

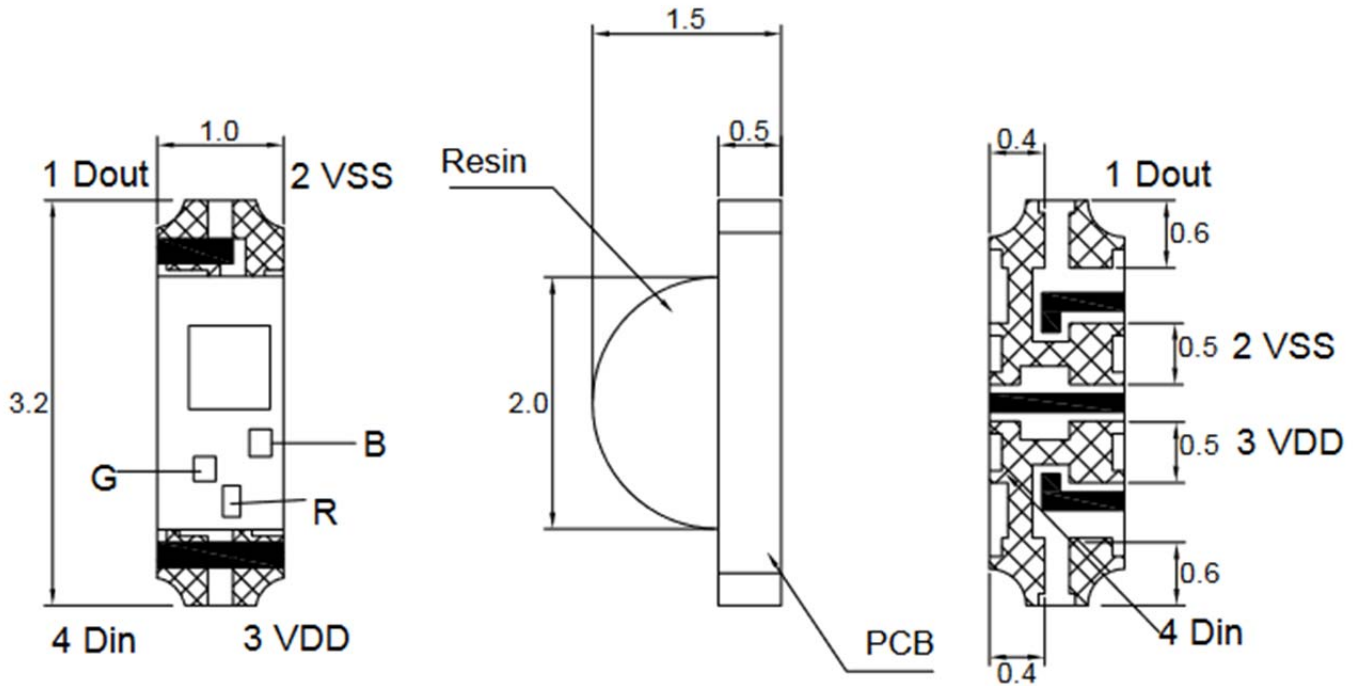


American Opto Plus LED Corp.

L121L-NEPGBW-3I

3.2 x 1.0 x 1.5mm RGB Right Angle SMD LED with IC

PACKAGE DIMENSION



| NO. | Symbol | Function Description |
|-----|--------|----------------------------|
| 1 | DOUT | Control date signal output |
| 2 | VSS | Ground |
| 3 | VDD | DC power input |
| 4 | DIN | Control date signal input |

Notes:

1. All dimension are in millimeter tolerance is ± 0.1 mm unless otherwise noted.
2. Specifications are subject to change without notice.

| Material | Color | |
|----------|------------|----------------|
| | Emitted | Lens |
| AlGaInP | Red | White Diffused |
| InGaN | Pure Green | |
| InGaN | Blue | |

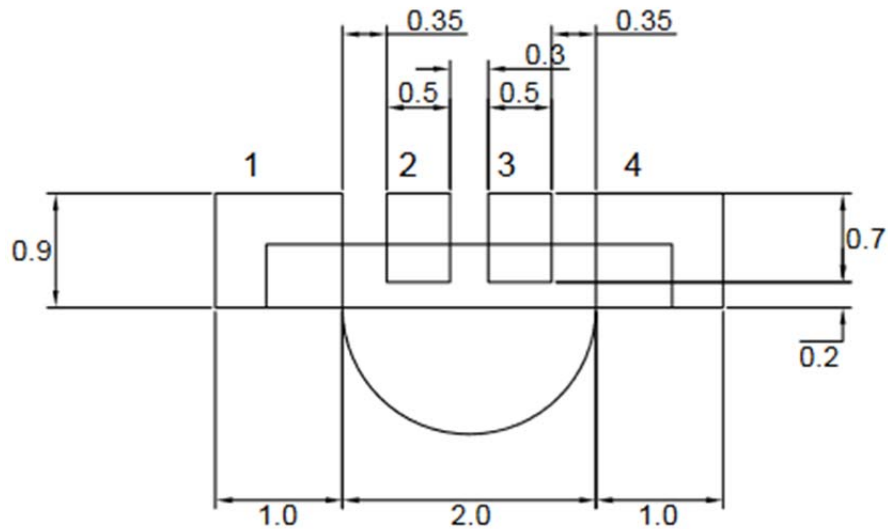


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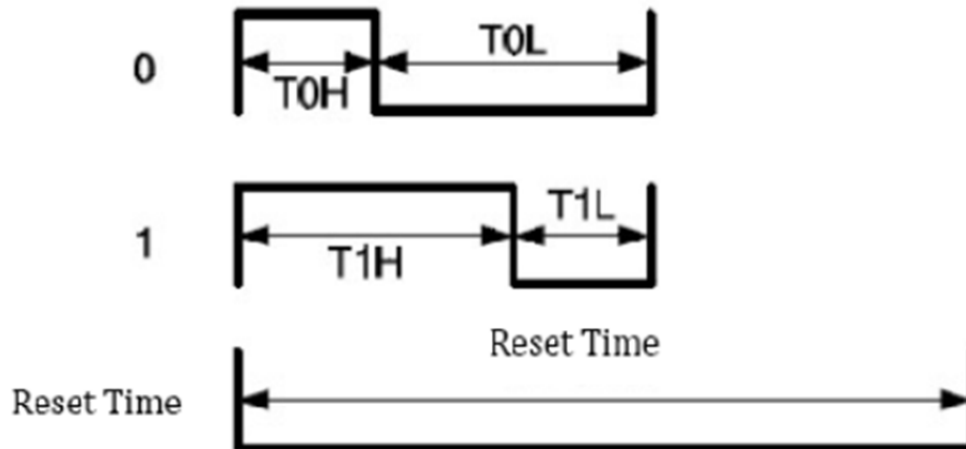
RECOMMENDED SOLDERING PAD PATTERN



Notes:

1. The tolerances unless mentioned is ± 0.1 mm.
2. Unit = mm.

TIMING WAVE FORM



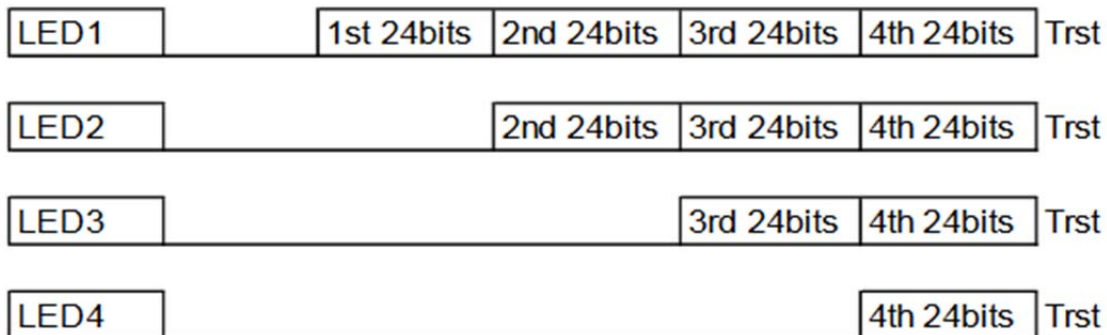


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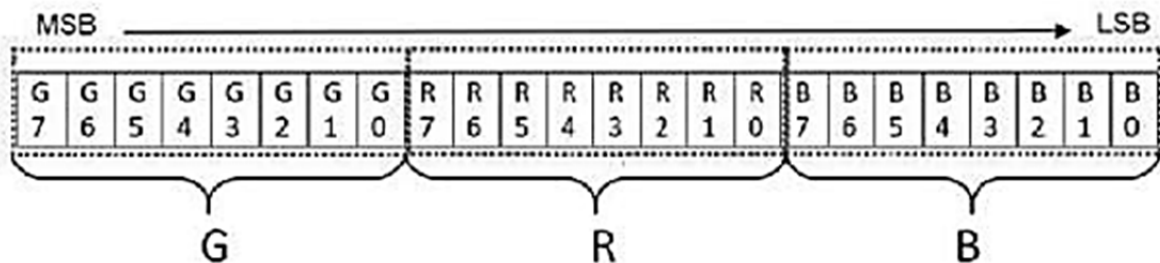
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DATA COMMUNICATION



SINGLE DATA IN 24BIT FOR RGB



HIGH SPEED MODE

| Item | Description | Min. | Max. | Unit |
|------|----------------------------|------|------|------|
| TOH | 0 code, High- level time | 0.22 | 0.38 | us |
| TOL | 0 code, Low- level time | 0.58 | 1 | us |
| T1H | 1 code, High- level time | 0.58 | 1 | us |
| T1L | 1 code, Low- level time | 0.58 | 1 | us |
| Trst | Rest code, Low- level time | 280 | -- | us |



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ABSOLUTE MAXIMUM RATINGS

(Ta=25°C, VDD=5V, Vss=0)

| Parameter | Symbol | Value | Unit |
|-----------------------------|--------|----------|------|
| Supply Voltage | VDD | 5.3 | V |
| LED Output Current | Iout | 25 | mA |
| Power Dissipation | Pd | 240 | mW |
| Operating Temperature Range | Topr | -40~+85 | °C |
| Storage Temperature Range | Tstg | -40~+100 | °C |

OPTICAL-ELECTRICAL CHARACTERISTICS

(Ta=25°C, VDD=5V, Vss=0)

| Parameter | Symbol | Test Condition | Value | | | Unit |
|--------------------|--------|----------------|-------|-----|-----|------|
| | | | Min | Typ | Max | |
| Supply Voltage | VDD | -- | 3.7 | 5 | 5.3 | V |
| Each R/G/B Current | IOL | VDD=5V | -- | 12 | -- | mA |
| Input High Voltage | VIH | DI | 2.7 | -- | VDD | V |
| Input Low Voltage | VIL | DI | 0 | -- | 0.7 | V |

| Parameter | Symbol | | Test Condition | Value | | | Unit |
|---------------------|--------|---|----------------|-------|-----|-----|------|
| | | | | Min | Typ | Max | |
| Luminous intensity | Iv | R | VDD=5V | 125 | 285 | 500 | mcd |
| | | G | | 200 | 370 | 800 | |
| | | B | | 50 | 75 | 200 | |
| Dominant Wavelength | λD | R | | 615 | 622 | 630 | nm |
| | | G | | 515 | 523 | 535 | |
| | | B | | 460 | 467 | 475 | |
| Viewing angle | 2θ 1/2 | | | -- | 120 | -- | Deg |

Notes:

1. The dominant wavelength data did not including $\pm 1\text{nm}$ testing tolerance.
2. The luminous intensity data did not including $\pm 15\%$ testing tolerance.



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ELECTRICAL-OPTICAL CHARACTERISTIC CURVES

(Ta=25°C)

Fig.1 R CHIP

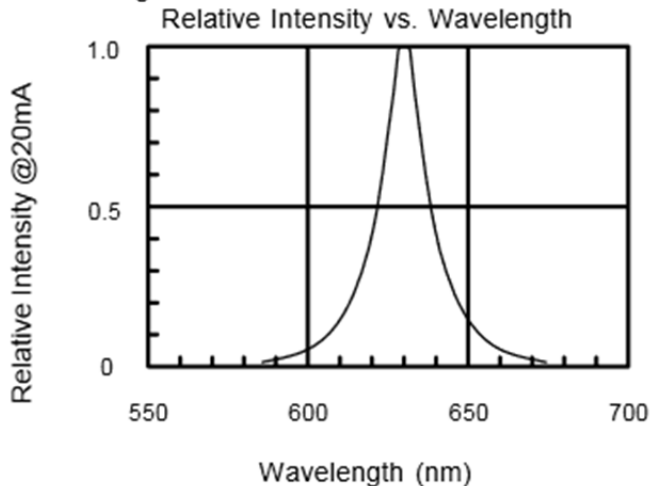


Fig.2 G CHIP

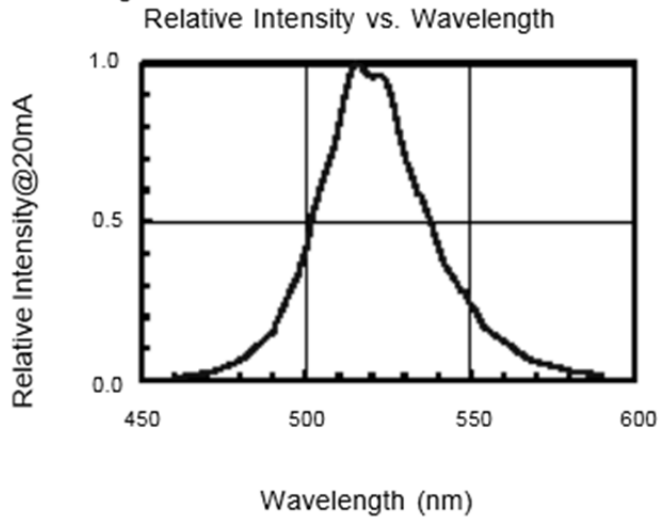


Fig.3 B CHIP

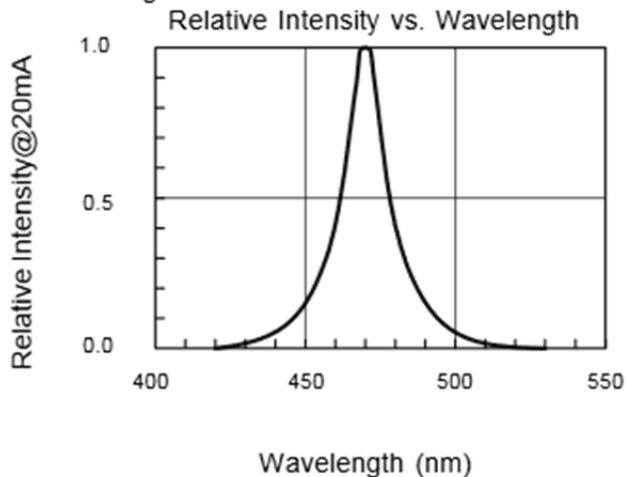
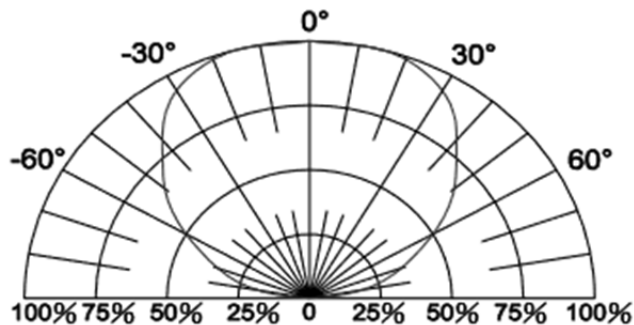


Fig.4 Directive Radiation



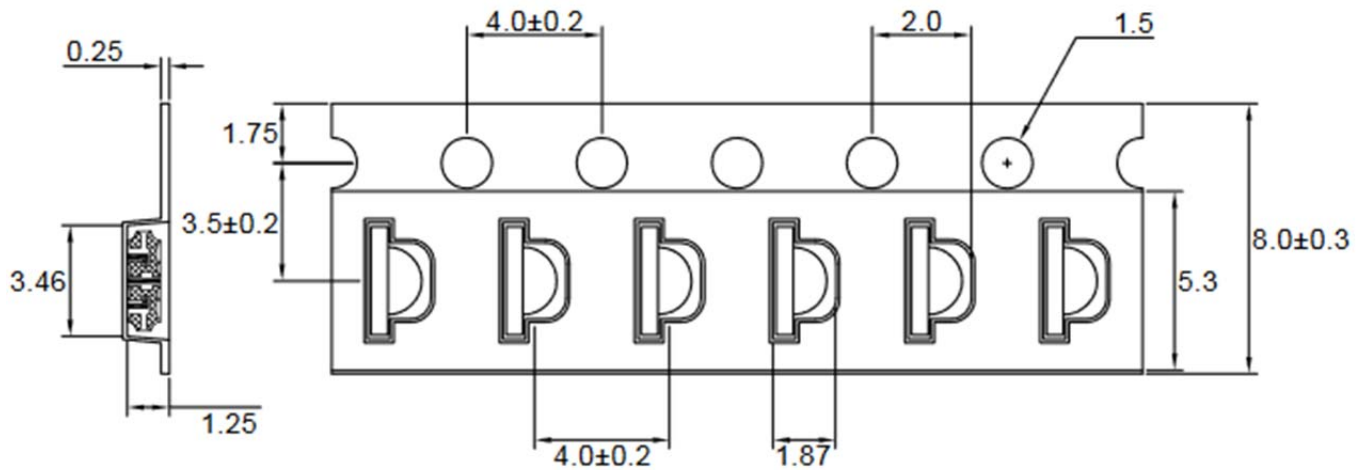


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CARRIER TAPE DIMENSIONS



Note:

1. The tolerances unless mentioned is ± 0.1 mm, Angle ± 0.5 , Unit=mm.

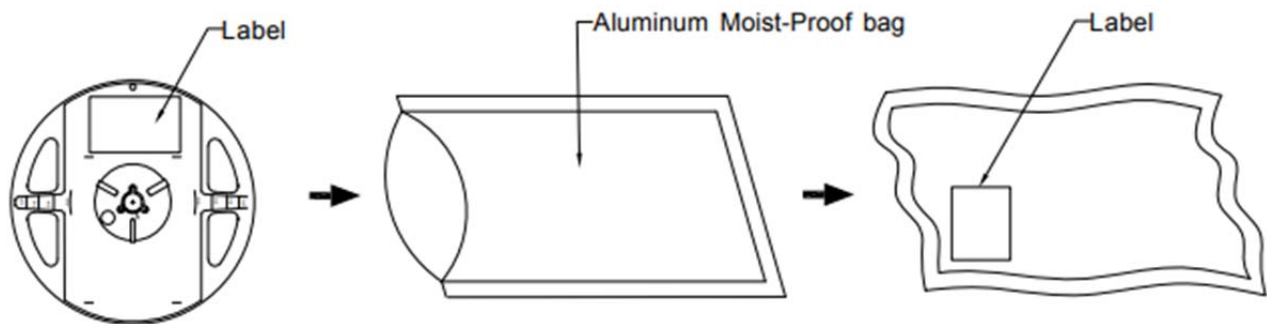
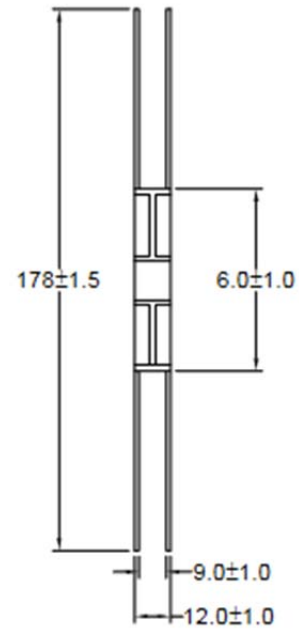
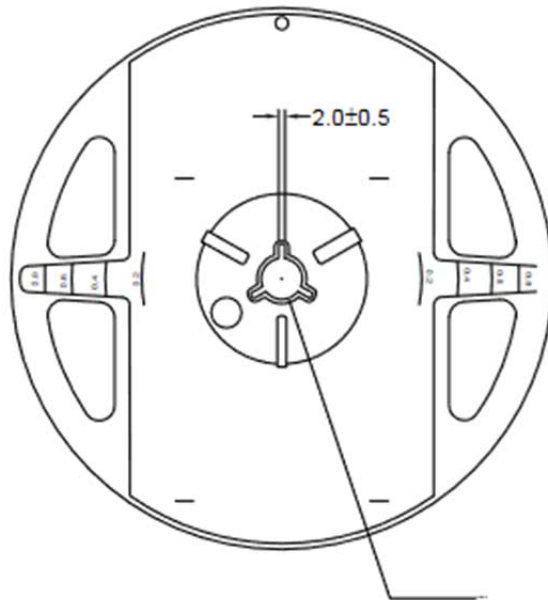


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REEL DIMENSIONS



| Description | Quantity/Reel |
|---------------------|---------------|
| 8.0mm tape, 7" reel | 3000 PCS |

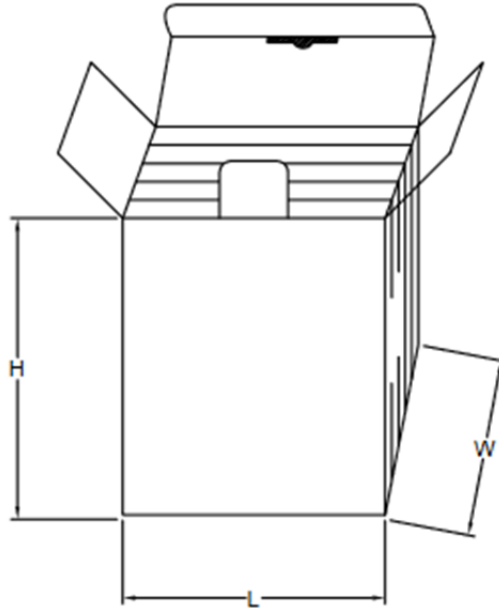


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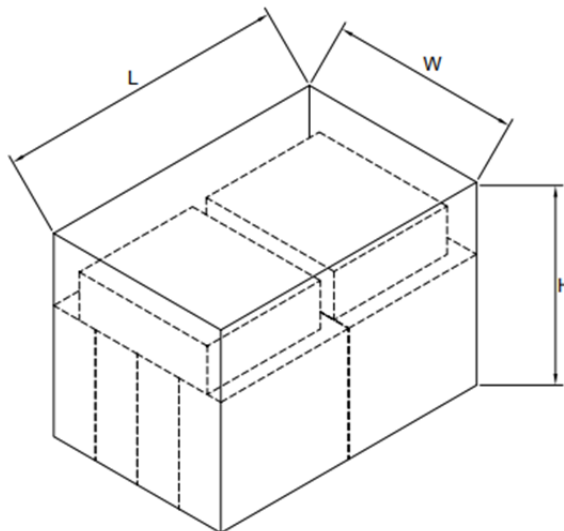
3.2 x 1.0 x 1.5mm RGB Right Angle SMD LED with IC

BOX EXPLANATION



Notes:

1. 5 bag/inner box
2. Carton size : L x W x H 23cm x 8.5cm x 26cm



Notes:

1. 10 inner boxes/carton
2. Carton size : L x W x H 58cm x 34cm x 35cm



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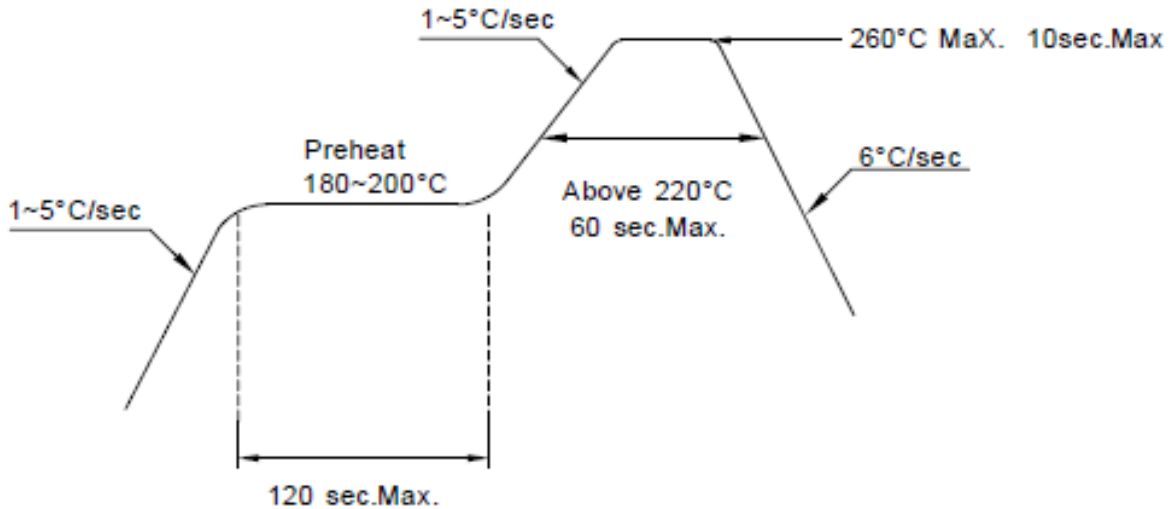
3.2 x 1.0 x 1.5mm RGB Right Angle SMD LED with IC

RECOMMENDED SOLDERING CONDITIONS

1. Hand Solder

Basic spec is $\leq 320^{\circ}\text{C}$ 3 sec one time only

2. PB-Free Reflow Solder



Note:

1. Reflow soldering should not be done more than two times.
2. When soldering, do not put stress on the LED during heating.
3. After soldering, do not warp the circuit board.



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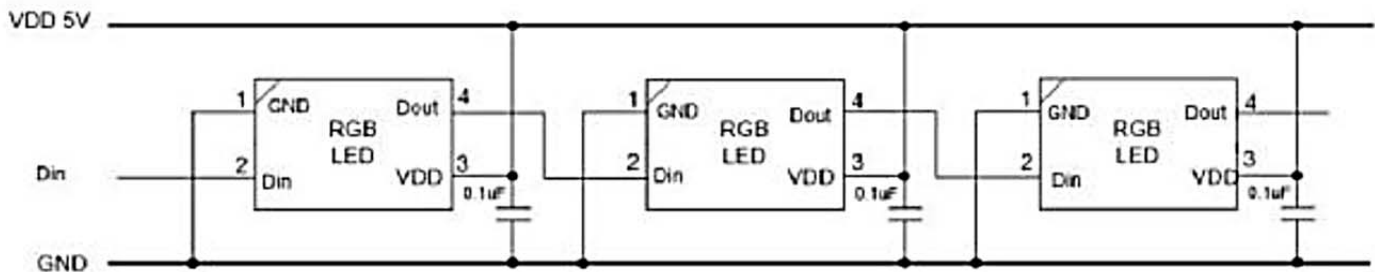
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PRECAUTIONS FOR USE:

Storage time:

1. Calculated shelf life before opening is 12 months at $< 30^{\circ}\text{C}$ and $< 90\%$ relative humidity (RH).
2. After bag is opened, devices which will be subjected to reflow soldering or other high temperature processes must be:
 - a) Assembled within 168 hours in an environment of $\leq 30^{\circ}\text{C} / 60\%$ RH, or
 - b) Stored at ambient of 10% RH or less.
3. Devices are required baking before assembly if:
 - a) Humidity Indicator Card reads $>10\%$ (for level 2a -5a) or $>60\%$ (for level 2) at ambient temperature $23\pm 5^{\circ}\text{C}$.
 - b) 2.a) or 2.b) doesn't meet.
4. If baking is required, devices should be baked for >24 hours at $60\pm 5^{\circ}\text{C} / 5\%$ RH. Performing baking only once, and using the baked devices within 8 hours.

RECOMMENDED ROUTE



Cleaning:

Use alcohol-based cleaning solvents such as isopropyl alcohol to clean the LED.

ESD (Electrostatic Discharge):

Static Electricity or power surge will damage the LED. Use of a conductive wrist band or anti-electrostatic glove is recommended when handling these LED. All devices, equipment and machinery must be properly grounded.