

Non-insulation, 8-pin SMD type, 1.2W output

TDK DC-DC Converter

CE-3101

SPECIFICATIONS AND STANDARDS

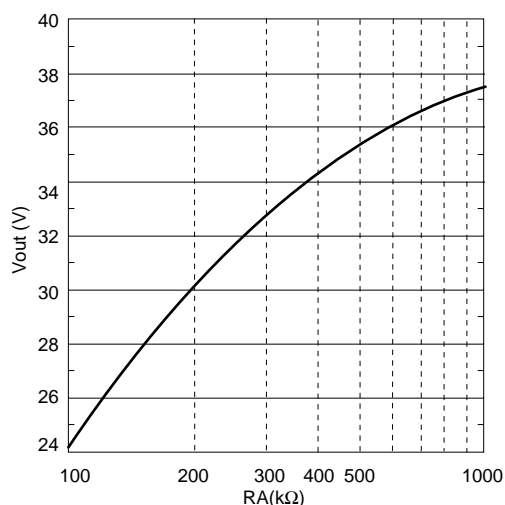
PART NO.		CE-3101
Maximum output power	W	1.2
INPUT CONDITIONS		
Input voltage E _{dc}	V	+4.5 to +5.5(5V typ.)
Efficiency(typ.) ^{*1}	%	72
OUTPUT CHARACTERISTICS		
Output voltage E _{dc}	V	+40
Maximum output current	mA	30
Output voltage setting deviation(max.)	%	±4
Input variation(max.)	%	±1
Load variation(max.)	%	±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 frequency: 20MHz

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

OUTPUT VOLTAGE VARIABLE CHARACTERISTICS



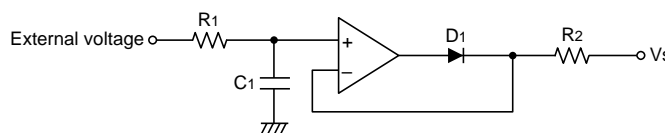
PACKAGING STYLE AND QUANTITY

- 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}).



$$V_{out} = [0.5769 - (\text{External voltage} - 0.75) / R2] \times 68 + 0.75$$

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:

$$\text{External voltage} < R2 \times 1\text{mA} + 2.5 (\text{Unit: V})$$

[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 : 230°C max., 5s min.

: over 200°C, 40s min.

Preheating temperature and time: 130 to 160°C, 90s min.

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

PRECAUTIONS

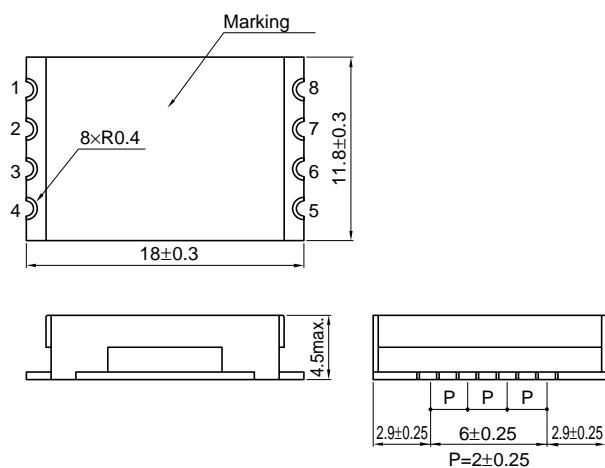
- Install the components according to CIRCUIT DIAGRAM.
- This product operates only after the input-capacitor is connected.
- Parallel operation to increase output current is not possible.
- **Input fuse**
A fuse should be connected to the input with a current rating 3 times that of the rated(normal) input current.

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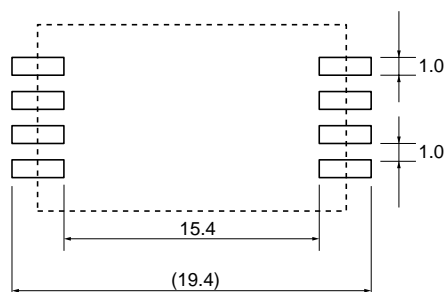
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SHAPES AND DIMENSIONS



RECOMMENDED PC BOARD PATTERN



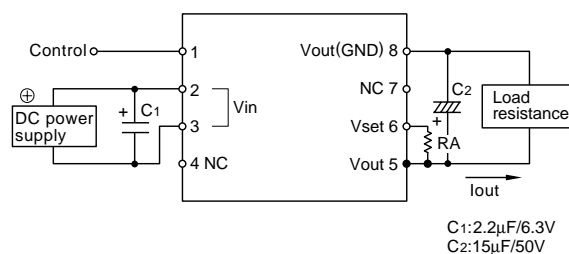
Dimensions in mm

Oscillating method: Stable frequency method

Oscillating frequency: Approx. 400kHz

MTTF: 270Fit(3700000h)

CIRCUIT DIAGRAM



Terminal connection

No.	Terminal	Description
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: 150µA max.

COMMON SPECIFICATIONS

AUXILIARY FUNCTIONS

Overcurrent protection	Yes(Latch)
Remote ON-OFF	Yes

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]