

PIEZOELECTRIC INVERTER 1.0W/3.6V/500VAC/1mA

1. Scope

This applies to the CFL Inverter (cold-cathode tube inverter) HBL-0210.

2. Electrical Characteristics

a. Absolute Maximum Rating

Input voltage	6.5V MAX.
Max. output power	1.0W MAX.

b. Input/Output Characteristics

The measuring circuit and measuring method shall be as set forth in Section 3.  
(Unless otherwise specified,  $T_a = 25^\circ\text{C}$ )

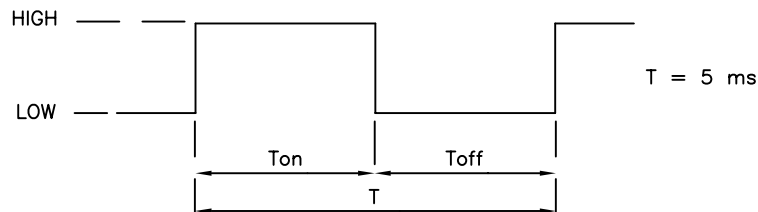
Values are those obtained 3 minutes after the power is turned on.

Item	Specification
Input Voltage	3.0V ~ 5.5V
Rated tube current	1.0mA <sub>rms</sub> ± 10%
Frequency	160KHz ± 10%
Output open voltage	900V <sub>rms</sub> min (at ambient temperature 0°C)
Input current	200mA MAX (Vin = 3.0V Equivalent load resistance 380KΩ)
ON/OFF function	ON: ON/OFF terminal signal HIGH (2.5V ~ 5.5V) OFF: ON/OFF terminal signal LOW (0.7V MAX) (To turn on the inverter, apply voltage to the Vin terminal, then turn on the ON/OFF terminal.)
Vcc voltage	5.0V ± 5%
Vcc current	15mA MAX.

c. Dimming

To use the dimming function, apply the following signal to the ON/OFF terminal, with a Duty rate of 20% ~ 95%.

No Dimming function with 100% Duty rate (always High)

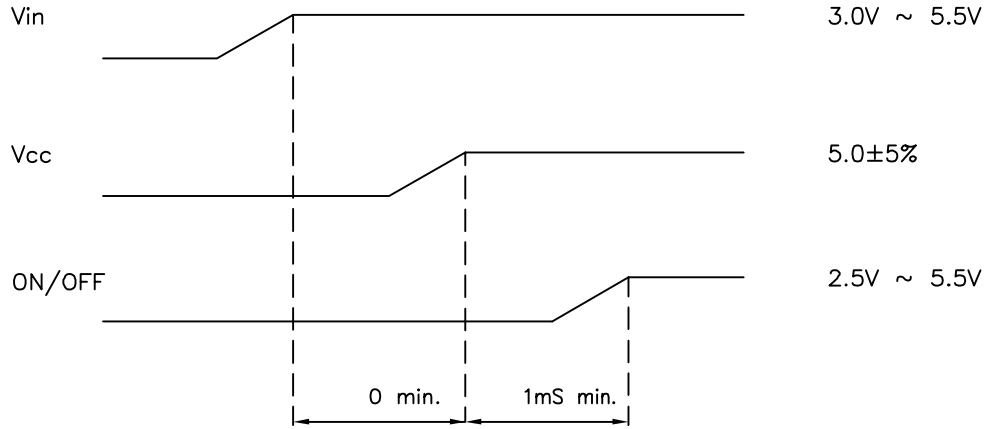


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		HBL-0210	1.0W/3.6V/500VAC/1mA	
DOCUMENT NUMBER:		P-A3-12258		

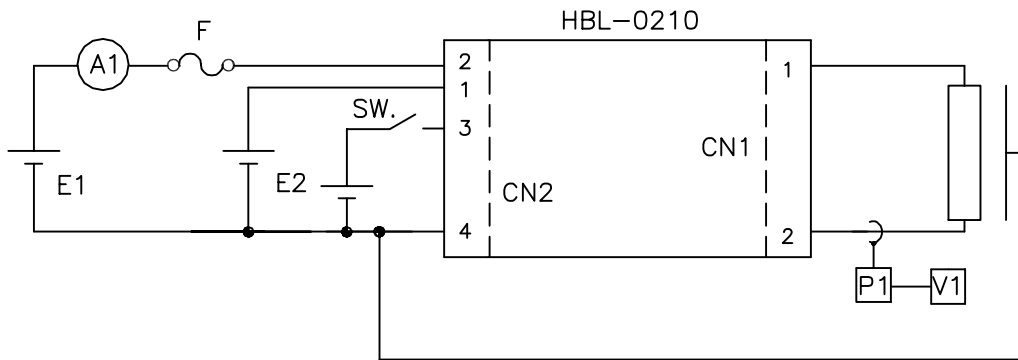
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- d. Standby Current  
5 $\mu$ A MAX @ ON/OFF terminal signal LOW, Vin=3.0V ~ 5.5V
- e. Input Sequence



3. Measuring Circuit and Method for Electrical Characteristic



- E1: DC regulated power supply                      3.0V ~ 5.5V
- E2: DC regulated power supply                      5.0V $\pm$ 5%
- E3: DC regulated power supply                      2.5V ~ 5.5V
- V1: RMS voltmeter                                      3400B (YHP) or equivalent
- A1: DC ammeter                                        Type 2011 Class 0.5 (YEW) or equivalent
- P1: Probe    P6021 (Tektronix) or equivalent
- F1: Fuse     CCP2E25 (KOA)
- L: Specified CCFL tube or equivalent resistance ( $\approx$ 161k $\Omega$ )

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4. Ambient Conditions

- a. Temperature  
 Operating temperature: 0°C ~ 60°C  
 Storage temperature: -20°C ~ 70°C
- b. Humidity  
 Operating humidity: 20% ~ 80% (No condensation)  
 Storage humidity: 5% ~ 90% (No condensation)

5. Reliability

The reliability has been verified on the following items

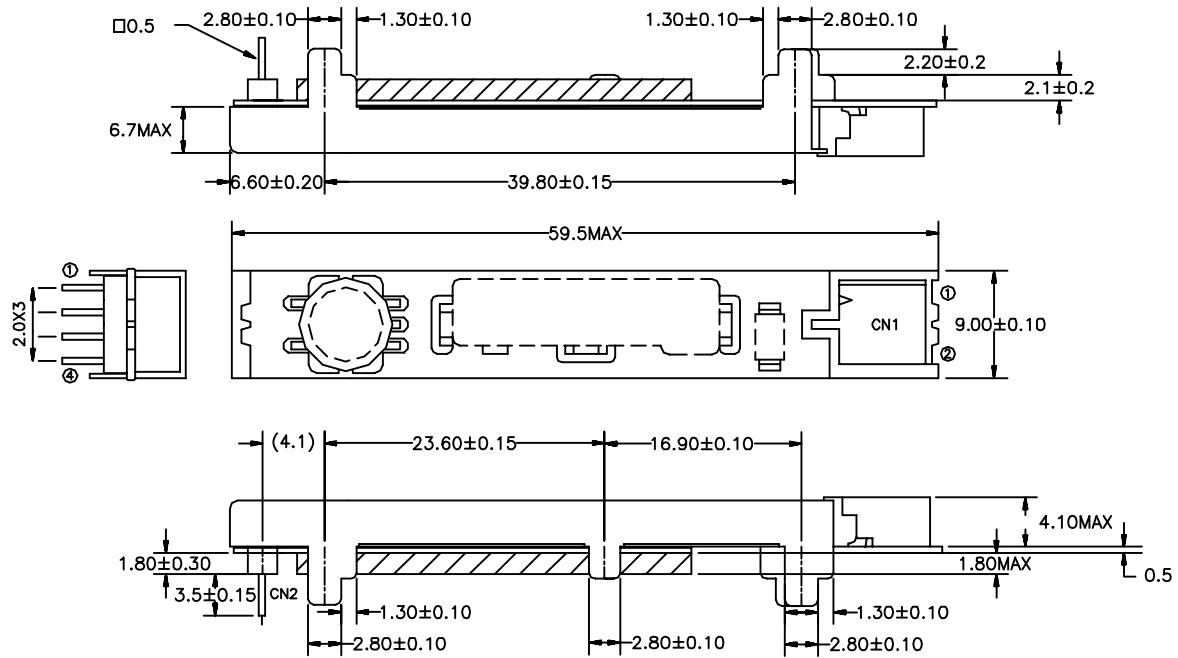
Item	Specification
High temp. storage	Ambient temperature 70°C, 240H
Low temp. storage	Ambient temperature -20°C, 240H
High temp. and humidity storage	Ambient temperature 40°C, Humidity 90%, 240H
Temperature Cycle	-20°C ~ 70°C, 5 cycle
High temperature operation	Ambient temperature 60°C, input voltage 5.5V, output current 2.0Arms, 500H (Equivalent load resistance)
ON/OFF test	1 min:ON, 1min:OFF, 50000 times (Input voltage 5.5V, output current 2.0Arms, Equivalent load resistance)
Vibration	Acceleration 3G, frequency 10~ 55Hz, sweep 45 min. Once in each of X, Y, and Z directions.
Shock	Acceleration 80G, acting time 11ms, 3 times in each of X, Y, and Z directions.

After the end of each test, leave the product at room temperature and humidity for 24 hours. The Electrical and Mechanical characteristics shall remain within spec.

6. Precautions for static electricity

When transporting this product, use materials that will not develop an electrical charge. When handling this product, be sure to wear antistatic wrist bands or other protective equipment to prevent the product from being destroyed by any electric charge.

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CN1: HV-2P-HF (JAE)

Mating Connector: HV-2S-C1 (JAE)

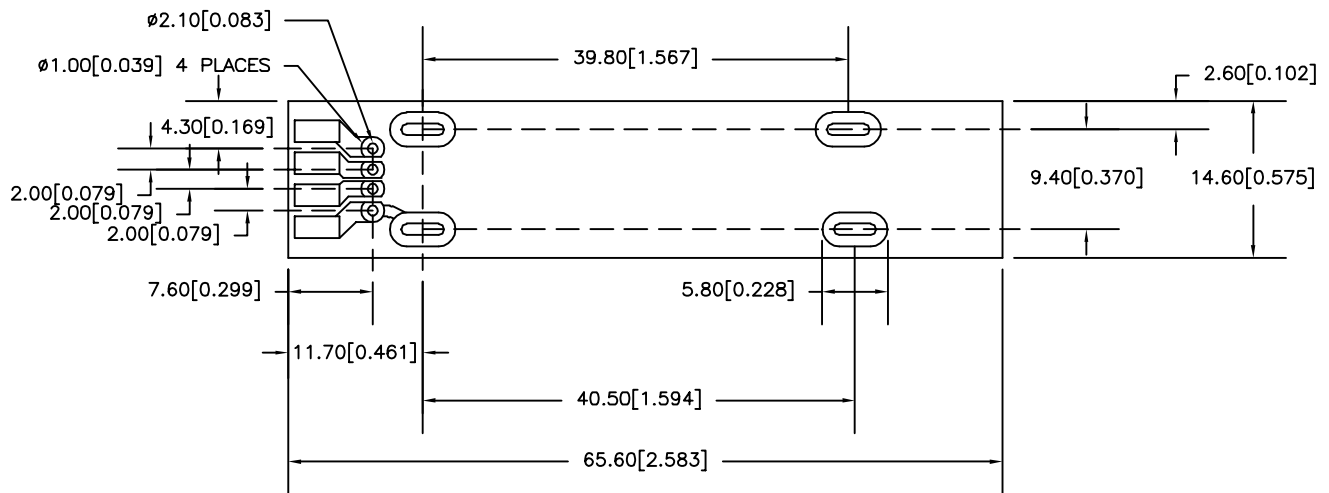
- ① High
- ② Low

IL-Z-C1-A-7000 (Contact)

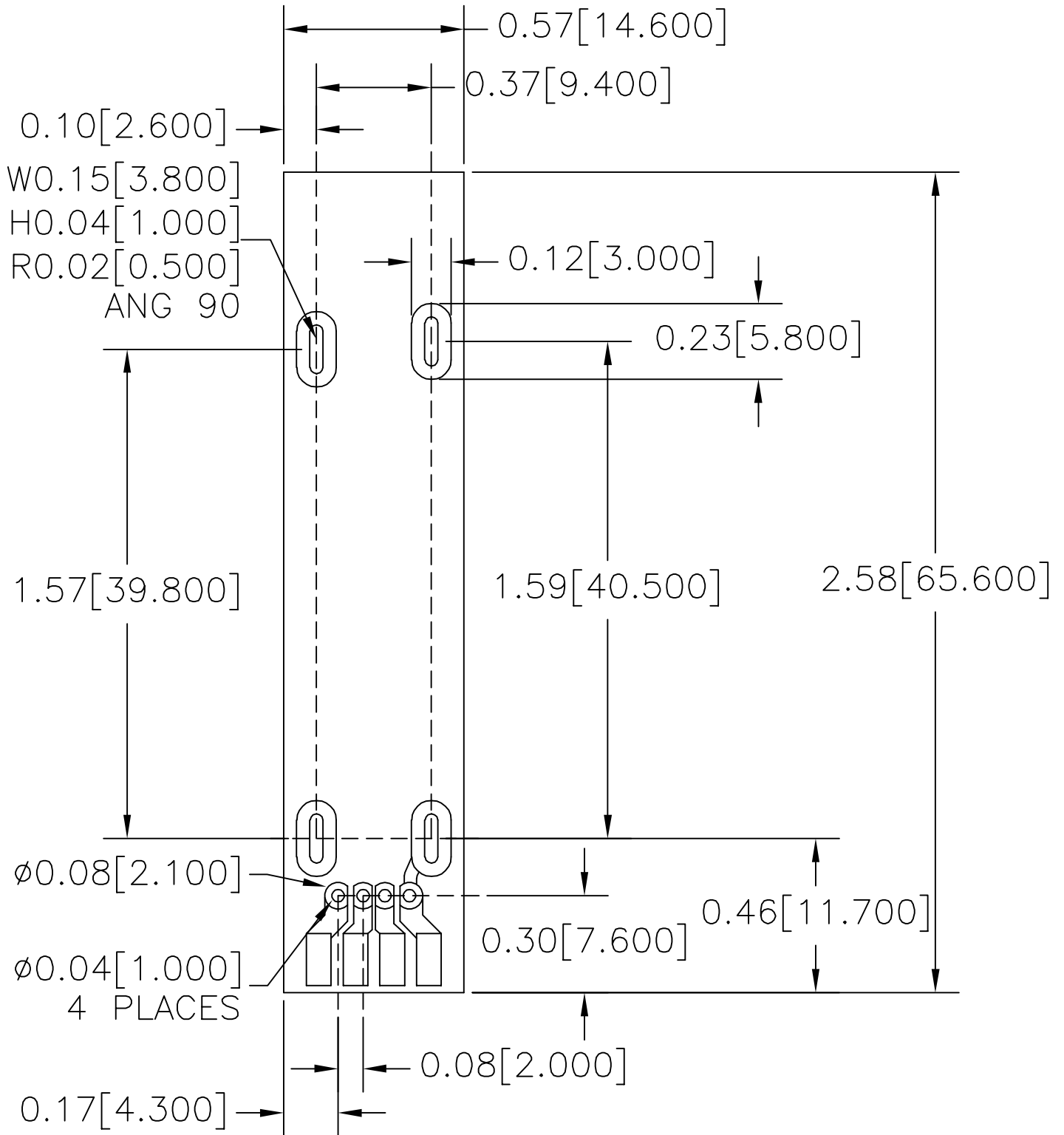
CN2: A4B-4PA-2DSA (HRS) Through Hole Soldering

- ① Vcc
- ② Vin
- ③ ON/OFF
- ④ GND

RECOMMENDED BOARD LAYOUT



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