Non-insulation type, For telephone, +5V and ±5V outputs

TDK DC-DC Converter

CE-5000 SERIES

SPECIFICATIONS AND STANDARDS

PART NO.		CE-5028	CE-5029	CE-5050	CE-5150
Maximum output power	W	1.5	2.5	2.5	5
INPUT CONDITIONS					
Input voltage Edc	V	+10 to +60		–10 to –60	+24 to +60
Efficiency(typ.)*1	%	78	76	80	83
OUTPUT CHARACTERISTICS					
Output voltage Edc	V	+5	+5	+5	+5
Maximum output current	mA	300	500	500	1000
Output voltage total variation(max.)	%	±5	±5	±5	±5
WEIGHT AND EXTERNAL DEVICES					
Weight	g	3.5	5	4.5	6.5
External device C_1		68µF/63V	68µF/63V	68µF/63V	68µF/63V
External device C_2		330µF/6.3V	680µF/6.3V	—	—
External device C_3		180µF/6.3V	390µF/6.3V	—	—
External device C_4		—	—	—	—
External device C_5		—	—	—	—
External device L(Available for equivalent)		EL0607-220K	TSL0707-470K	—	—

PART NO.		CE-5211	CE-5221	CE-5268	CE-5222
Maximum output power	W	3	4.5	2	4.5
INPUT CONDITIONS					
Input voltage Edc	V	+10 to +30		+24 to +60	+20 to +60
Efficiency(typ.)*1	%	72	74	70	73
OUTPUT CHARACTERISTICS					
Output voltage Edc	V	±5	±5	±5	±5
Output current range(+5V output)	mA	30 to 450	50 to 750	25 to 280	50 to 750
Output current range(–5V output)	mA	10 to 150	10 to 150	8 to 115	10 to 150
Output voltage total variation(max.)	%	±5	±5	±5	±5
WEIGHT AND EXTERNAL DEVICES					
Weight	g	5	5	5	5
External device C_1		100µF/50V	180µF/50V	56µF/80V	82µF/80V
External device C_2		680µF/6.3V	1200µF/6.3V	680µF/6.3V	1200µF/6.3V
External device C_3		470µF/6.3V	560µF/6.3V	470µF/6.3V	560µF/6.3V
External device C_4		220µF/16V	220µF/16V	220µF/16V	220µF/16V
External device C_5		150µF/6.3V	150µF/6.3V	150µF/6.3V	150µF/6.3V
External device L(Available for equivalent)		TSL0707-470K	TSL0707-220K	EL0607-220K	TSL0707-220K

*1 Input voltage(listed below), maximum output current.
+36V(CE-5028, CE-5029), –36V(CE-5050), +24V(CE-5150, CE-5211, CE-5221, CE-5222, CE-5268)

Non-insulation type, For telephone, +5V and ±5V outputs

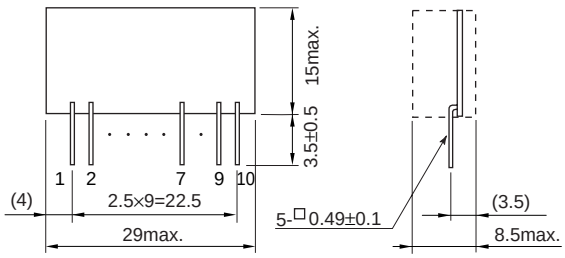
TDK DC-DC Converter

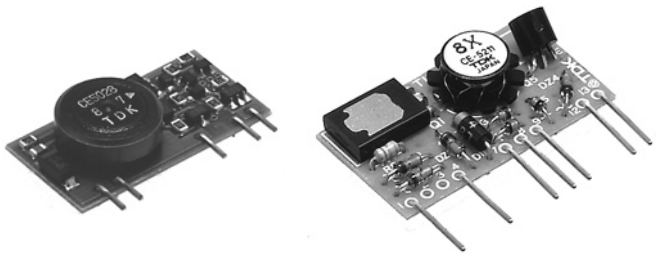
CE-5000 SERIES

SHAPES AND DIMENSIONS

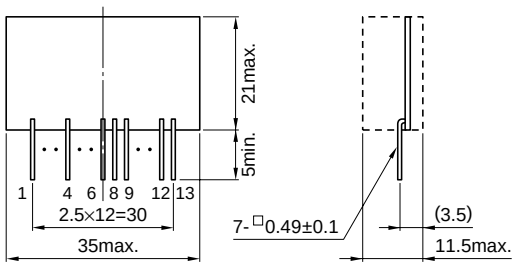
+5V SINGLE OUTPUT TYPE

CE-5028





CE-5029



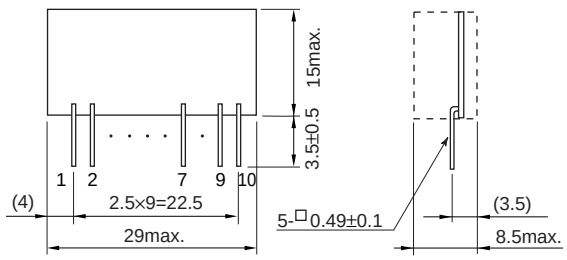
Terminal connection

	CE-5028*1	CE-5029*2
No.1	Vout(–)	+Vin
No.2	Vout(+5V)	—
No.4	—	–Vin
No.7	–Vin	Vout(–)
No.8	—	Vout(+5V)
No.9	Vout sense	Vout sense
No.10	+Vin	—
No.12	—	N.C
No.13	—	N.C

*1 Terminal No.1 and No.7 are connected internally(GND).

*2 Terminal No.4 and No.7 are connected internally(GND).

±5V 2-OUTPUT TYPE



A dimension

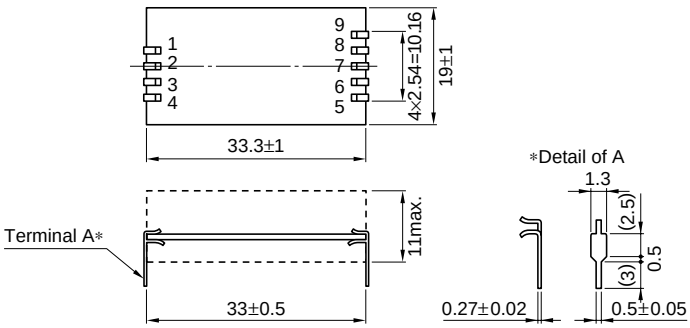
CE-5211	10max.
CE-5221	11.5max.
CE-5222	11.5max.
CE-5268	11.5max.

Terminal connection

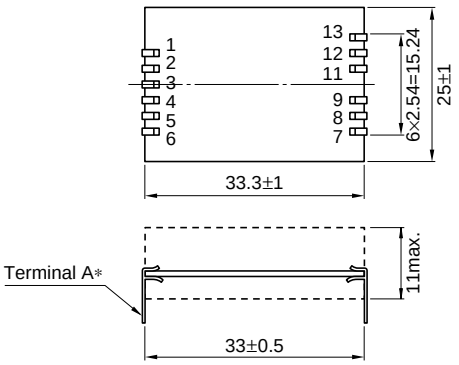
No.1	+Vin
No.4	–Vin
No.7	Vout common
No.8	Vout1(+5V)
No.9	Vout1 sense
No.12	Vout2(–5V)
No.13	Vout2

• Terminal No. 4 and No.7 are connected internally(GND).

CE-5050



CE-5150



• Terminal positions are based on a standard pitch.
Tolerance: ±0.2
Dimensions in mm

	CE-5050*1	CE-5150*2
No.1	+Vin(0V)	+Vin(48V)
No.2	–Vin(–48V)	+Vin(48V)
No.3	N.C	–Vin(0V)
No.4	N.C	–Vin(0V)
No.5	Vout(+5V)	N.C
No.6	Vout(+5V)	N.C
No.7	N.C	Vout(0V)
No.8	Vout(0V)	Vout(0V)
No.9	Vout(0V)	Vout(0V)
No.11	—	Vout(+5V)
No.12	—	Vout(+5V)
No.13	—	Vout(+5V)

*1 Terminal No.1, 8 and No.9 are connected internally(GND).

*2 Terminal No.3, 4, 7 and No.8 are connected internally(GND).

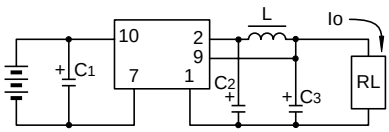
Non-insulation type, For telephone, +5V and ±5V outputs

TDK DC-DC Converter

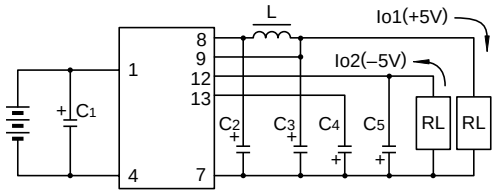
CE-5000 SERIES

CIRCUIT DIAGRAM

CE-5028

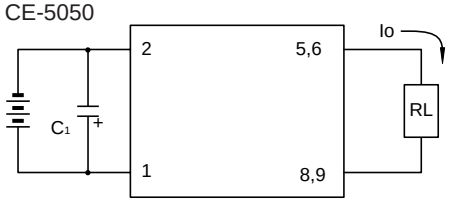


CE-5029, -5211, -5221, -5222, -5268



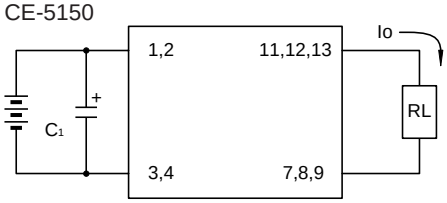
Part No.	C_1	C_2	C_3	C_4	C_5	L
CE-5028	68µF/63V	330µF/6.3V	180µF/6.3V	—	—	EL0607-220K(22µH)
CE-5029	68µF/63V	680µF/6.3V	390µF/6.3V	—	—	TSL0707-470K(47µH)
CE-5211	100µF/50V	680µF/6.3V	470µF/6.3V	220µF/16V	150µF/6.3V	TSL0707-470K(47µH)
CE-5221	180µF/50V	1200µF/6.3V	560µF/6.3V	220µF/16V	150µF/6.3V	TSL0707-220K(22µH)
CE-5222	82µF/80V	1200µF/6.3V	560µF/6.3V	220µF/16V	150µF/6.3V	TSL0707-220K(22µH)
CE-5268	56µF80V	680µF/6.3V	470µF/6.3V	220µF/16V	150µF/6.3V	EL0607-220K(22µH)

CE-5050



C_1: 63V, 68µF
• Built-in output capacitor

CE-5150



C_1: 63V, 68µF
• Built-in output capacitor
• Do not connect terminal No.5 and No.6.

Low input voltage, output stop function

Output voltage is not generated when the input voltage is equal to or lower than the operation start voltage (Vsd).
CE-5211, CE-5221: Vsd=+10±1V
CE-5050: Vsd=–8.7±1V or –21.5±1V (selectable)
CE-5222: Vsd=+20±2V
CE-5268, CE-5150: Vsd=+23±1V

Output short-circuit protection function

The output 1 (+5V) contains a protection circuit against a short circuit (automatic recovery).
The 2-output type does not contain the protection function in the –5V side.

Balance load

The load of the output 1 (I_{01}) and the load of the output 2 (I_{02}) should be used under the following conditions:

$I_{01}(+5V) > 2 \times I_{02}(-5V)$

PRECAUTIONS

- **Input fuse**
  A fuse should be connected to the input with a current rating 3 times that of the standard(normal) input current.
- Install the components according to CIRCUIT DIAGRAM.
- This product operates only after the input capacitor is connected.