

LDO06C Series

30 Watts

Total Power: 30 Watts
Input Voltage: 3-13.8 Vdc
No. of Outputs: Single

Special Features

- 6 A output current rating
- Input voltage range: 3-13.8 Vdc
- Adjustable out voltage: 0.59-5.1 V
- Optional factory setting with power good option
- Excellent transient response
- Power enable
- Minimum airflow
- Small package
- Termination voltage capability
- RoHS compliant

Safety

UL, cUL 60950-1
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/6 A |
| Overshoot | At turn-on | 0.5% max. |
| Undershoot | At turn-off | 100 mV max. |
| Load transient response | 2.5 A/μs | 200 mV deviation 25 μs settling time |
| 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 | 6 A @ Io max. |
| Start-up time | Power up Remote ON/OFF | 3 ms 2 ms |

General

| | | |
|-------------------------|-----------------------------------------|---------------------|
| Efficiency (high input) | Vin=5 V, Vo=2.5 V, Io=6 A | 92% |
| Switching frequency | Fixed | 620 kHz |
| 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 Non-operating ambient | -40 °C to +85 °C -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 | Output Voltage | Output Current (Min.) | Output Current (Max.) | Efficiency (Typical) | Regulation Line | Regulation Load | Model Number ^(3,5) |
|---------------------|---------------|----------------|-----------------------|-----------------------|----------------------|-----------------|-----------------|-------------------------------|
| 30W | 3-13.8 Vdc | 0.59-5.1 V | 0 A | 6 A | 92% | ±0.2% | ±0.5% | LDO06C-005W05-VJ |
| 30W | 3-13.8 Vdc | 0.59-5.1 V | 0 A | 6 A | 92% | ±0.2% | ±0.5% | LDO06C-005W05-HJ |
| 30W | 3-13.8 Vdc | 0.59-5.1 V | 0 A | 6 A | 92% | ±0.2% | ±0.5% | LDO06C-005W05-SJ |

Part Number System with Options

| Product Family | Rated Output Current | Performance | Input Voltage | Number of Pins Type of Output | Output Voltage | Mounting Option | Custom Option | RoHS Compliance |
|-------------------------------------------|-------------------------------------------|------------------------------------------|---------------------------------------|------------------------------------------------------|------------------------------------------|-----------------------------------------------------------------------------------------------------|----------------------|------------------------------------------------------------|
| LDO | 06 | C | 00 | 5W | 05 | V | X | J |
| Product Family LDO = LDO Series | Rated Output Current 06 = 6 Amp | Performance C = Cost Optimized | Input Voltage 00 = 3-13.8 V | Type of Output 5W = 5 Pins and Wide Output | Output Voltage 05 = 0.59-5.1 V | Mounting Option V = Vertical H = Horizontal S = Horizontal SMT VS = Vertical SMT | Custom Option | RoHS Compliance J = Pb free (RoHS 6/6 compliant) |

Output Voltage Adjustment of the LDO06C Series

The ultra-wide output voltage trim range offers major advantages to users who select the LDO06C 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 LDO06C converter leaves the factory, the output has been adjusted to the default voltage of 0.59 V.

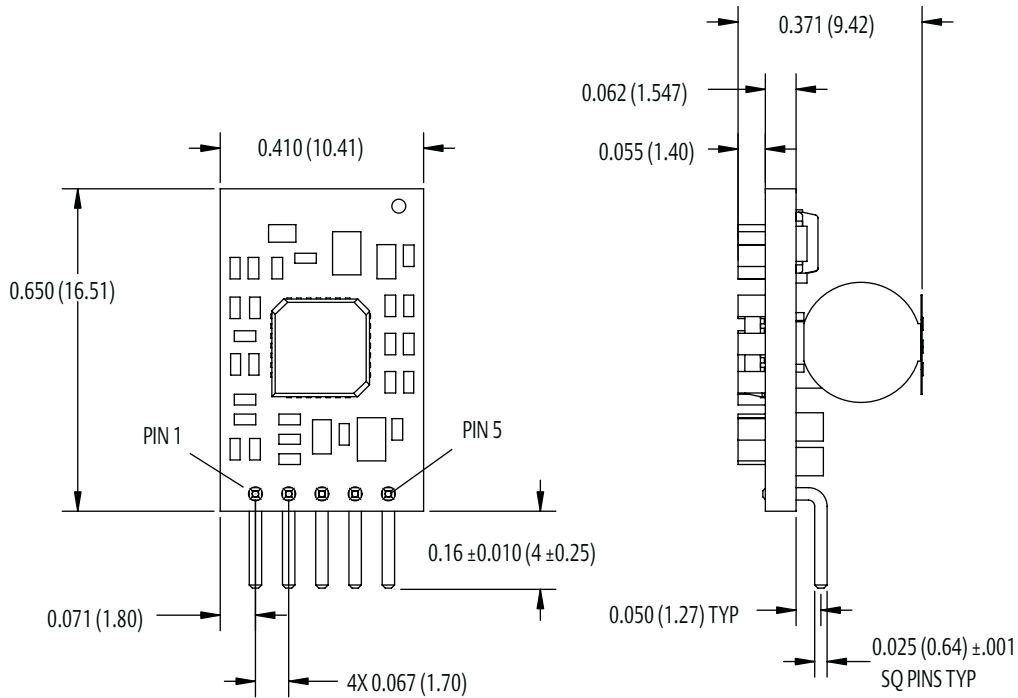
Notes:

- Measured as per recommended system capacitance. See Technical Reference Note.
- $di/dt = 10 \text{ A}/\mu\text{s}$, $V_{in} = \text{Nom}$, $T_c = 25 \text{ }^\circ\text{C}$, load change = 0.50 I_o to full I_o and full I_o to 0.50 I_o.
- External input fusing is recommended.
- Additional part numbers may be available with different output voltages.
- Airflow dependent, 100 LFM minimum required.
- No capacitors needed for ripple current stability.
- No capacitors needed for stability.
- TSE RoHS 5/6 (non Pb-free) compliant versions may be available on special request, please consult your local sales representative for details.
- NOTICE: Some models do not support all options. Please contact your local Emerson Network Power representative or use the on-line model number search tool at <http://www.powerconversion.com/powergroup/products.htm> to find a suitable alternative.

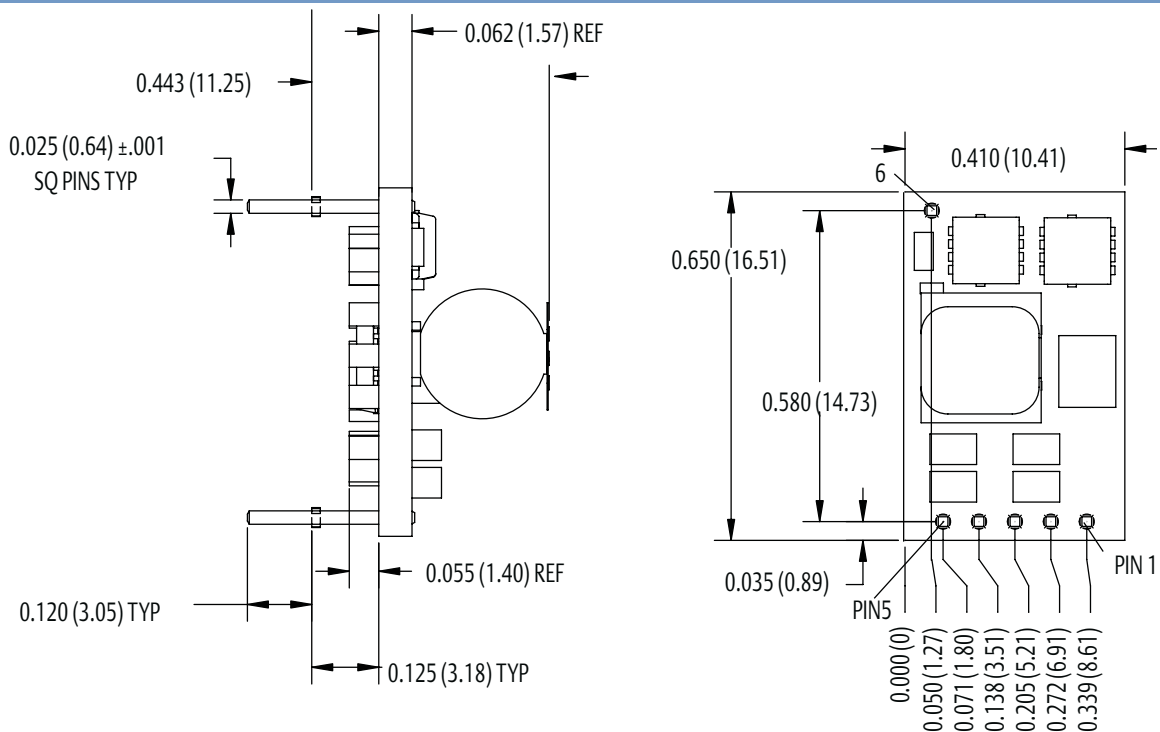
Mechanical Drawings

Vertical Mount

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

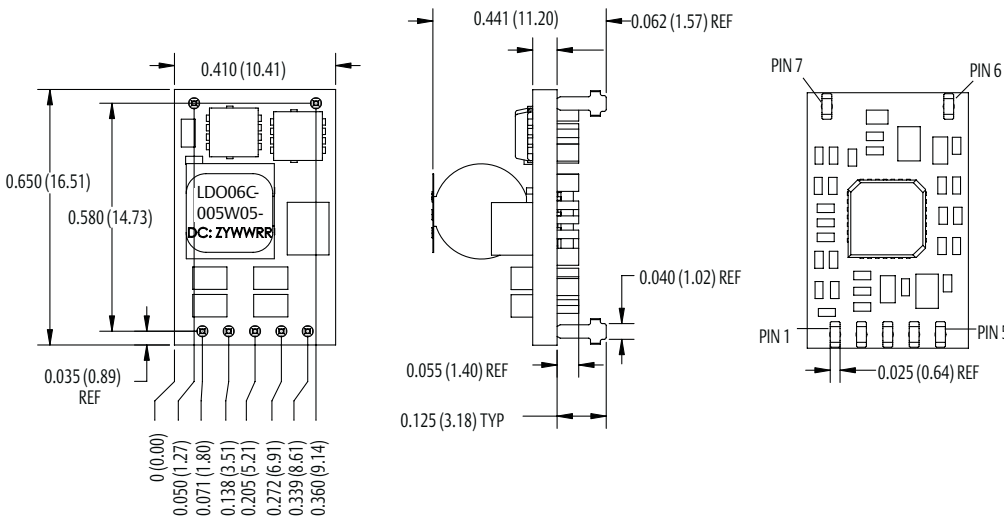


Horizontal Mount



Mechanical Drawings (Cont'd)

Surface Mount



Pin Assignments

Single Output

1. Enable
2. Vin
3. Common/RTN
4. Vout
5. PG/Trim
6. Mech Pin (Horz/SMT only)
7. Mech Pin (Horz/SMT only)

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