

DESCRIPTION :

This low profile DC to AC Inverter is developed for dual lamps, low power LCD back-light. Application includes industrial PC and LCD monitor.

Applicable LCD; NL8060BC31-20 / NL8060BC31-17 (NEC)
 Lamp Voltage 600Vrms
 Lamp Current 5mA rms
 Lamp Start Up Voltage 1250Vrms (Vin : 12V)



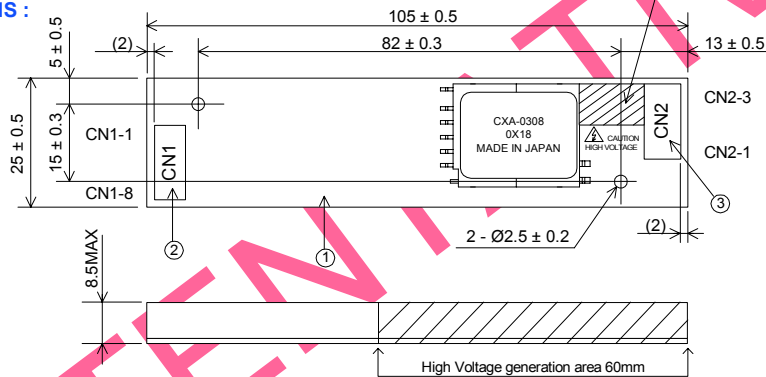
FEATURES :

- Wide operating temperature range
- Alarm signal function
- PWM dimming type.
- Current Feedback Circuit
- Silicon Coating in High Voltage area

TEMPERATURE & HUMIDITY :

Operating Temperature Range -10 °C ~ +70 °C
 Storage Temperature Range -30 °C ~ +85 °C
 Humidity 95 %RH max

DIMENSIONS :



Unit : mm
 Weight :20 (g) typ.

| No. | Part Description | Qty. | Note |
|-----|------------------|------|----------------------|
| 1 | PWB | 1 | UL94V-0 t=1.0mm |
| 2 | Connector CN1 | 1 | 53261-0890 (Molex) |
| 3 | Connector CN2 | 1 | SM03(4.0)B-BHS (JST) |

| CN1 : 53261-0890 (Molex) | | |
|--------------------------|-------------------|-----------------------------------|
| Pin | Symbol | Note |
| CN1-1 | Vin | 10.8 ~ 13.2V |
| CN1-2 | | |
| CN1-3 | GND | 0 V |
| CN1-4 | | |
| CN1-5 | Vrmt | 0 ~ 0.4V : OFF 2.5V ~ Vin : ON |
| CN1-6 | Vbr1 / Rbr1 | 0 ~ 2.5V / 0 ~ 50kΩ |
| CN1-7 | Vbr2 / Rbr2 | GND / 0 ~ 50kΩ |
| CN1-8 | Vst ^{*1} | 0V / 5V |

| CN2 : SM03(4.0)B-BHS (JST) | | |
|----------------------------|--------|-------------------|
| Pin | Symbol | Note |
| CN2-1 | Vlow | (2V) |
| CN2-2 | Vhigh2 | 600Vrms (5mA rms) |
| CN2-3 | Vhigh1 | 600Vrms (5mA rms) |

*1. This is an output pin and it is active high (+5V) if any Lamp opens / fails

General Information Tel : +81-3-5201-7206 (Japan)
 Tel : +1-847-390-4439 (USA)
 Tel : +44-118-921-6206 (EU)

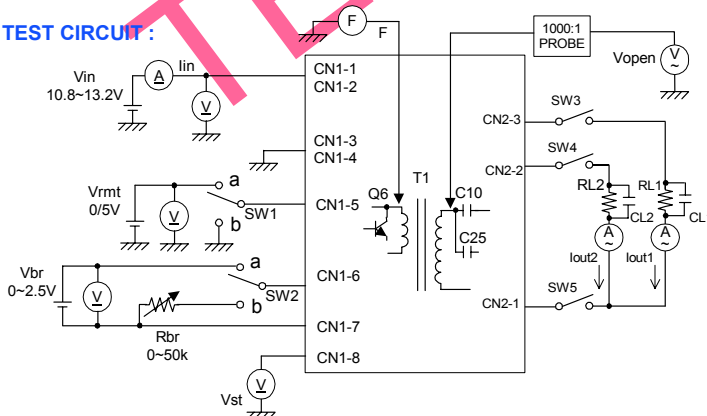
ELECTRICAL CHARACTERISTICS :

| Parameters | Symbol | Conditions | | | | | Specifications | | | Unit | Note |
|--------------------------|---------------|------------|----------|-------------|-----------|--------------------------------------------|----------------|------|------|-------|-----------------|
| | | Vin (V) | Vrmt (V) | Vbr / VR | Ta (°C) | RL1 (kΩ) // CL1(pF) RL2 (kΩ) // CL2(pF) | min. | typ. | max. | | |
| Output Current | Iout1 / Iout2 | 12 ± 1.2 | 5 ± 0.25 | 0V / 0 Ω | -10 ~ +70 | TBD TBD | TBD | 5.0 | TBD | mArms | Max Brightness. |
| | | 12 ± 0.6 | 5 ± 0.25 | 0V / 0 Ω | 23 ± 5 | TBD TBD | TBD | 5.0 | TBD | mArms | |
| | | 12 ± 0.6 | 5 ± 0.25 | 2.5V / 50kΩ | 23 ± 5 | TBD TBD | TBD | 2.0 | TBD | mArms | Min Brightness. |
| Input Current 1 | Iin1 | 12 ± 0.6 | 5 ± 0.25 | 0V / 0 Ω | -10 ~ +70 | TBD TBD | - | TBD | TBD | Adc | |
| Input Current 2 | Iin2 | 12 ± 0.6 | 0 ± 0.25 | 0V / 0 Ω | -10 ~ +70 | TBD TBD | - | - | 1 | mAdc | |
| Frequency | F1 | 12 ± 0.6 | 5 ± 0.25 | 0V / 0 Ω | -10 ~ +70 | TBD TBD | TBD | (55) | TBD | kHz | |
| Frequency (Duty) | F2 | 12 ± 0.6 | 5 ± 0.25 | 2.5V / 50kΩ | -10 ~ +70 | TBD TBD | TBD | 270 | TBD | Hz | |
| Open Voltage | Vopen | 10.8 | 5 ± 0.25 | 0V / 0 Ω | -10 ~ +70 | ∞ ∞ | TBD | TBD | TBD | Vrms | |
| Alarm Signal (Note 4) | Vst | 12 ± 1.2 | 5 ± 0.25 | 0V / 0 Ω | -10 ~ +70 | TBD ∞ | 4.5 | 5.0 | 5.5 | Vdc | RL2 // CL2 open |
| | | 12 ± 1.2 | 5 ± 0.25 | 0V / 0 Ω | -10 ~ +70 | ∞ TBD | 4.5 | 5.0 | 5.5 | Vdc | RL1 // CL1 open |
| | | 12 ± 1.2 | 5 ± 0.25 | 0V / 0 Ω | -10 ~ +70 | TBD TBD | - | 0 | 0.5 | Vdc | Normal |
| | | 12 ± 1.2 | 5 ± 0.25 | 0V / 0 Ω | -10 ~ +70 | TBD TBD | - | 0 | 0.5 | Vdc | Normal |

Note 1 : Please keep minimum of 2mm clearance (all directions) between inverter high voltage area as marked on mechanical drawing and any conductors.

Note 2 : Open circuit on all lamps for more than 3 seconds, will shut the inverter down.

TEST CIRCUIT :



| SW1 | Operation of unit |
|-----|-------------------|
| a | Operation |
| b | Non operation |

| SW2 | Operation of unit |
|-----|------------------------------------------|
| a | Voltage dimming Vbr=0~2.5V |
| b | Variable resistance dimming VR=0~50kΩ |

Note 3 : In test circuit; 5pF capacitor across the load resistor is add to simulate LCD back-light stray capacitor.

Note 4 : In test circuit; if any of switches SW3, Sw4 or SW5 opens , then the alarm signal will be activated (+5V).

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