

# DC to AC Inverters

Conformity to RoHS Directive

## Connector type, Dimming, 7W, for 2 Bulbs

### CXA Series CXA-M1112-VJ

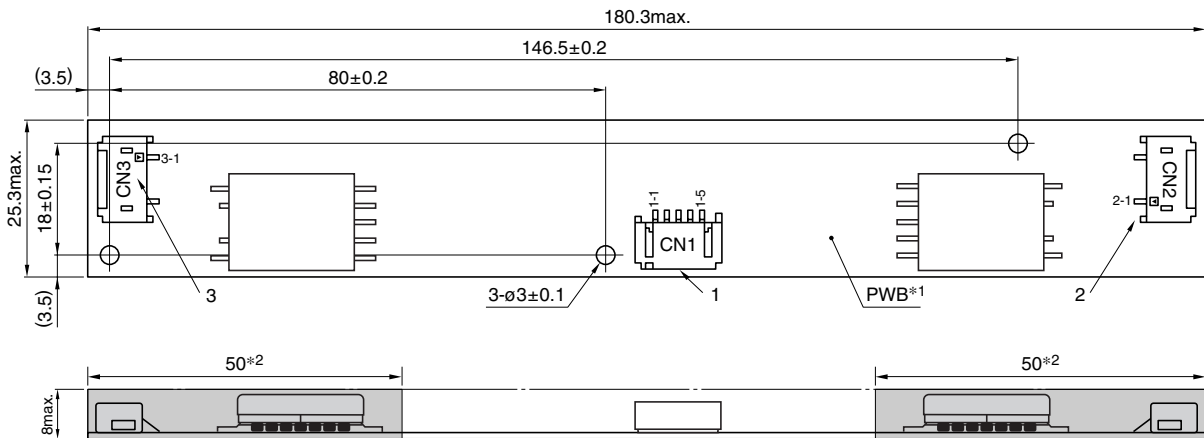
#### FEATURES

- The CXA-M1112-VJ is an inverter for cold cathode fluorescent lamps and 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.
- Output open and short circuit conditions result in no damage, heat generation, or other difficulties.
- The CXA-M1112-VJ has an overvoltage protection device and a temperature fuse built-in, thereby achieving a safety design.
- An alarm output function mounted on the CXA-M1112-VJ is useful to detect an occurrence of an error in lamps.
- Insulation is simplified due to flat backside surface of board.
- It is a product conforming to RoHS directive.

#### TEMPERATURE AND HUMIDITY RANGES

Temperature range (°C)	Operating	0 to +60
	Storage	−30 to +85
Humidity range(%)RH		95max.
		[Maximum wet-bulb temperature 38°C]

#### SHAPES AND DIMENSIONS



\*1 Substrate (PWB: Printed wiring board): Flame retardant UL94V-0 (FR-4 or CEM-3)  $t=1\text{mm}$

\*2 : High-voltage generator (The entire surface within a range of 50mm away from the end of the base in the output)

Weight: 21g typ.

Dimensions in mm

	Connector manufacturer's company and type			Symbol
1	Input connector	Japan Solderless Terminal Co., Ltd.	S5B-PH-SM4	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.	Functions	Symbol
CN1-1	Input voltage Edc: 8 to 20V 12V[nom.]	Vin
CN1-2	0V	GND
CN1-3	Brightness dimmer voltage Edc: 0 to 3.4V (Maximum brightness on 0V)	Vbr
CN1-4	Alarm output: 0V in abnormal state	Vst
CN1-5	Remote voltage Edc 0V: off/5 to 7V: on	Vrmt

##### CN3

Terminal No.	Functions	Symbol
CN3-1	Output 2[High voltage] Irms 2 to 5.5mA	V <sub>HIGH2</sub>
CN3-2	—	N.C.
CN3-3	Output 2[Low voltage] (2V)	V <sub>LOW2</sub>

##### CN2

Terminal No.	Functions	Symbol
CN2-1	Output 1[High voltage] Irms 2 to 5.5mA	V <sub>HIGH1</sub>
CN2-2	—	N.C.
CN2-3	Output 1[Low voltage] (2V)	V <sub>LOW1</sub>

- 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.

# CXA-M1112-VJ

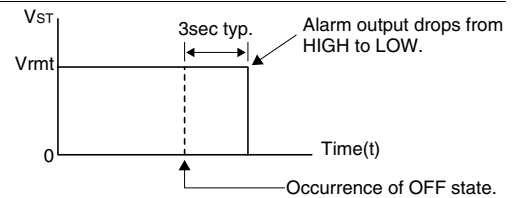
## ELECTRICAL CHARACTERISTICS

Items	Unit	Symbol	Specifications			Conditions						Brightness
			min.	typ.	max.	Vin(V)	Vrmt(V)	Vbr(V)*1	Ta(°C)	RL1(kΩ)	RL2(kΩ)	
Output current I <sub>rms</sub>	mA	I <sub>out1</sub> /I <sub>out2</sub>	4.6	5.5	6.3	8 to 20	5±0.25	0	0 to 60	90 to 120	90 to 120	Maximum
		I <sub>out1</sub> /I <sub>out2</sub>	4.9	5.5	6	12±1.2	5±0.25	0	25±5	110	110	Maximum
		I <sub>out1</sub> /I <sub>out2</sub>	—	2	2.5	8 to 20	5±0.25	3.5	0 to 60	335	335	Minimum
Input current I <sub>dc</sub>	A	I <sub>in</sub>	—	0.71	1.37	8 to 20	5±0.25	0 to 3.5	0 to 60	90 to 120	90 to 120	
Oscillation frequency	kHz	FL	30	35	40	8 to 20	5±0.25	0	0 to 60	110	110	
Open circuit output voltage E <sub>rms</sub>	V	V <sub>open</sub>	1400	1500	—	8 to 20	5±0.25	0 to 3.5	0 to 60	∞	∞	
Alarm output E <sub>dc</sub>	V	V <sub>ST</sub>	V <sub>rmt</sub> <sup>-0.5</sup>	V <sub>rmt</sub>	—	8 to 20	5±0.25	0 to 3.5	0 to 60	90 to 335	90 to 335	When lamps are normally turned on
			—	0	0.5	8 to 20	5±0.25	0 to 3.5	0 to 60	∞	∞	When lamps are abnormal (OFF state)
			—	0	0.5	8 to 20	5±0.25	0 to 3.5	0 to 60	90 to 335	∞	When lamps in one side only are turned on
			—	0	0.5	8 to 20	5±0.25	0 to 3.5	0 to 60	∞	90 to 335	When lamps in one side only are turned on
Alarm output delay time	sec	—	—	3*2	11	—	—	—	—	—	—	

\*1 V<sub>br</sub> also operates as a remote function as follows:

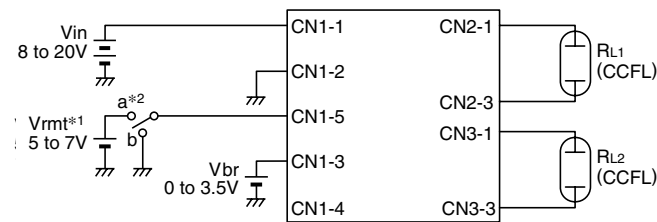
- 0 to 3.5V: Operated
- 4.5V or higher: Operation stopped

\*2 An alarm output is a detection terminal for detecting an OFF state of the lamps, with a delay time from an occurrence of the OFF state (See the diagram).  
For details of the alarm output, see the individual specifications.

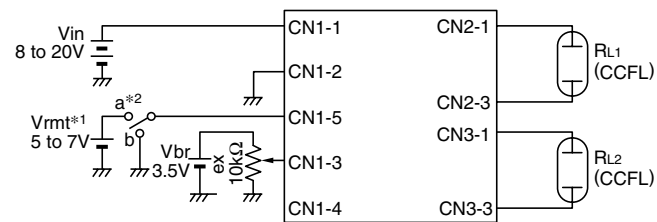


## TYPICAL CONNECTIONS

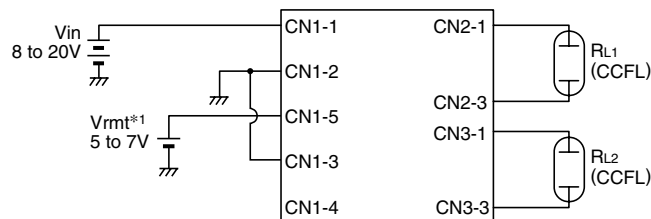
### EXAMPLE OF VOLTAGE DIMMER CONTROL



### EXAMPLE OF POTENTIOMETER DIMMER CONTROL



### NO DIMMER CONTROL (BRIGHTNESS MAX.)



\*1 Vrmt (remote voltage) shall be ON after Vin was ON.

\*2 SW a: on, b: off

## BRIGHTNESS DIMMER VOLTAGE-OUTPUT CURRENT CHARACTERISTICS

