

PD60-48C/ TR8



Features

- Fast response time.
- High photo sensitivity.
- Small junction capacitance.
- Compliance Halogen Free(Br < 900ppm, Cl < 900ppm, Br+Cl < 1500ppm).
- Compliance with EU REACH
- This product itself will remain within RoHS compliant version.
- Package size : 6.0mm*4.8mm*1.1mm

Description

- **PD60-48C/TR8** is a high speed and high sensitive PIN photodiode in miniature flat top view lens SMD package and it is molded in a black epoxy. The device is Spectrally matched to infrared emitting diode.

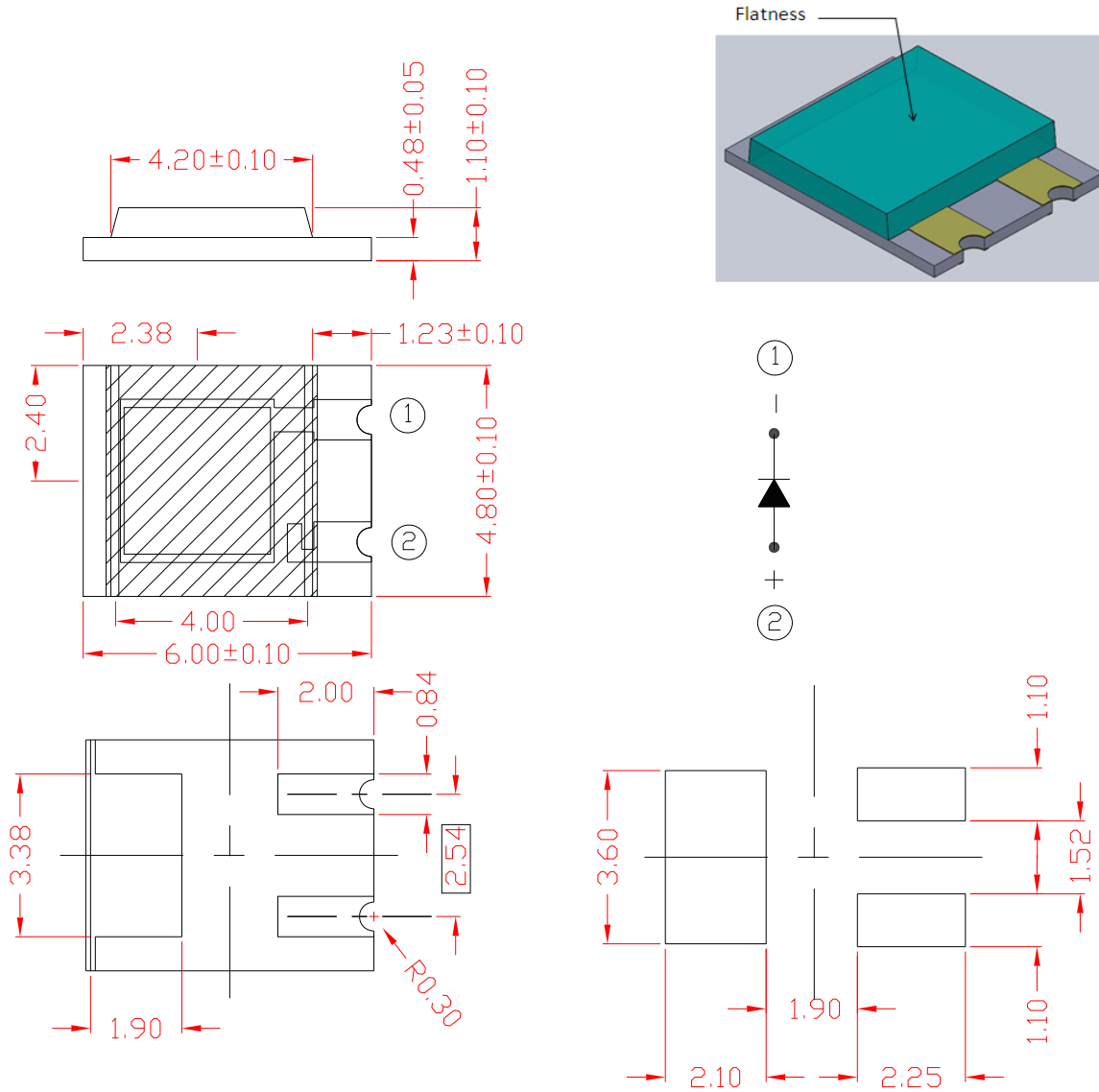
Applications

- High speed photo detector
- Copier
- Game machine

Device Selection Guide

| Device No. | Chip Material | Lens Color |
|--------------|---------------|-------------|
| PD60-48C/TR8 | Silicon | Water clear |

Package Dimensions



● Notes:

1. All dimensions are in millimeters
2. Tolerances unless dimensions ±0.1mm

Absolute Maximum Ratings (Ta=25°C)

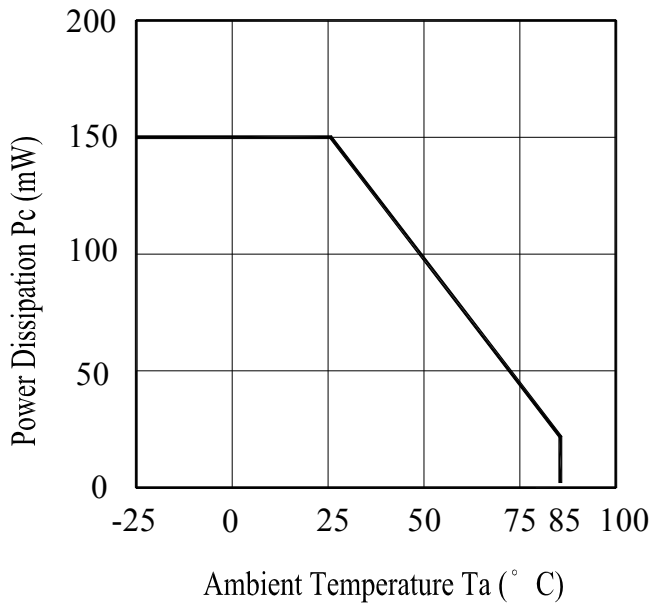
| Parameter | Symbol | Ratings | | Unit |
|---|------------------|------------|-----------|------|
| | | 660nm(Red) | 910nm(IR) | |
| Reverse Voltage | V _R | 32 | | V |
| Operating Temperature | T _{opr} | -25 +85 | | °C |
| Storage Temperature | T _{stg} | -25 +85 | | °C |
| Soldering Temperature | T _{sol} | 260 | | °C |
| Power Dissipation at(or below) 25°C Free Air Temperature | P _c | 150 | | mW |

Electro-Optical Characteristics (Ta=25°C)

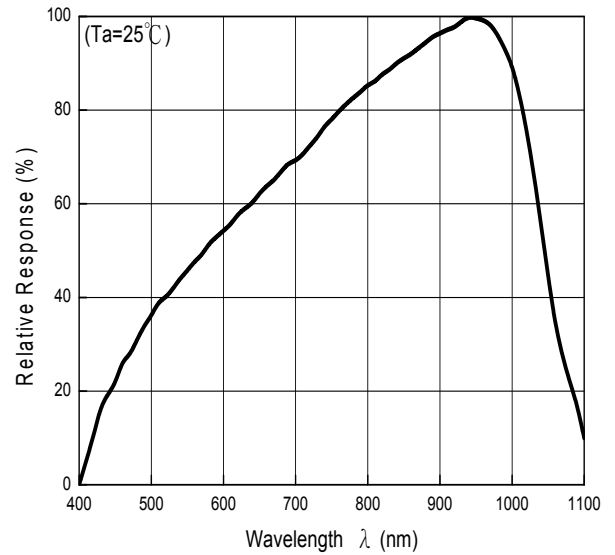
| Parameter | Symbol | Condition | Min. | Typ. | Max. | Unit |
|--------------------------------|-----------------|---|------|------|------|---------------|
| Range Of Spectral Bandwidth | $\lambda_{0.1}$ | --- | 420 | --- | 1100 | nm |
| Wavelength Of Peak Sensitivity | λ_p | --- | --- | 940 | --- | nm |
| Open-Circuit Voltage | V _{OC} | Ee=1mW/cm ² $\lambda_p=875\text{nm}$ | --- | 0.35 | --- | V |
| Short-Circuit Current | I _{SC} | Ee=1mW/cm ² $\lambda_p=875\text{nm}$ | --- | 32.0 | --- | μA |
| Reverse Light Current | I _L | Ee=1mW/cm ² $\lambda_p=875\text{nm}$ VR=5V | 17.0 | 33.5 | --- | μA |
| | | Ee=1mW/cm ² $\lambda_p=940\text{nm}$ VR=5V | --- | 37.0 | --- | |
| Dark Current | I _D | Ee=0mW/cm ² VR=10V | --- | --- | 20 | nA |
| Reverse Breakdown Voltage | V _{BR} | Ee=0mW/cm ² IR=100 μA | 33 | 170 | --- | V |
| Forward Voltage | V _F | IF=20mA | 0.5 | --- | 1.3 | V |
| Total Capacitance | C _t | Ee=0mW/cm ² f=1MHz V _R =3V | --- | 44 | --- | pF |
| Rise Time | t _r | V _R =5V | --- | 50 | --- | ns |
| Fall Time | t _f | R _L =1000 Ω | --- | 50 | --- | |
| View Angle | 2 θ /2 | VR =5V | -- | 125 | -- | deg |

Typical Electro-Optical Characteristics Curves

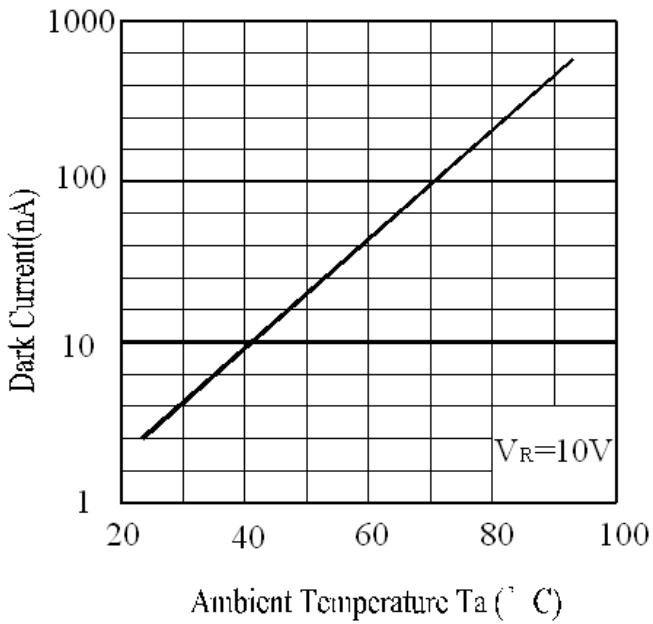
Power Dissipation vs. Ambient Temperature



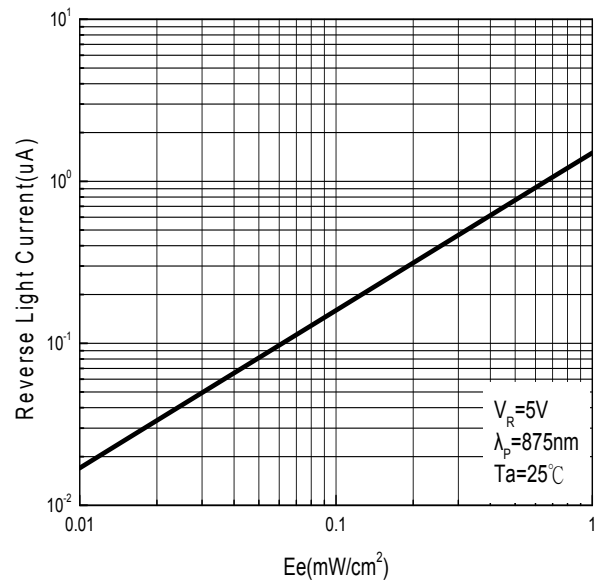
Spectral Sensitivity



Dark Current vs. Ambient Temperature

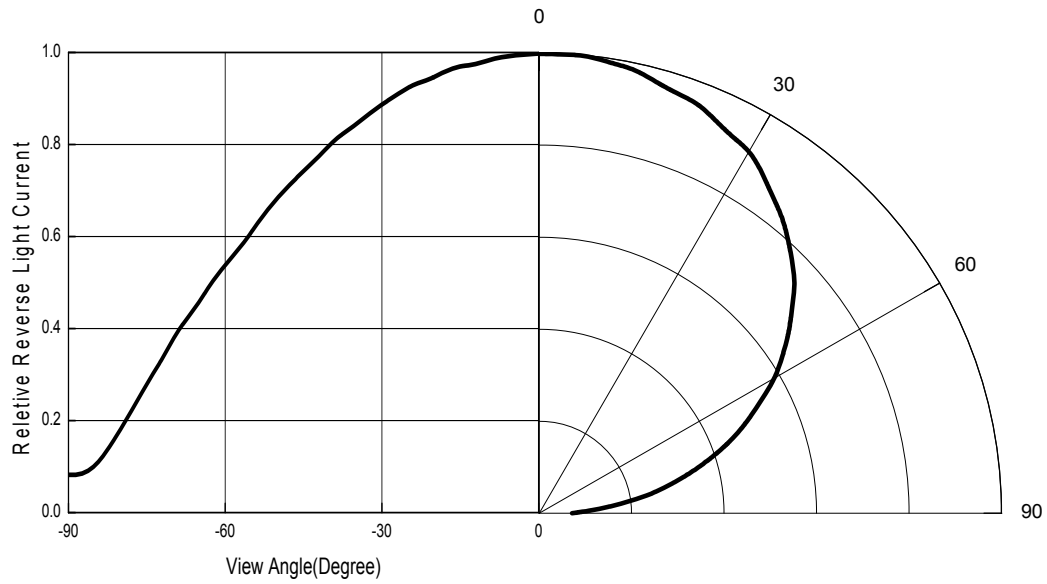


Reverse Light Current vs. E_e



Typical Electro-Optical Characteristics Curves

Relative Light Current vs. Angular Displacement



Precautions For Use

1. Over-current-proof

Customer must apply resistors for protection , otherwise slight voltage shift will cause big current change (Burn out will happen).

2. Storage

2.1 Do not open moisture proof bag before the products are ready to use.

2.2 Before opening the package, the Photodiode should be kept at 30°C or less and 90%RH or less.

2.3 The Photodiode should be used within a year.

2.4 After opening the package, the Photodiode should be kept at 30°C or less and 60%RH or less.

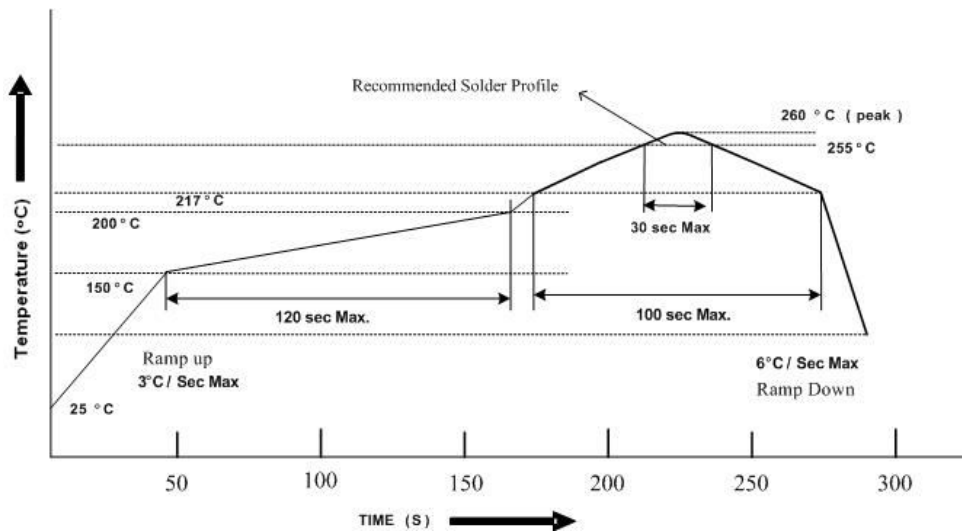
2.5 The Photodiode should be used within 24 hours (1 days) after opening the package

2.6 If the moisture absorbent material (silica gel) has faded away or the Photodiode have exceeded the storage time, baking treatment should be performed using the following conditions.

Baking treatment : $60\pm 5^{\circ}\text{C}$ for Min. Min. 24 hours.

3. Soldering Condition

3.1 Pb-free solder temperature profile



3.2 Reflow soldering should not be done more than two times.

3.3 When soldering, do not put stress on the Photodiode during heating.

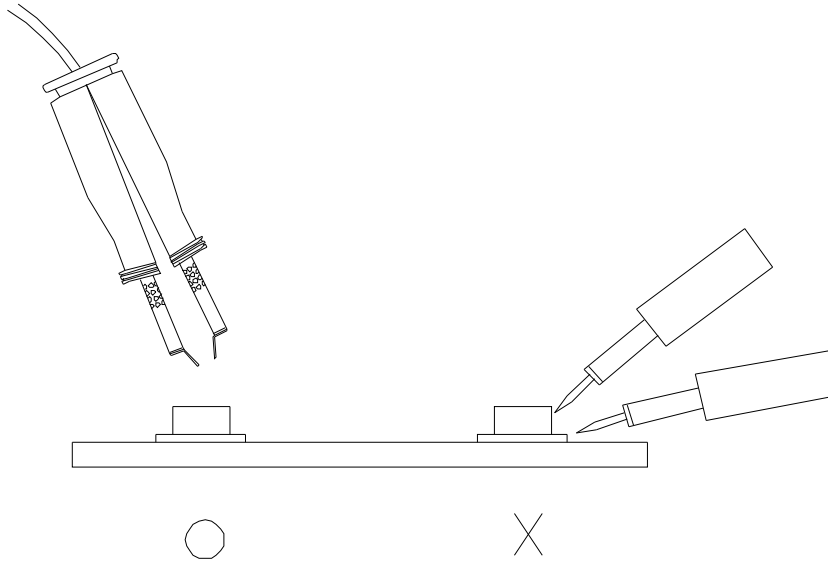
3.4 After soldering, do not warp the circuit board.

4. Soldering Iron

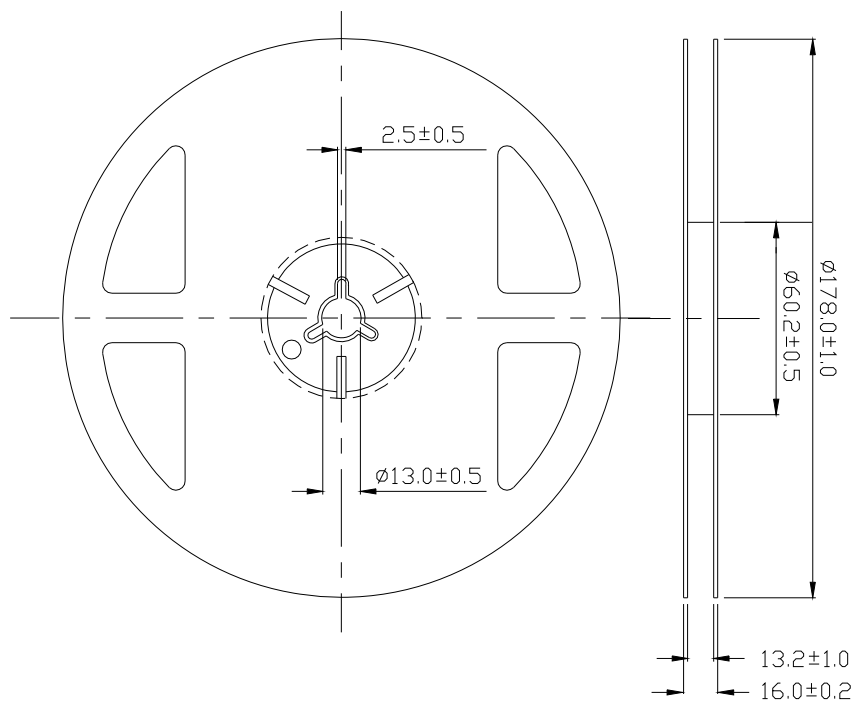
Each terminal is to go to the tip of soldering iron temperature less than 350°C for 3 seconds within once in less than the soldering iron capacity 25W. Leave two seconds and more intervals, and do soldering of each terminal. Be careful because the damage of the product is often started at the time of the hand solder.

5. Repairing

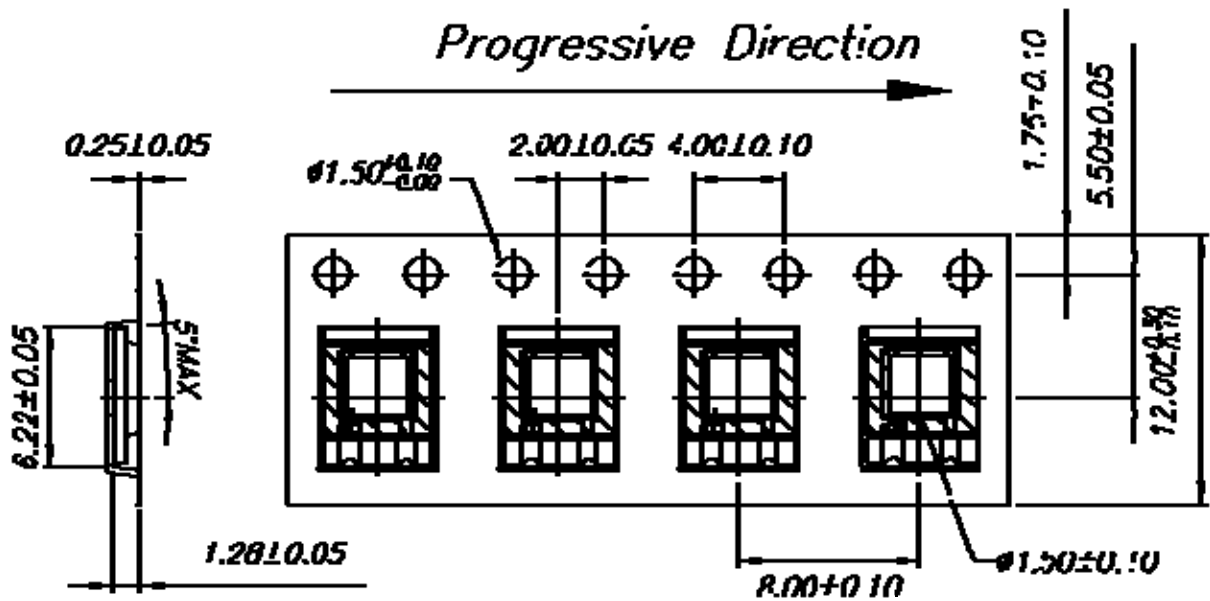
Repair should not be done after the Photodiode have been soldered. When repairing is unavoidable, a double-head soldering iron should be used (as below figure). It should be confirmed beforehand whether the characteristics of the Photodiode will or will not be damaged by repairing.



Package Dimensions

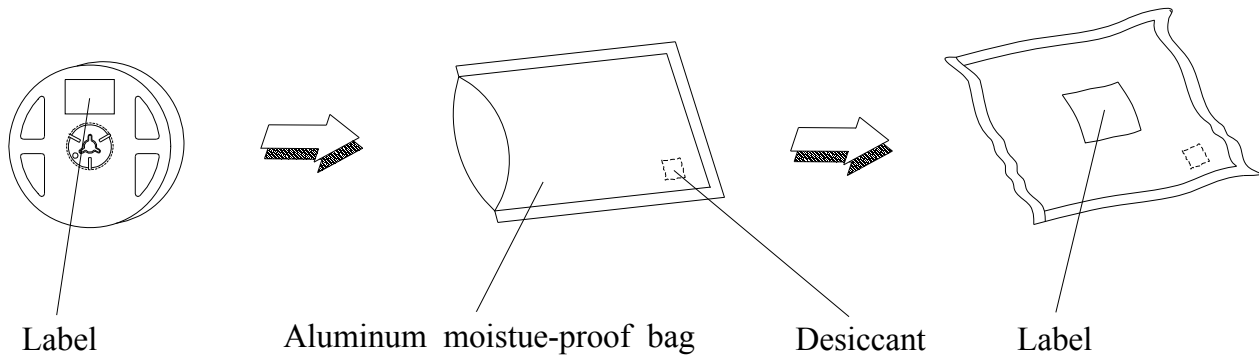


Carrier Tape Dimensions: Loaded quantity 1000PCS per reel.



- Note: 1. Dimensions are in millimeters
2. The tolerances unless mentioned is ± 0.1 mm

Moisture Resistant Packaging



Label Form Specification



- CPN: Customer's Production Number
P/N : Production Number
QTY: Packing Quantity
CAT: Ranks
HUE: Peak Wavelength
REF: Reference
LOT No: Lot Number
MADE IN TAIWAN: Production Place

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2. The product meets EVERLIGHT AMERICAS published specification for a period of twelve (12) months from date of shipment.
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