

## LDO06C Series

### 30 Watts

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

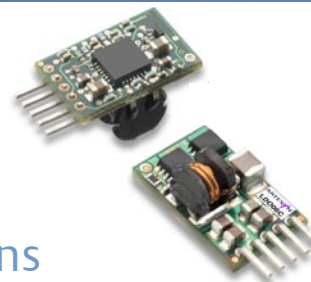
### Special Features

- 6 A output current rating
- Input voltage range: 3-13.8 Vdc
- Adjustable out voltage: 0.59-5.1 V
- Excellent transient response
- 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

Rev. 03.19.08  
LDO06C  
1 of 4



## 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.                                                          |
| Ripple and noise<br>5 Hz to 20 MHz | See Note 1             | 30 mV<br>Vin=5 V,<br>Vout=2.5 V                                      |
| Transient response                 | See Notes 1, 2         | 130 mV max. deviation<br>15 µs recovery to within<br>regulation band |

### Input

|                      |                            |               |
|----------------------|----------------------------|---------------|
| Input voltage range  |                            | 3-13.8 Vdc    |
| Input current        | Minimum load<br>Remote OFF | 50 mA<br>5 mA |
| Input current (max.) | See Note 3                 | 6 A @ Io max. |
| Start-up time        | Power up<br>Remote ON/OFF  | 3 ms<br>2 ms  |

### General

|                                      |                                            |                       |
|--------------------------------------|--------------------------------------------|-----------------------|
| Efficiency                           | Vin=5 V, Vo=2.5 V, Io=6 A                  | 92%                   |
| Switching frequency                  | Fixed                                      | 620 kHz               |
| Approvals and standards<br>(pending) |                                            | EN60950<br>UL/cUL6950 |
| Material flammability                |                                            | UL94V-0               |
| Weight                               |                                            | 1.899 g (0.067 oz.)   |
| MTBF                                 | 12 V @ 40 °C,<br>100% load<br>Bellcore 332 | 8,392,808 hours       |
| Coplanarity                          | Surface mount models                       | 150µm                 |

## Environmental Specifications

|                                   |                                            |                                       |
|-----------------------------------|--------------------------------------------|---------------------------------------|
| Thermal performance<br>See Note 5 | Operating ambient<br>Non-operating ambient | -40 °C to +70 °C<br>-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) |
|---------------------|---------------|-----|----------------|-----------------------|-----------------------|----------------------|-----------------|-----------------|--------------------|
| 30W                 | 3-13.8 Vdc    | N/A | 0.59-5.1 V     | 0 A                   | 6 A                   | 92%                  | ±0.2%           | ±0.5%           | LDO06C-005W05-VJ   |
| 30W                 | 3-13.8 Vdc    | N/A | 0.59-5.1 V     | 0 A                   | 6 A                   | 92%                  | ±0.2%           | ±0.5%           | LDO06C-005W05-HJ   |
| 30W                 | 3-13.8 Vdc    | N/A | 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 and Type of Output                                | Output Voltage                    | Mounting Option                                                  | RoHS Compliance (9)                                 |
|-----------------------------------------------|------------------------------------|-----------------------------------|--------------------------------|------------------------------------------------------------------|-----------------------------------|------------------------------------------------------------------|-----------------------------------------------------|
| <b>LDO</b>                                    | <b>06</b>                          | <b>C</b>                          | <b>00</b>                      | <b>5W</b>                                                        | <b>05</b>                         | <b>V</b>                                                         | <b>J</b>                                            |
| Product Family<br>LDO = C Class<br>LDO Series | Rated Output Current<br>06 = 6 Amp | Performance<br>C = Cost Optimized | Input Voltage<br>00 = 3-13.8 V | Number of Pins and Type of Output<br>5W = 5 Pins and Wide Output | Output Voltage<br>05 = 0.59-5.1 V | Mounting Option<br>V = Vertical<br>H = Horizontal<br>S = Surface | RoHS Compliance<br>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:

1. Measured as per recommended system capacitance. See Technical Reference Note.
2.  $di/dt = 6 \text{ A}/\mu\text{s}$ ,  $V_{in} = \text{Nom}$ ,  $T_c = 25^\circ\text{C}$ , 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 stability.
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.

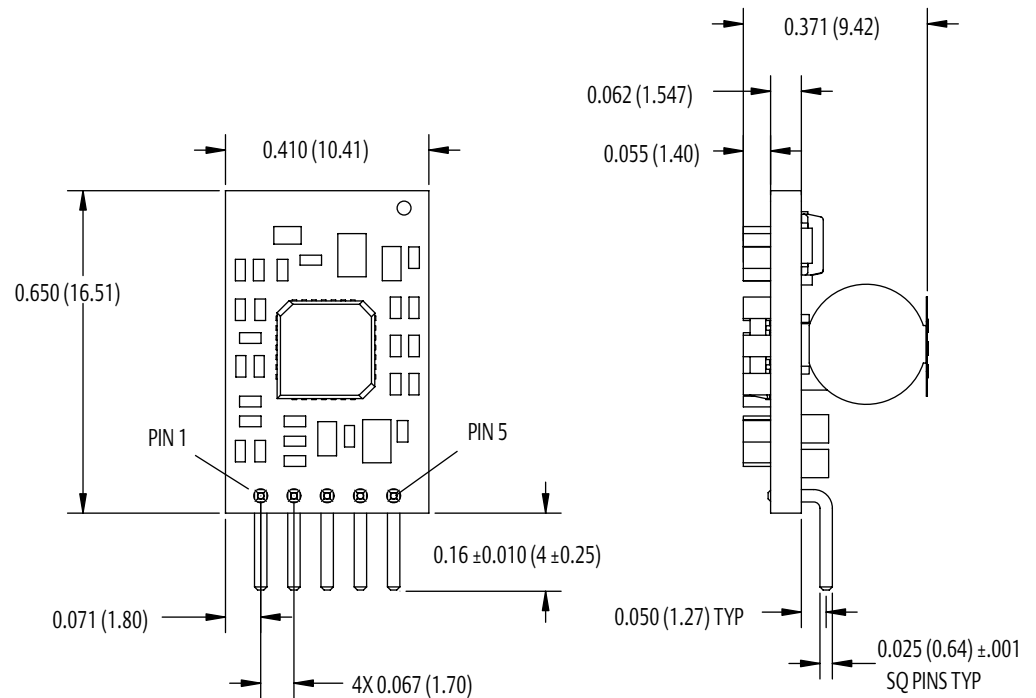
# Mechanical Drawings

## Vertical Mount

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

### Pin Assignments

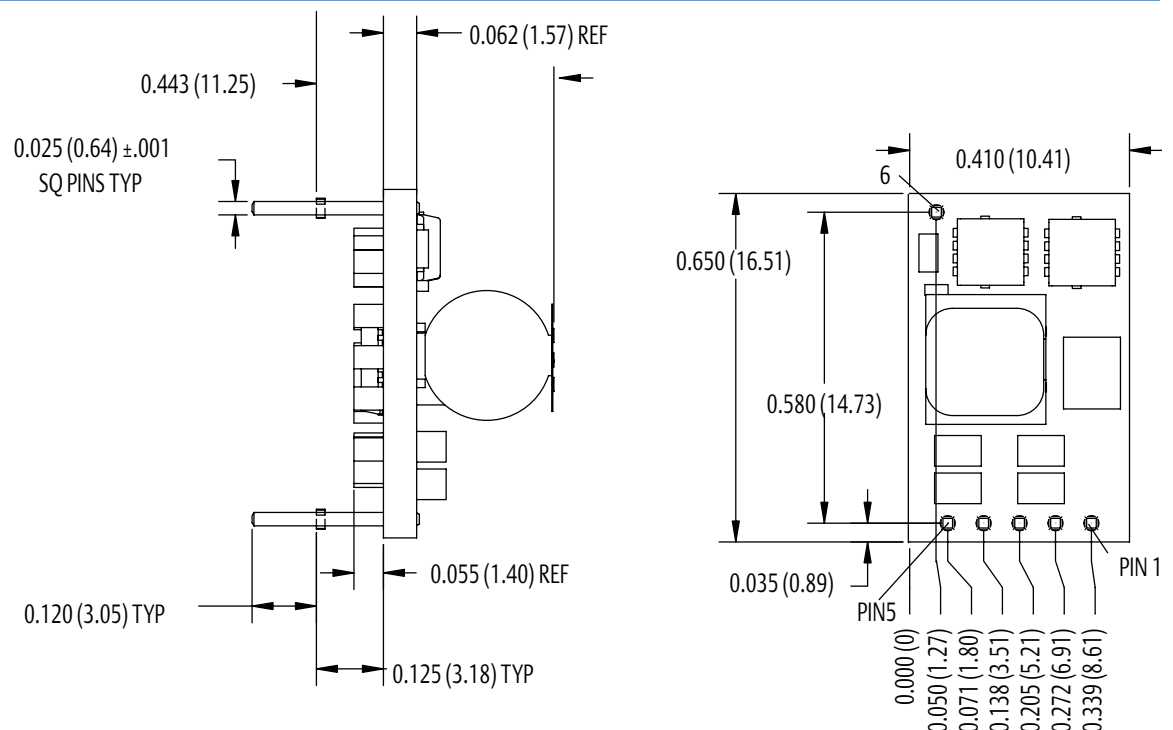
| Pin No. | Function   |
|---------|------------|
| 1.      | Enable     |
| 2.      | Vin        |
| 3.      | Common/RTN |
| 4.      | Vout       |
| 5.      | Trim       |



## Horizontal Mount

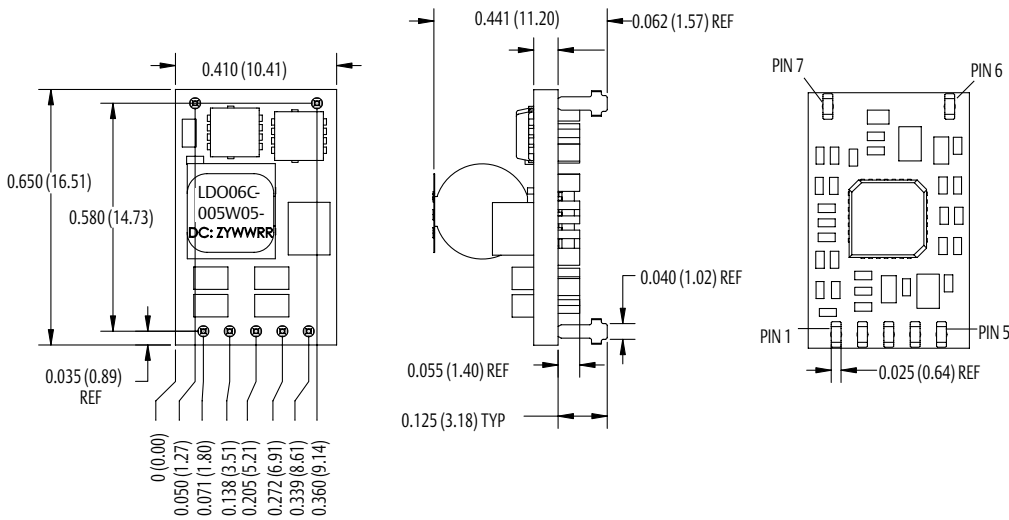
### Pin Assignments

| Pin No. | Function                    |
|---------|-----------------------------|
| 1.      | Enable                      |
| 2.      | Vin                         |
| 3.      | Common/RTN                  |
| 4.      | Vout                        |
| 5.      | Trim                        |
| 6.      | Mech Pin<br>(Horz/SMT only) |



## Mechanical Drawings

### Surface Mount



### Pin Assignments

#### Single Output

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

\* This is a Preliminary Datasheet. Emerson Network Power reserves the right to make changes to the information contained herein without notice and assumes no liability as a result of its use or application.

### Americas

5810 Van Allen Way  
Carlsbad, CA 92008  
USA  
Telephone: +1 760 930 4600  
Facsimile: +1 760 930 0698

### Europe (UK)

Waterfront Business Park  
Merry Hill, Dudley  
West Midlands, DY5 1LX  
United Kingdom  
Telephone: +44 (0) 1384 842 211  
Facsimile: +44 (0) 1384 843 355

### Asia (HK)

1/F, Lu Plaza  
2 Wing Yip Street  
Kwun Tong, Kowloon  
Hong Kong  
Telephone: +852 2176 3333  
Facsimile: +852 2176 3888

For global contact, visit:

**[www.powerconversion.com](http://www.powerconversion.com)**  
**[techsupport.embeddedpower@emerson.com](mailto:techsupport.embeddedpower@emerson.com)**

While every precaution has been taken to ensure accuracy and completeness in this literature, Emerson Network Power assumes no responsibility, and disclaims all liability for damages resulting from use of this information or for any errors or omissions.

### Emerson Network Power.

The global leader in enabling business-critical continuity.

- AC Power
- Connectivity
- DC Power
- Embedded Computing
- **Embedded Power**
- Monitoring
- Outside Plant
- Power Switching & controls
- Precision Cooling
- Racks & Integrated Cabinets
- Services
- Surge Protection

**EmersonNetworkPower.com**

Emerson Network Power and the Emerson Network Power logo are trademarks and service marks of Emerson Electric Co. ©2008 Emerson Electric Co.