



Manufactured by TDK  
TDK-Lambda is a collaborative product brand between TDK and the Lambda group.

- ◆ 3 to 5V or 6 to 16V Input
- ◆ 1 to 5V Outputs (programmable)
- ◆ Surface Mount
- ◆ Low 4.5mm Profile
- ◆ Non Isolated Output

### Key Market Segments & Applications

Telecommunications

Datacom

Instrumentation

## CE 1000 Series

### 1.5 - 2.5A Point of Load Converter

#### CE 1000 Features and Benefits

##### Features

- ◆ Output voltage programming
- ◆ Five sided shielding

##### Benefits

- ◆ Reduces the number of models needed
- ◆ Reduced EMI

#### Specifications

| MODELS                         |     | CE-1003  | CE-1004    | CE-1005              |
|--------------------------------|-----|--|------------|----------------------|
| ITEMS                          |     |  |            |                      |
| Nominal Output Voltage         | VDC | 1.5 to 3.3   | 3.3 to 5.0 | 1 to 3.3             |
| Input Voltage Range            | VDC | 6 - 16   |            | 3 - 5.25             |
| Input Current (max)            | A   | 2.4  |            |                      |
| Output Voltage Tolerance       | %   | N/A  |            | ±3%                  |
| Ripple & Noise (typ) (pk - pk) | mV  | 100  | 100        | 50                   |
| Total Regulation (max)         | mV  | ±5%  | ±5%        | ±4%                  |
| Overload Protection (typ)      | A   | 2  | 2          | 3                    |
| Oversvoltage Protection        | -   | None   |            |                      |
| Remote Sense                   | -   | None   |            |                      |
| Remote On / Off (1)            | -   | ON = 2 - 6V; OFF= 0 - 0.6V   |            | ON = <0.5V; OFF= >2V |
| Sequencing                     | -   | None   |            |                      |
| Temperature (operating)        | °C  | -40 to +85°C (CE1003, 1004 derate linearly to 80% load above 70°C)   |            |                      |
| Temperature (storage)          | °C  | -40 to +85°C   |            |                      |
| Humidity (operating)           | -   | 10-90% RH Non condensing @ max temp 38°C   |            |                      |
| Humidity (storage)             | -   | Sealed packaging, see Technical Download   |            |                      |
| Cooling                        | -   | Convection or forced air   |            |                      |
| Isolation Voltage              | VDC | N/A  |            |                      |
| Vibration (non operating)      | -   | Frequency: 10-2000Hz, Sweep time: 4 minutes per cycle<br>Amplitude: 10G, 30 minutes each x, y, and z direction |            |                      |
| Shock                          | -   | Peak Acceleration: 100G, Duration: 6msec; three times each axis  |            |                      |
| Safety Agency Approvals        | -   | N/A  |            |                      |
| Weight (max)                   | g   | 1.8  | 1.8        | 1.7                  |
| Size                           | mm  | 18.3 x 12.3 x 4.5  |            |                      |
| Warranty                       | -   | 1 year   |            |                      |

Notes:  
(1) Pin 5

| <b>Model Selector</b> |                    |                          |                    |                  |
|-----------------------|--------------------|--------------------------|--------------------|------------------|
| Model                 | Output Voltage (V) | Output Adjust (V)        | Output Current (A) | Efficiency (typ) |
| CE-1003               | 1.5 - 3.3          | 1.5 - 3.3 <sup>(2)</sup> | 1.5                | 86.5%            |
| CE-1004               | 3.3 - 5            | 3.3 - 5 <sup>(2)</sup>   | 1.5                | 86.5%            |
| CE-1005               | 1.0 - 3.3          | 1.0 - 3.3                | 2.5 <sup>(3)</sup> | 91.5%            |

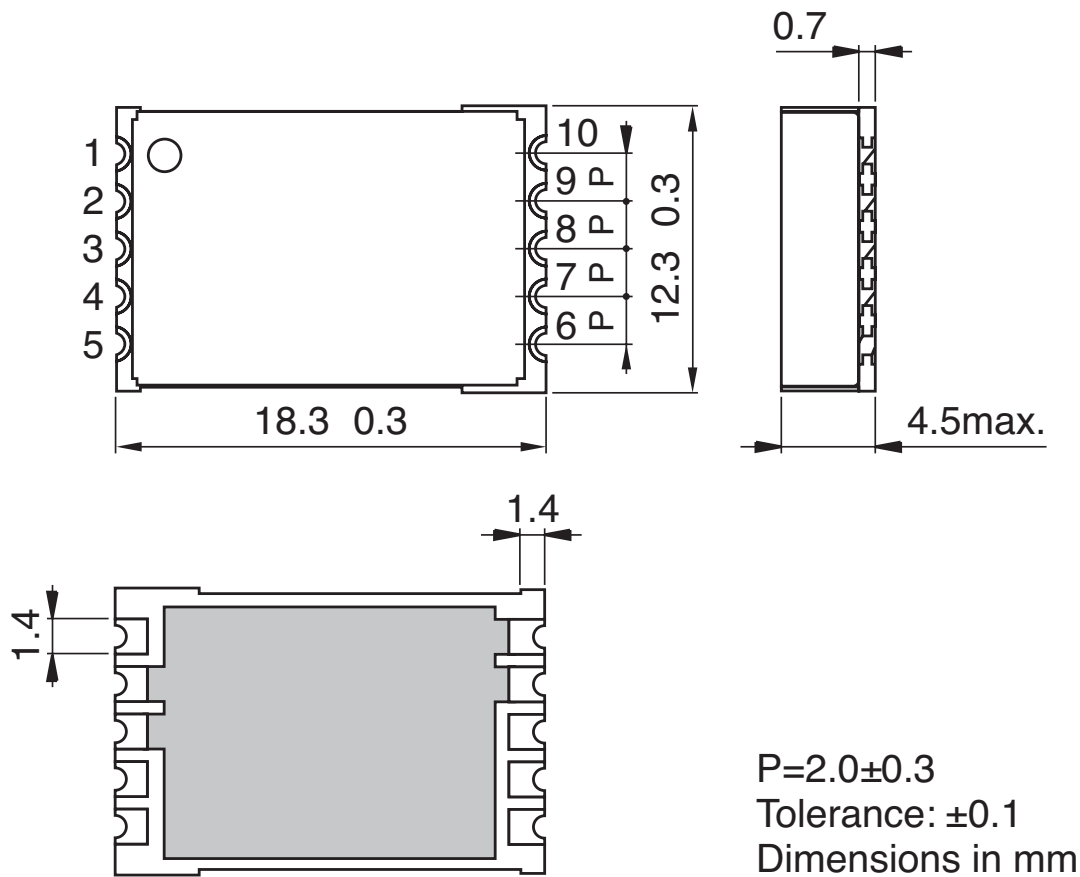
Notes:  
 (2) See Programming Table  
 (3) See CE-1005 Derating Table

| <b>CE-1005 Derating Table</b> |         |         |
|-------------------------------|---------|---------|
| Vout                          | 3.3 Vin | 5.0 Vin |
| 1.0                           | 1.75A   | 1.5A    |
| 1.2                           | 1.85A   | 1.65A   |
| 1.5                           | 2.00A   | 1.85A   |
| 1.8                           | 2.15A   | 2.0A    |
| 2.0                           | 2.25A   | 2.2A    |
| 2.5                           | 2.50A   | 2.5A    |
| 3.3                           | -       | 2.5A    |

| <b>CE-1004, 1005 Programming Table</b> |       |       |                       |         |
|--|-------|-------|-----------------------|---------|
| Pin 7                                  | Pin 8 | Pin 9 | Output Voltage (Vout) |         |
|  |       |       | CE-1003               | CE-1004 |
| 0                                      | 0     | 0     | 3.3                   | 5.0     |
| 0                                      | 0     | 1     | 3.0                   | 4.8     |
| 0                                      | 1     | 0     | 2.8                   | 4.5     |
| 0                                      | 1     | 1     | 2.5                   | 4.3     |
| 1                                      | 0     | 0     | 2.3                   | 4.0     |
| 1                                      | 0     | 1     | 2.0                   | 3.8     |
| 1                                      | 1     | 0     | 1.8                   | 3.5     |
| 1                                      | 1     | 1     | 1.5                   | 3.3     |

0 = Short to GND  
 1 = Open  
 See web site for detailed specifications

**Outline Drawing**



| <b>Pinout</b> |                    |               |
|---------------|--------------------|---------------|
| Pin           | CE-1003<br>CE-1004 | CE-1005       |
| 1             | Vin                | +V input      |
| 2             | Vin                | +V input      |
| 3             | GND                | -V input      |
| 4             | GND                | -V input      |
| 5             | On / Off           | Remote On/Off |
| 6             | GND                | -V output     |
| 7             | GND                | -V output     |
| 8             | Vset               | Output trim   |
| 9             | Vout               | +V output     |
| 10            | Vout               | +V output     |

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