

DC to DC Converters

Non-insulation, 8-pin SMD Type, 1.2W Output

Conformity to RoHS Directive

CE-3101 Series

SPECIFICATIONS AND STANDARDS

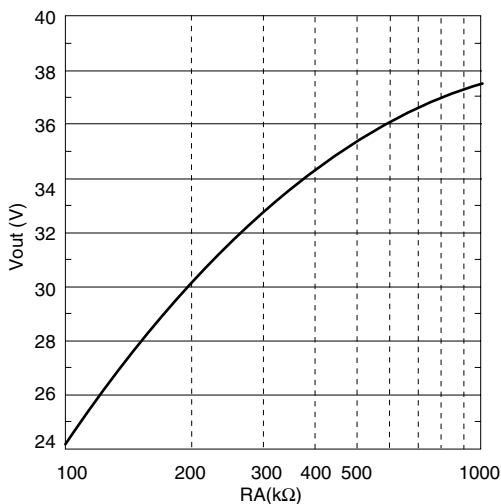
| | | |
|--|---------|-----------------------|
| Part No. | CE-3101 | |
| Maximum output power | W | 1.2 |
| Input conditions | | |
| Input voltage E _{dc} | V | +4.5 to +5.5(5V typ.) |
| Efficiency(typ.) ^{*1} | % | 72 |
| Output characteristics | | |
| Output voltage E _{dc} | V | +40 |
| Maximum output current | mA | 30 |
| Output voltage setting deviation(max.) | % | ±4 |
| Input variation(max.) | % | ±1 |
| Load variation(max.) | % | ±1 |
| Temperature variation(max.) | % | ±1.5 |
| Ripple noise E _{p-p} (typ.) ^{*1, *2} | mV | 250 |

^{*1} Typical input voltage, maximum output current, ambient temperature 25°C.

^{*2} Measuring bandwidth: 20MHz

Output ripple noise is measured after connection of the indicated external capacitor C_o to the output terminals.

OUTPUT VOLTAGE VARIABLE CHARACTERISTICS



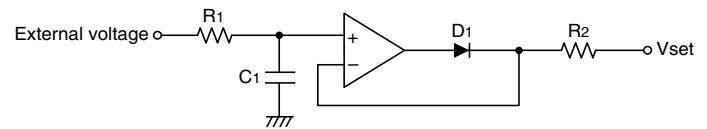
PACKAGING STYLE AND QUANTITY

- Tray(1 layer: 50 pieces, 1 carton: 450 pieces max.)
- Taping(500 pieces)

OUTPUT VOLTAGE CONTROL

[EXTERNAL APPLIED VOLTAGE METHOD]

An external voltage is applied by the external circuit below. This controls the output voltage(V_{out}).



$$V_{out} = [0.5769 - (\text{External voltage} - 0.75) / R_2] \times 68 + 0.75$$

Voltage: V

Resistance: kΩ

R₁, C₁: For removal of line noise

D₁: Fast recovery diode

The external voltage range should be determined by the following expression:

$$\text{External voltage} < R_2 \times 1 \text{ mA} + 2.5 \text{ (Unit: V)}$$

[EXTERNAL RESISTANCE METHOD]: Refer to OUTPUT VOLTAGE VARIABLE CHARACTERISTICS

An external resistance R_A is placed between terminal No. 5(V_{out}) and No.6(V_{set}). This controls the output voltage(V_{out}). Voltage changes per the following equation.

$$V_{out} = 0.5769 \times [68 \times R_A / (69.3 + R_A)] + 0.75$$

Voltage: V

Resistance: kΩ

Recommended resistance range is 100 to 1000 kΩ.

RECOMMENDED SOLDERING CONDITIONS

Method: Infrared(or hot air) reflow method

Reflow temperature and time: 245°C max.

: over 225°C, 50s min.

Preheating temperature and time: 150 to 180°C, 100s min.

Reflow cycle: 1 time(Vibrations should be avoided during reflow.)

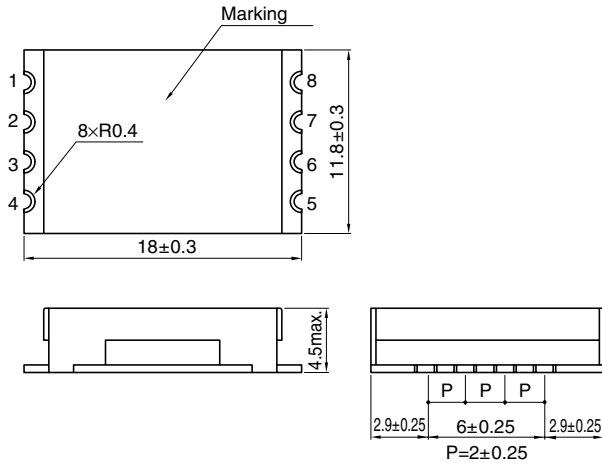
PRECAUTIONS

- Install the components according to CIRCUIT DIAGRAM.
- This product operates only after the input-capacitor is connected.
- Parallel operation to increase output current is not possible.
- Input fuse
A fuse should be connected to the input with a current rating 3 times that of the rated(normal) input current.
- The rise time of the input voltage must be 40ms max.
- It is recommended that the external input condenser have low impedance (such as ceramic condensers). Otherwise, if there is a large input ripple, the converter may not start up normally.

• Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

• All specifications are subject to change without notice.

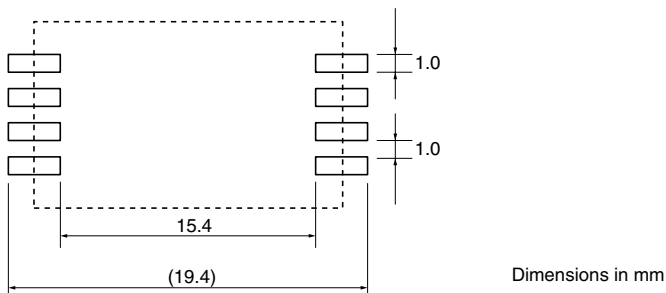
SHAPES AND DIMENSIONS



Dimensions in mm

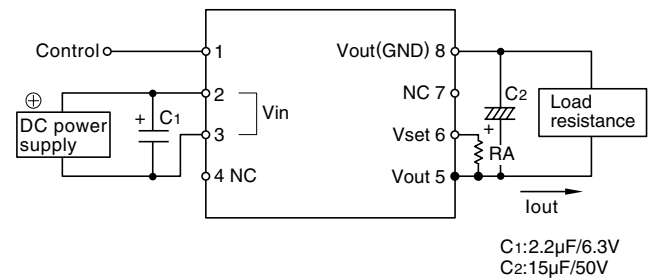


RECOMMENDED PC BOARD PATTERN



Dimensions in mm

CIRCUIT DIAGRAM



Oscillating method: Stable frequency method
Oscillating frequency: Approx. 400kHz
MTTF: 270Fit(3700000h)

TERMINAL CONNECTION

| | | |
|-------|------------|----------------------------|
| No. 1 | Control | ON/OFF control |
| No. 2 | +Vin | Input voltage(4.4 to 5.5V) |
| No. 3 | -Vin(GND) | Input(GND) |
| No. 4 | NC | |
| No. 5 | +Vout | Output(40V) |
| No. 6 | Vset | Output voltage adjustable |
| No. 7 | NC | |
| No. 8 | -Vout(GND) | Output(GND) |

- Terminal No.3 and No.8 are connected internally.
- Control voltage
High level($V_{in}-0.6$ to V_{in} , or open): Output OFF
Low level(0 to $V_{in}-2.5V$): Output ON
- Control current: 150 μ A max.

COMMON SPECIFICATIONS

| | | |
|-----------------------------|-------|--|
| Auxiliary functions | | |
| Overcurrent protection | | Yes |
| Remote ON-OFF | | Yes(Latch) |
| Constructions | | |
| External dimensions | mm | 18×4.5×11.8(W×H×D) |
| Weight | g | 1.5 |
| Temperature and humidity | | |
| Operating temperature range | °C | -10 to +60 |
| Storage temperature range | °C | -30 to +85 |
| Operating humidity range | (%)RH | 20 to 95[Maximum wet-bulb temperature: 38°C, without dewing] |
| Storage humidity range | (%)RH | 20 to 95[Maximum wet-bulb temperature: 38°C, without dewing] |