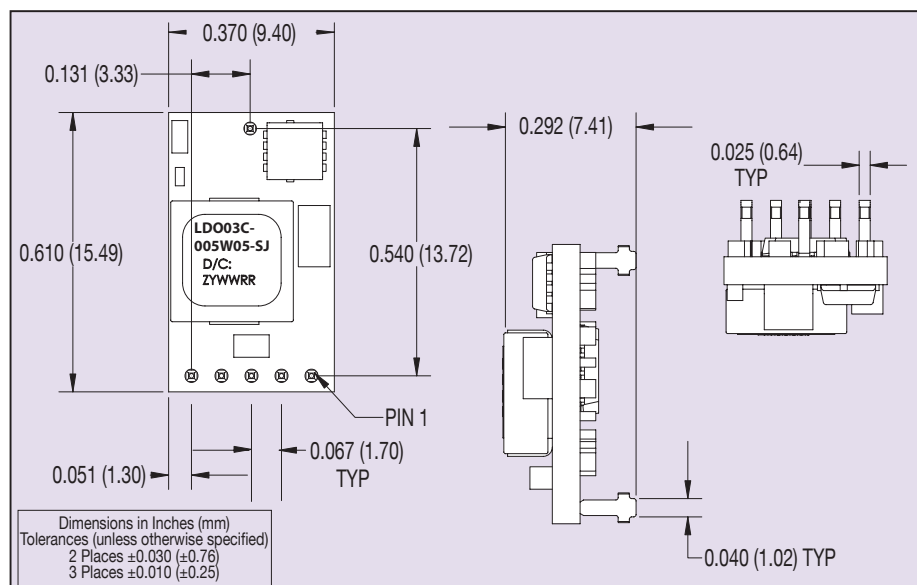


Figure 4: Surface Mount Mechanical Drawing

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Please consult our website for the following items: ✓Application Note ✓Longform Datasheet

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