

# Power Supplies

## DC to AC Inverters

### For 2 Bulb, 7W Diming

# CXA Series CXA-0231

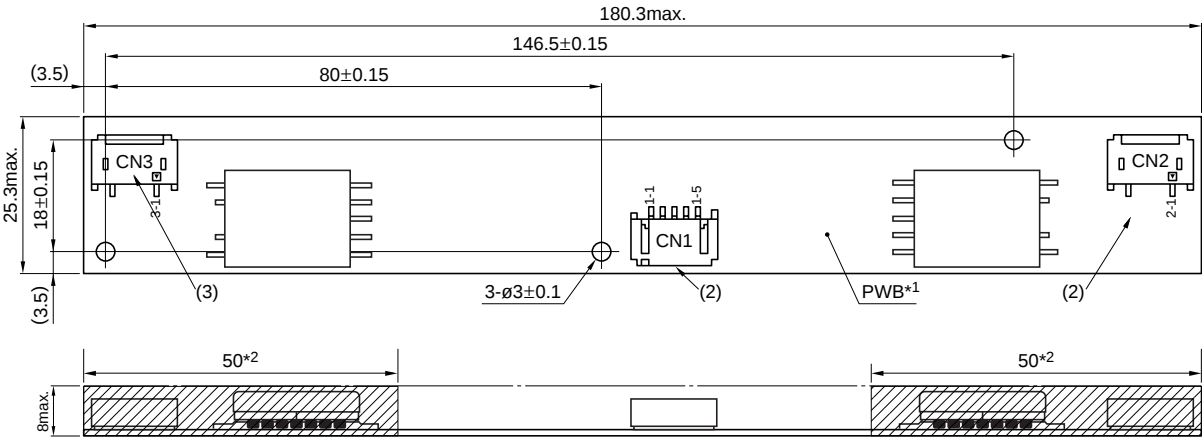
### FEATURES

- Features a built-in dimmer.
- Because they employ advanced output current control, fluctuations in input voltage, load, and distributed capacitance have virtually no effect on brightness.
- Because of built-in PWM circuit (Pulse Width Modulation circuit), dimming range is wider than earlier type products.
- Output open and short circuit conditions result in no damage, heat generation, or other difficulties.
- Built-in fuse assures a high degree of safety.
- Because high voltage electrodes are applied with silicon, possibility of troubles by dust is decreased.

### TEMPERATURE AND HUMIDITY RANGES

|                        |                                           |            |
|------------------------|-------------------------------------------|------------|
| Temperature range (°C) | Operating                                 | 0 to +70   |
|                        | Storage                                   | -30 to +85 |
| Humidity range (%)RH   | 95max.[Maximum wet-bulb temperature 38°C] |            |

### SHAPES AND DIMENSIONS



\*1 Substrate(PWB: Printed wiring board): Inflammable material UL94V-0(FR-4 or CEM-3) t=1mm  
\*2 : High voltage generating part (all area within 50mm from the edge of output side of the substrate)

Weight: 21g typ.

Dimensions in mm

| Connector manufacturer and type name |                                     |                  | No. of connector pin |
|--------------------------------------|-------------------------------------|------------------|----------------------|
| (1) Input connector                  | Japan Solderless Terminal Co., Ltd. | S5B-PH-SM3       | CN1                  |
| (2) Output connector                 | Japan Solderless Terminal Co., Ltd. | SM02(8.0)B-BHS-1 | CN2                  |
| (3) Output connector                 | Japan Solderless Terminal Co., Ltd. | SM02(8.0)B-BHS-1 | CN3                  |

### TERMINAL NUMBERS AND FUNCTIONS

#### CN1

| Terminal No. | Function                                                       | Symbol |
|--------------|----------------------------------------------------------------|--------|
| CN1-1        | Input voltage Edc:9.6 to 14.4V                                 | Vin    |
| CN1-2        | 0V                                                             | GND    |
| CN1-3        | Brightness dimmer voltage<br>Edc:0 to 3.4V (0V:Maximum dimmer) | Vbr    |
| CN1-4        | Used in the internal circuits, does not use                    | N.C.   |
| CN1-5        | remote operation voltage<br>Edc 0V:off/5 to 7V:on              | Vrmt   |

#### CN2

| Terminal No. | Function                            | Symbol |
|--------------|-------------------------------------|--------|
| CN2-1        | Output [High voltage] Irms:2 to 6mA | VHIGH1 |
| CN2-2        | —                                   | N.C.   |
| CN2-3        | Output[Low voltage]:(2V)            | VLOW1  |

#### CN3

| Terminal No. | Function                            | Symbol |
|--------------|-------------------------------------|--------|
| CN3-1        | Output [High voltage] Irms:2 to 6mA | VHIGH2 |
| CN3-2        | —                                   | N.C.   |
| CN3-3        | Output[Low voltage]:(2V)            | VLOW2  |

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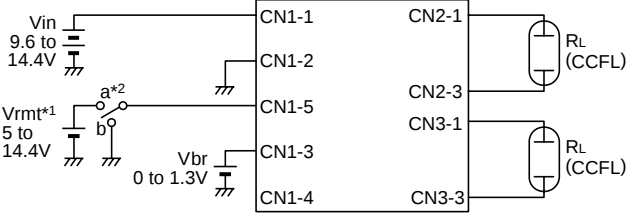
## ELECTRICAL CHARACTERISTICS

| Item                             | Unit |             | Specifications |      |      | Conditions |          |          |         |           | Brightness |
|----------------------------------|------|-------------|----------------|------|------|------------|----------|----------|---------|-----------|------------|
|                                  |      |             | min.           | typ. | max. | Vin(V)     | Vrmt(V)  | Vbr(V)*1 | Ta(°C)  | RL(kΩ)    |            |
| Output current Irms              | mA   | Iout1/Iout2 | 5.3            | 6    | 6.7  | 12±2.4     | 5±0.25   | 0        | 0 to 70 | 75 to 112 | Maximum    |
|                                  |      | Iout1/Iout2 | 5.5            | 6    | 6.5  | 12±0.6     | 5±0.25   | 0        | 25±1    | 95        | Maximum    |
|                                  |      | Iout1/Iout2 | 0.4            | 1.5  | 2.6  | 12±2.4     | 5±0.25   | 1.3±0.05 | 0 to 70 | 75 to 112 | Minimum    |
|                                  |      | Iout1/Iout2 | 0.6            | 1.5  | 2.4  | 12±0.6     | 5±0.25   | 1.3±0.05 | 25±1    | 95        | Minimum    |
|                                  |      | Iout1/Iout2 | —              | —    | 0    | 12±2.4     | 5±0.25   | 1.7±0.05 | 0 to 70 | 75 to 112 |            |
| Input current Idc                | A    | Iin1        | —              | 0.78 | 1.4  | 12±0.6     | 5±0.25   | 0 to 1.5 | 25±1    | 95        |            |
|                                  | mA   | Iin2        | —              | —    | 1    | 12±0.6     | 0 to 0.4 | 0 to 1.5 | 25±1    | 95        |            |
| Oscillation frequency            | kHz  | FL          | 53             | 60   | 69   | 12±0.6     | 5±0.25   | 0        | 0 to 70 | 75 to 112 |            |
| Open circuit output voltage Erms | V    | Vopen       | 1.5            | 1.7  | —    | 12±0.6     | 5±0.25   | 0        | 0 to 70 | ∞         |            |

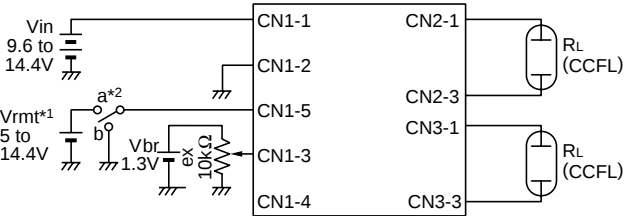
\*1 TDK recommend to settle the variable range of the blightness control voltage Vbr in the range of 0 to 1.3V.  
There is no problem when the blightness control voltage Vbr is settled in the range of 1.3 to 1.5V. However, there is a risk that unevenness of the blightness occurs when the lamp is used as a load. Please reconfirm the specifications to use this product.

## TYPICAL CONNECTIONS

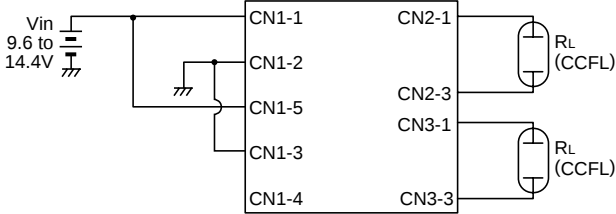
### EXAMPLE OF VOLTAGE DIMMER CONTROL



### EXAMPLE OF POTENTIOMETER DIMMER CONTROL

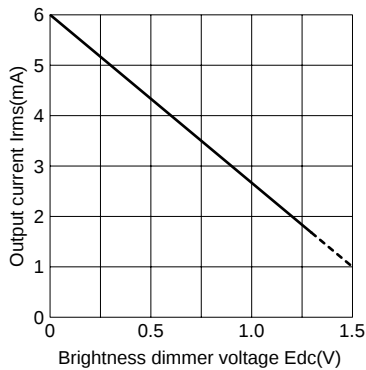


### NO DIMMER CONTROL



\*1 Vrmt (remote voltage) shall be ON after Vin was ON.  
\*2 SW a:ON, b:OFF

## OUTPUT CURRENT vs. BRIGHTNESS DIMMER VOLTAGE CHARACTERISTICS



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