

BP22-30TD

Product Code: KRX-2222xxHE9Ax

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REVISION HISTORY

| Rev. | Date | Charged | Approved | Revision Summary |
|------|------------|---------|----------|--------------------|
| A | 2020/06/29 | Fabien | Bruce | <i>First issue</i> |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

PRODUCT CHARACTERISTICS

1) Electrical characteristics

| Characteristics | Min. | Typ. | Max. | Unit |
|--------------------------------|------|------|------|------|
| Input Power (total) | | 200 | 280 | W |
| Input Power Per Channel | | 100 | 140 | W |
| DC Forward Current (total) | | 6.0 | 8.0 | A |
| Forward Current Per Channel | | 3.0 | 4.0 | A |
| DC Forward Voltage Per Channel | | 32 | 34 | V |
| LED Junction Temperature | | 150 | | °C |

2) Photometric characteristics

| Characteristics | Min. | Typ. | Max. | Unit |
|---------------------------------------|------|-------|-------|---------|
| CRI (Cool White / Warm White) | 90 | | | - |
| Luminous Flux (total) | | 17000 | 21000 | lm |
| Luminous Flux of Cool White | | 10000 | 12000 | lm |
| Luminous Flux of Warm White | | 7000 | 9000 | lm |
| Light Emitting Surface (LES) Diameter | | 19.0 | | mm |
| Viewing Angle (FWHM) | | 120 | | degrees |

JEDEC MOISTURE SENSITIVITY

| Level | Floor Life | |
|-------|------------|------------------|
| | Time | Conditions |
| 1 | unlimited | ≤ 30°C / 85 % RH |

BRIGHTNESS GROUPS

| Item | Group Code | Measured Test Condition 3A Pulsed Operation Case Temperature T _c = 25°C Minimum Luminous Flux (lm) | |
|------------------|------------|--|------|
| | | Cool | Warm |
| BP22-30TD | B52 | 10000 | 7000 |
| | B53 | 10000 | 8000 |
| | B54 | 10000 | 9000 |
| | B62 | 11000 | 7000 |
| | B63 | 11000 | 8000 |
| | B64 | 11000 | 9000 |
| | B72 | 12000 | 7000 |
| | B73 | 12000 | 8000 |
| | B74 | 12000 | 9000 |

Notes:

- GPI maintains a tolerance of ±7% on flux
- Calculated flux values are for reference only

PERFORMANCE GROUPS – CHROMATICITY

| Color Code | Color | Mac Adam ellipse | Center x | Center y | a | b | theta |
|------------|-------|------------------|----------|----------|---------|---------|-------|
| B | 6500K | 3-step | 0.3123 | 0.3282 | 0.00669 | 0.00285 | 58.57 |
| | | 5-step | 0.3123 | 0.3282 | 0.01115 | 0.00475 | 58.57 |

| Color Code | Color | Mac Adam ellipse | Center x | Center y | a | b | theta |
|------------|-------|------------------|----------|----------|--------|--------|-------|
| H | 2600K | 3-step | 0.4700 | 0.4300 | 0.0081 | 0.0042 | 53.7 |
| | | 5-step | 0.4700 | 0.4300 | 0.0135 | 0.0070 | 53.7 |

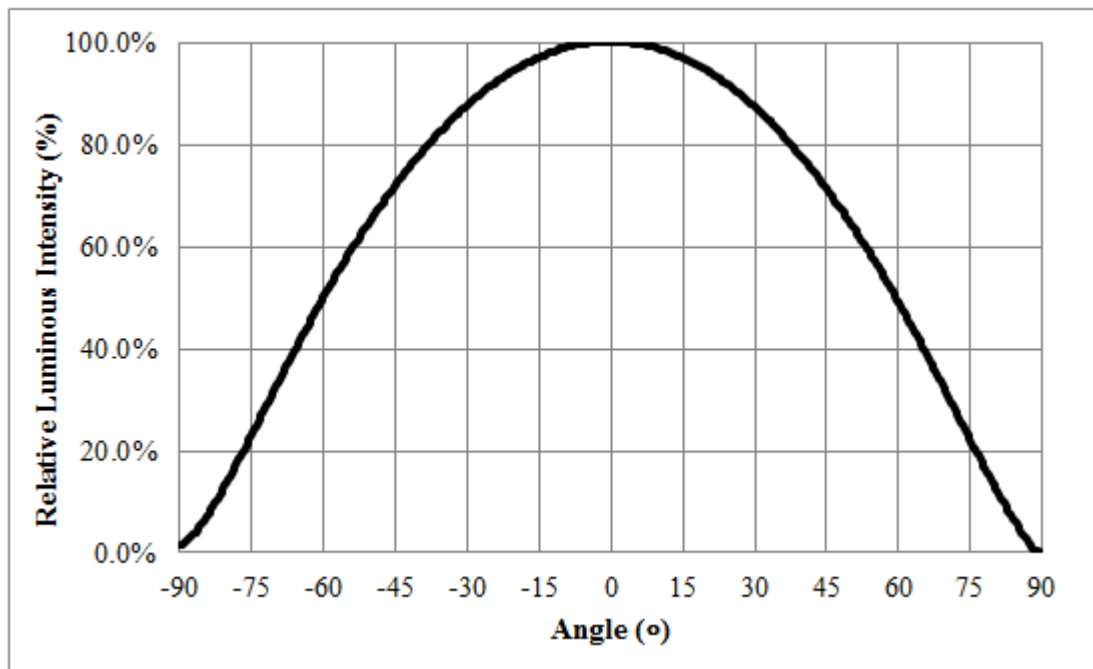
PERFORMANCE GROUPS – CHROMATICITY – CONTINUED

| Group Code | Chromaticity Region | |
|------------|---------------------|-----------------|
| | Color 1 | Color 2 |
| BHA | 6500K 3-step | 2600K 3-step |
| BHB | 6500K 3-step | 2600K 5-step |
| BHC | 6500K 5-step | 2600K 3-step |
| BHD | 6500K 5-step | 2600K 5-step |

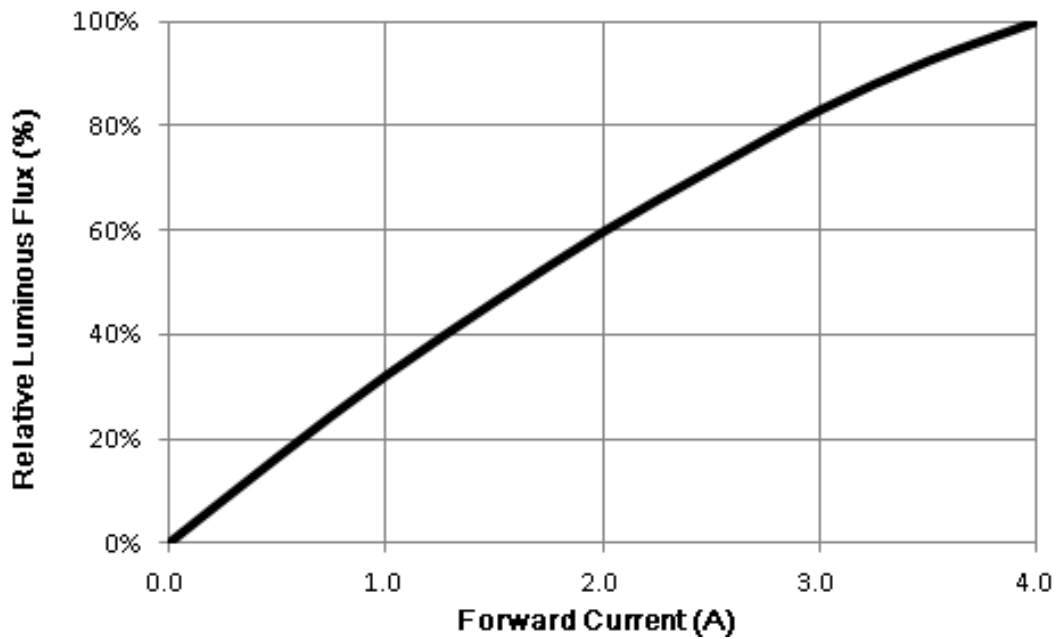
MAXIMUM RATINGS

| Parameter | Values | Unit | |
|------------------------------------|-------------------------------------|--------|--------|
| Operating temperature range | -40 ... 125 | °C | |
| Storage temperature range | -40 ... 125 | °C | |
| Junction temperature | 150 | °C | |
| Forward Current | (typ.) (max.) | 3 4 | A A |
| Reversed voltage | not designed for reversed operation | V | |

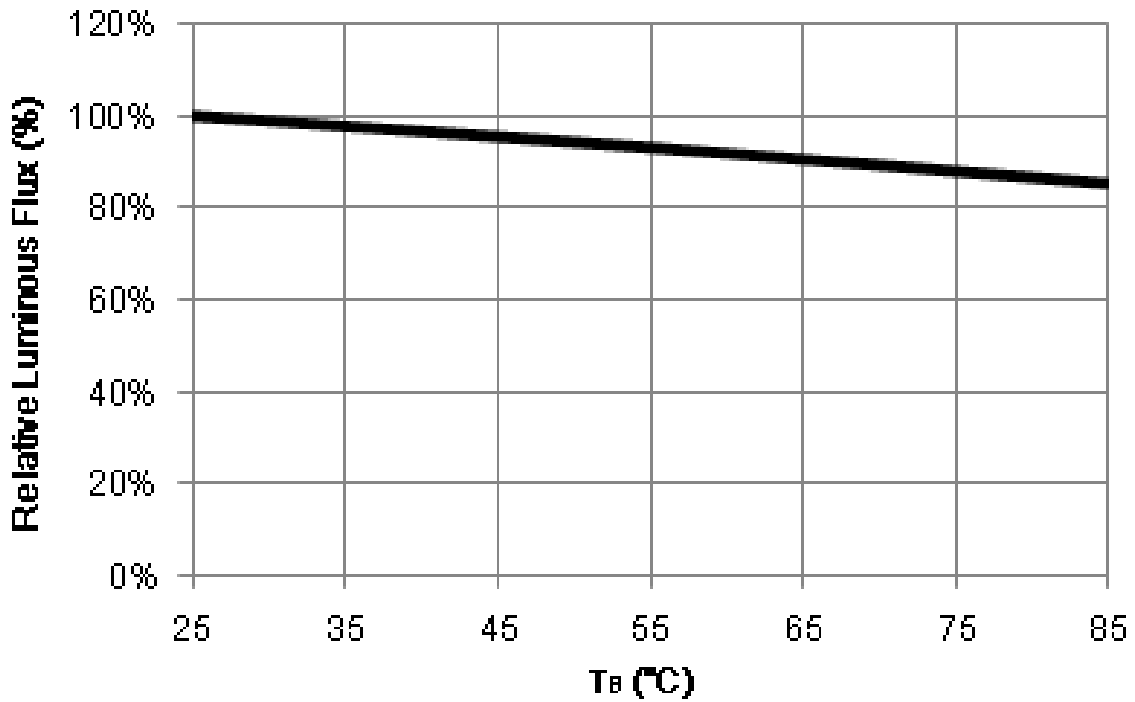
TYPICAL SPATIAL DISTRIBUTION



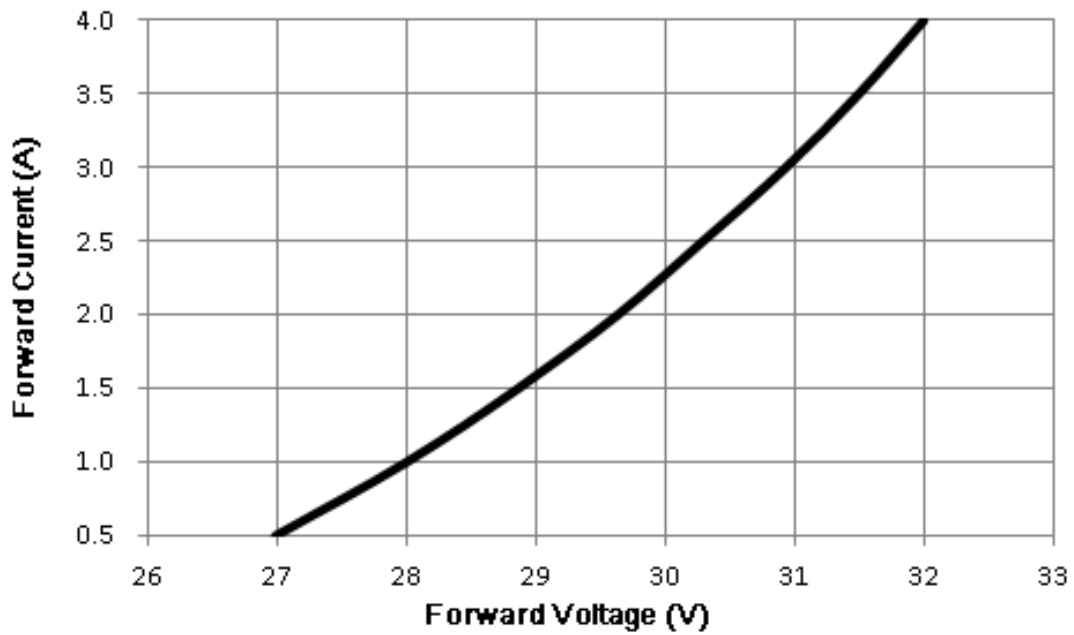
RELATIVE LUMINOUS FLUX VS. CURRENT ($T_B = 25\text{ }^\circ\text{C}$)



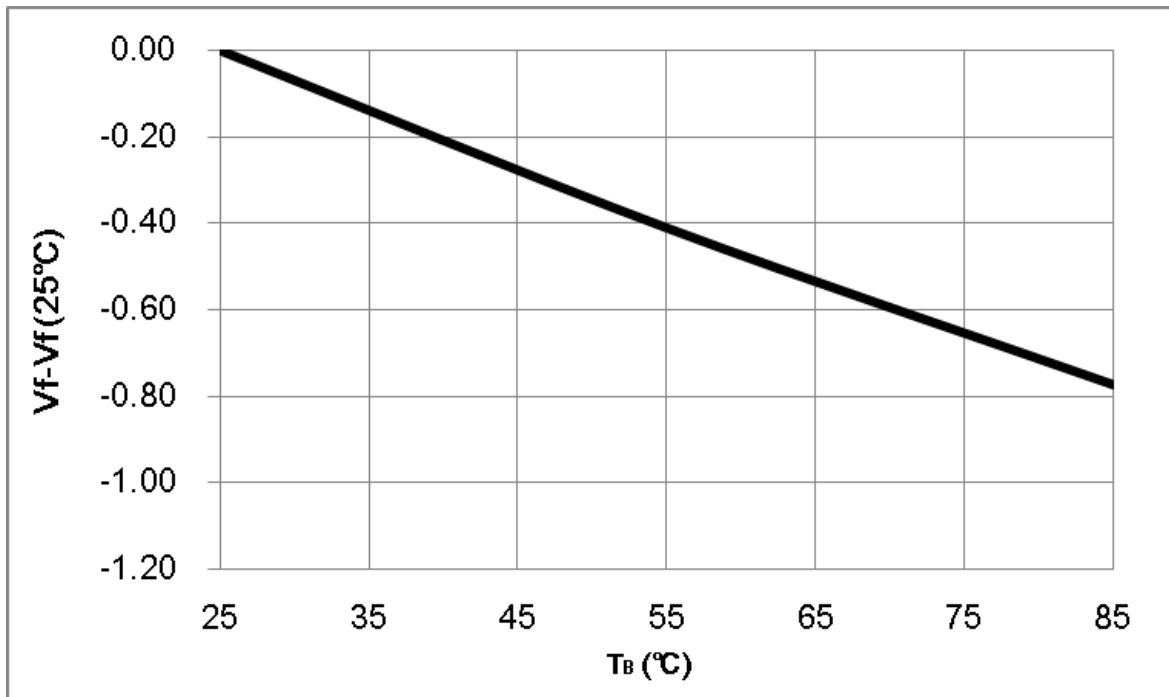
RELATIVE LUMINOUS FLUX VS. TEMPERATURE ($I_F = 3A$)



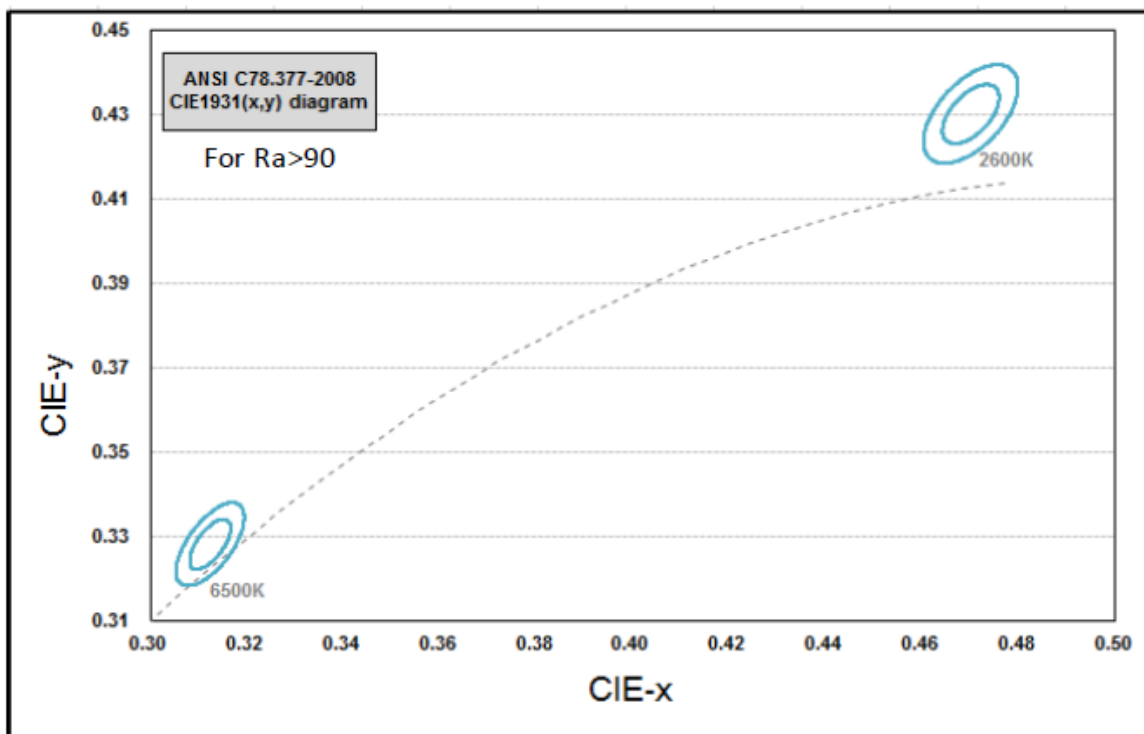
FORWARD VOLTAGE VS. FORWARD CURRENT ($T_B = 25^\circ C$)



RELATIVE FORWARD VOLTAGE ($I_F = 3A$)



GPI'S STANDARD WHITE CHROMATICITY REGINS PLOTTED ON THE 1931 CIE CURVE



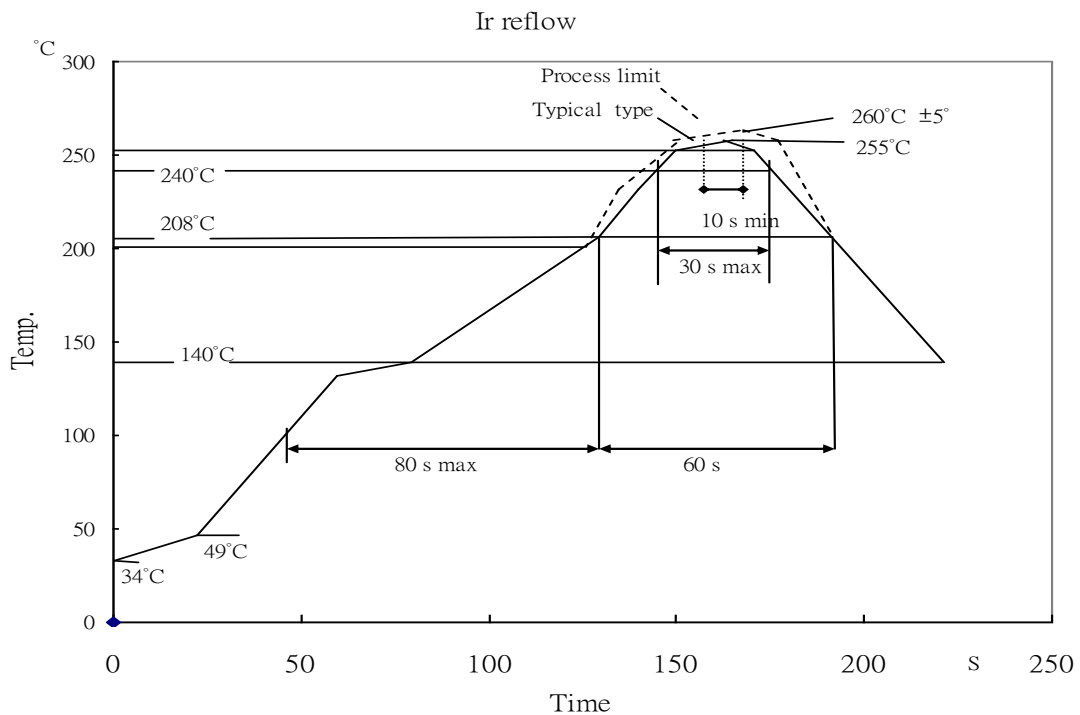
RELIABILITY

| Test Item | Test Conditions | Test Period | Ac/Re |
|---|---|-------------|-------|
| High Temperature Forward Bias (HTFB) | TA=85°C ; IF=3A DC | 1000 hours | 0/1 |
| High Temperature High Humidity Bias (HTHHB) | TA=85°C ; 85% humidity IF=3A DC | 1000 hours | 0/1 |
| Temperature Cycle (TC) | -40°C / 125°C 15min dwell, 5min transfer | 1000 cycles | 0/1 |

Notes:

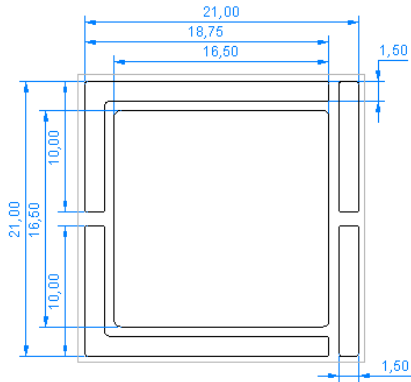
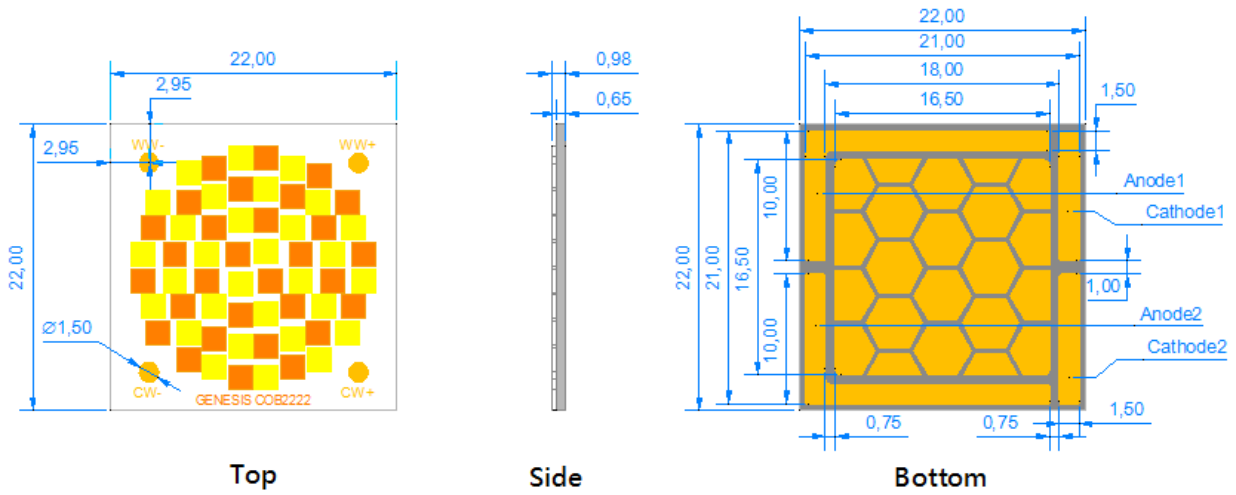
- No catastrophic (LED Fail)
- Lumen maintenance > 85%
- Change in Vf < 10%
- Change in white color point $\Delta x \Delta y \pm 0.01$
- No corrosion
- Moisture Sensitivity Level 1 (IPC/JEDEC J-STD-020)

REFLOW SOLDERING CHARACTERISTICS

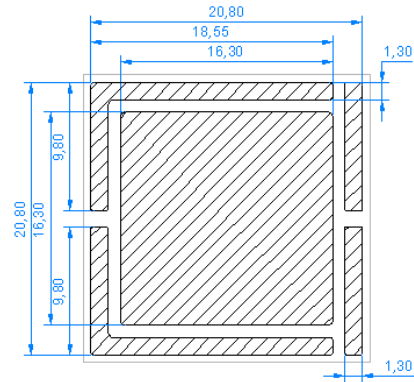


MECHANICAL DIMENSIONS

All measurements are ± 0.10 mm unless otherwise indicated.



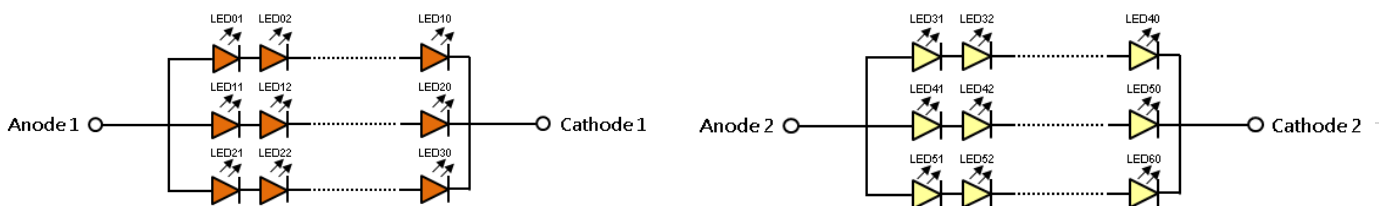
Recommended Soldering Pad Pattern



Recommended Metal Solder Stencil Aperture

Unit: mm

INTERNAL ELECTRICAL CIRCUIT



CAUTIONS

1. Moisture Sensitivity

In testing, GPI has found BP22-30TD LEDs to have 1 year floor life in condition $\leq 30\text{C}/85\%$ relative humidity (RH). Moisture testing included a 168-hr soak at $85\text{C}/60\%$ RH followed by 3 times reflow cycles, with visual and electrical inspections at each stage.

GPI recommends keeping BP22-30TD LEDs in their sealed moisture-barrier packaging until immediately prior to use. GPI also recommends returning any unusual LEDs to the re-sealable moisture-barrier bag and closing the bag immediately after use.

2. Handling Precautions

Do not handle LEDs with bare hands, it may contaminate the LED surface and affect optical characteristics. In the worst case, catastrophic failure from excess pressure through wire-bond breaks and package damage may result.

Do not stack assembled PCBs together. Failure to comply can cause the resin portion of the product to be cut, chipped, delaminated and/or deformed. It may cause wire to break, leading to catastrophic failures.

3. Eye safety

Warning: do not look at exposed lamp in operation. Eye injury can result.

4. Static Electricity

Wristbands and anti-electrostatic gloves are strongly recommended and all devices, equipment and machinery must be properly grounded when handling the LEDs, which are sensitive against static electricity and surge.

Precautions are to be taken against surge voltage to the equipment that mounts the LEDs. Unusual characteristics such as significant increase of current leakage, decrease of turn-on voltage or non-operation at a low current can occur when the LED is damaged.