

Technical Data Sheet

0603 Package Top Phototransistor

MPT60363T(SHW)

Features

- Fast response time
- High photo sensitivity
- Small junction capacitance
- Package in 8mm tape on 7" diameter reels.
- Pb free
- The product itself will remain within RoHS compliant version.
- Compliance with EU REACH.
- Compliance Halogen Free .(Br <900 ppm ,Cl <900 ppm , Br+Cl < 1500 ppm)

Description

• MPT60363T(SHW) is a phototransistor in miniature SMD package hich is molded in a black with flat top view lens. he device is Spectrally matched to infrared emitting

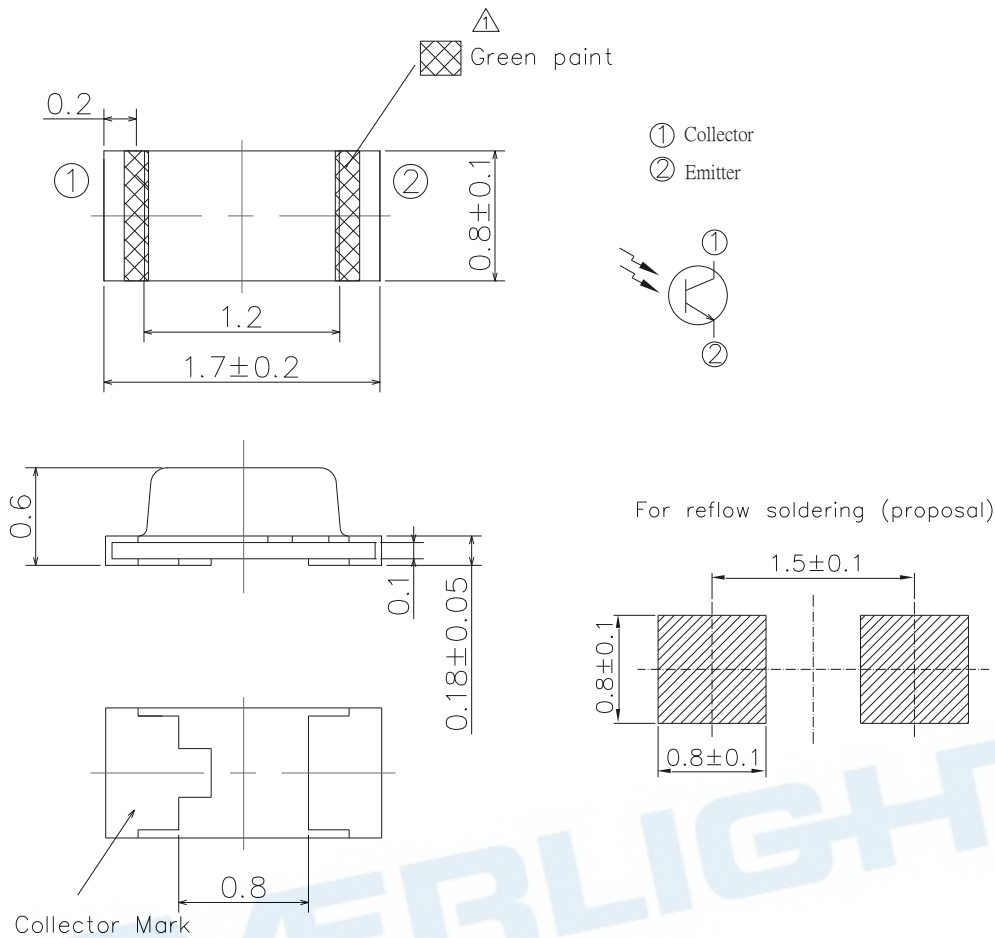
Applications

- Miniature switch
- Counters and sorter
- Position sensor
- Infrared applied system

Device Selection Guide

Device No.	Chip Material	Lens Color
MPT60363T(SHW)	Silicon	Blcak

Package Dimensions



- Notes:**
1. All dimensions are in millimeters
 2. Tolerances unless dimensions $\pm 0.1\text{mm}$

Absolute Maximum Ratings ($T_a=25^\circ\text{C}$)

Parameter	Symbol	Rating	Unit
Collector-Emitter Voltage	V_{CE0}	30	V
Emitter-Collector-Voltage	V_{ECO}	5	V
Collector Current	I_c	20	mA
Operating Temperature	T_{opr}	-25 ~ +85	$^\circ\text{C}$
Storage Temperature	T_{stg}	-40 ~ +100	$^\circ\text{C}$
Soldering Temperature*1	T_{sol}	260	$^\circ\text{C}$
Power Dissipation at(or below) 25 $^\circ\text{C}$ Free Air Temperature	P_c	75	mW

Notes: *1: Soldering time ≤ 5 seconds.

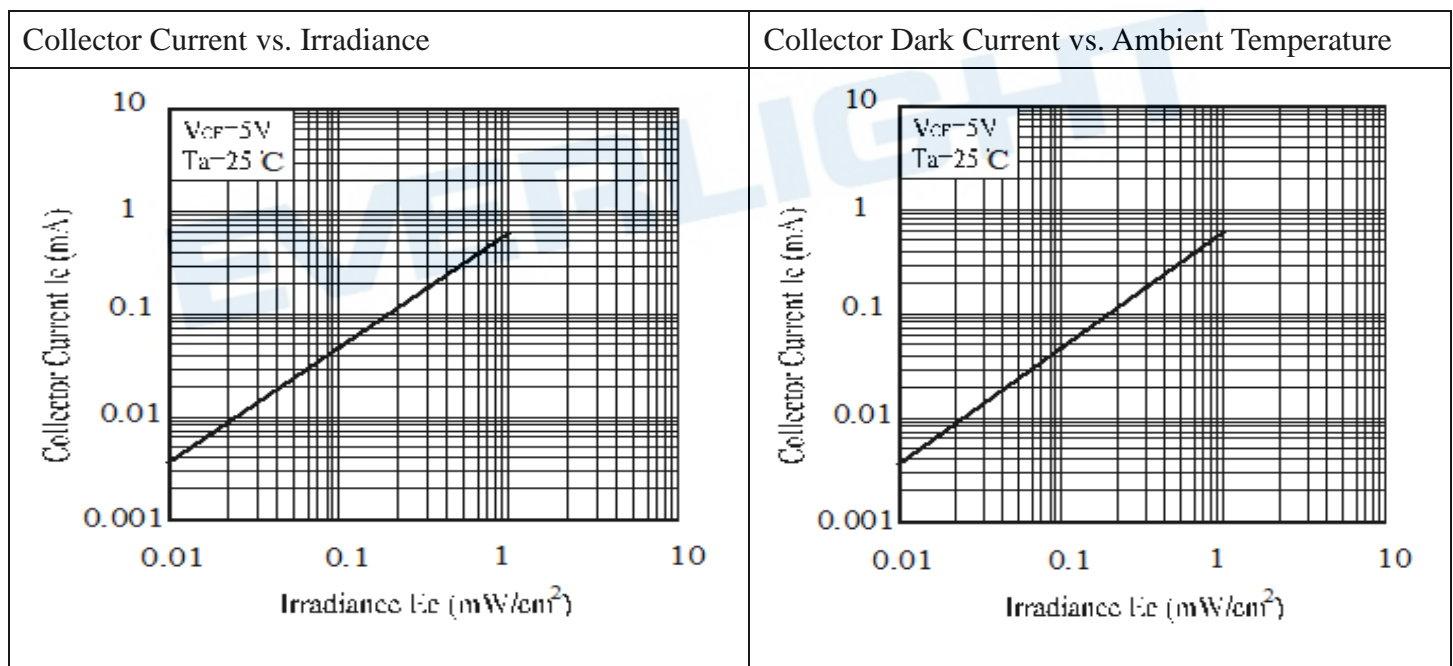
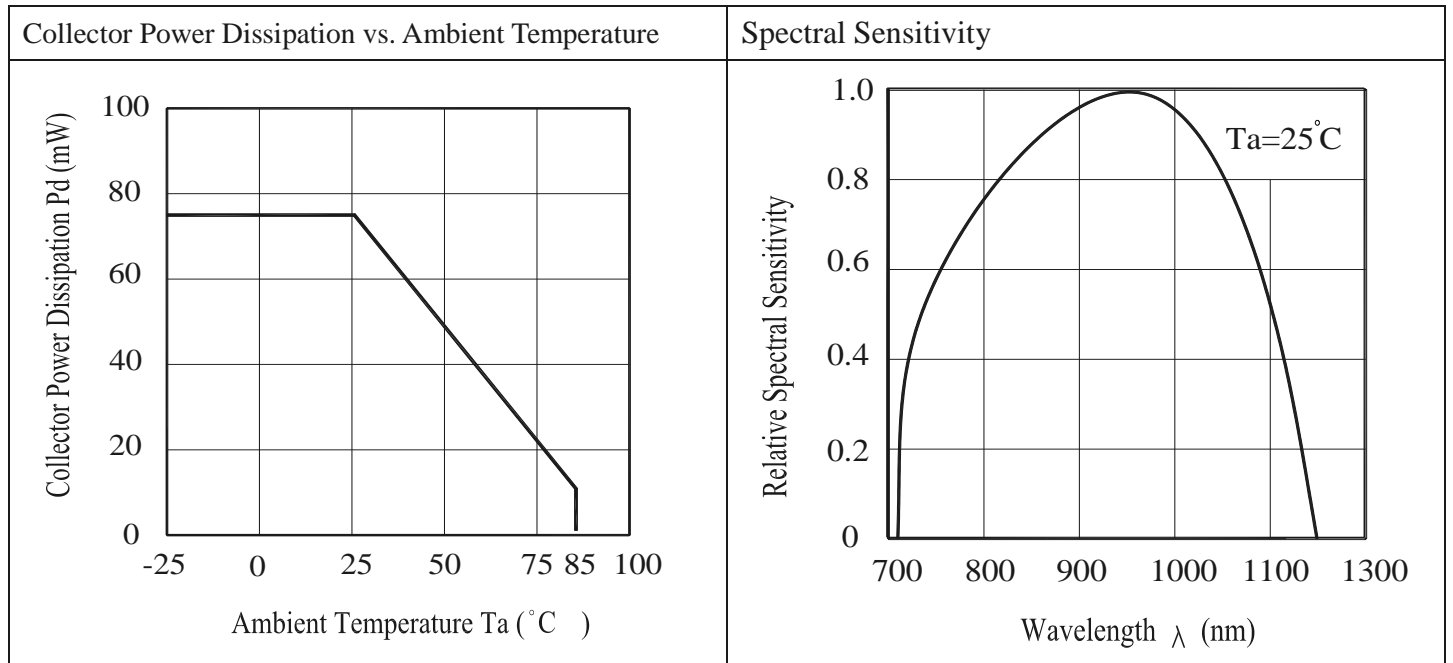
Electro-Optical Characteristics (Ta=25°C unless specified otherwise)

Parameter	Symbol	Min.	Typ.*	Max.	Unit	Condition
Rang Of Spectral Bandwidth	$\lambda_{0.5}$	760	---	1100	nm	---
Wavelength Of Peak Sensitivity	λ_P	---	940	---	nm	---
Collector-Emitter Breakdown Voltage	BV_{CEO}	30	---	---	V	$I_C=100\mu A$ $E_e=0mW/cm^2$
Collector-Emitter Saturation Voltage	BV_{ECO}	5	---	---	V	$I_E=100\mu A$ $E_e=0mW/cm^2$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	---	---	0.4	V	$I_C=1mA$ $E_e=1mW/cm^2$
Collector Dark Current	I_{CEO}	---	---	100	nA	$V_{CE}=10V$ $E_e=0mW/cm^2$
On State Collector Current	$I_{C(ON)}$	0.30	--	1.00	mA	$V_{CE}=5V$ $E_e=1mW/cm^2$ $\lambda_P=940nm$
Rise Time	t_r	---	15	--	μS	$V_{CE}=5V$
Fall Time	t_f	---	15	--		$I_C=1mA$ $R_L=1000\Omega$

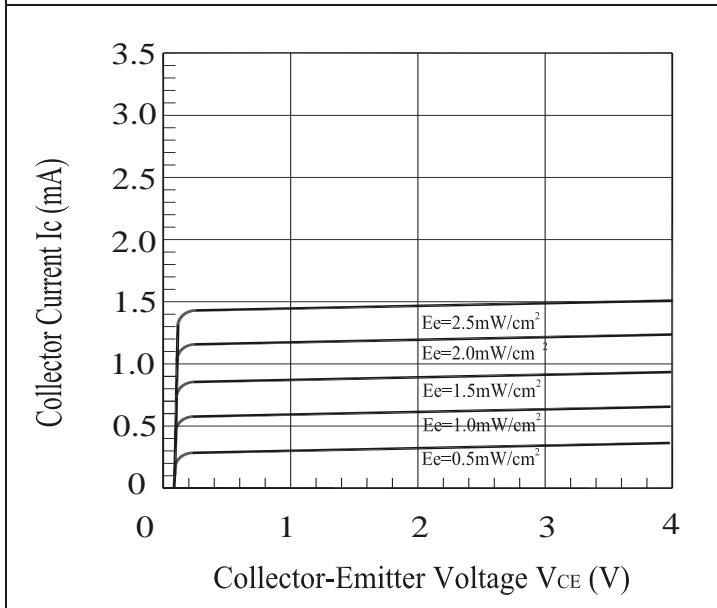
Bin	Min	Max	Unit	Condition
A1	0.30	0.60	mA	$V_{CE}=5V$ $E_e=1mW/cm^2$ $\lambda_P=940nm$
A2	0.60	1.00		

Notes: Tolerance of On State Collector Current : $\pm 10\%$

Typical Electrical/Optical/Characteristics Curves for PT



Collector Current vs. Collector-Emitter Voltage



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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 Phototransistor should be kept at 30°C or less and 90%RH or less.

2.3 The Phototransistor should be used within a year.

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

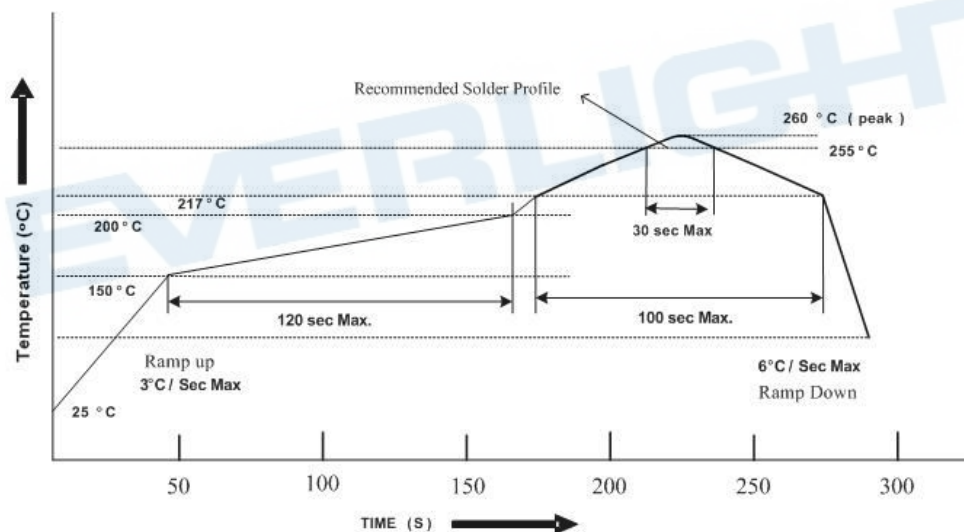
2.5 The Phototransistor should be used within 168 hours (7 days) after opening the package

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

Baking treatment : 60±5°C for 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 Phototransistor during heating.

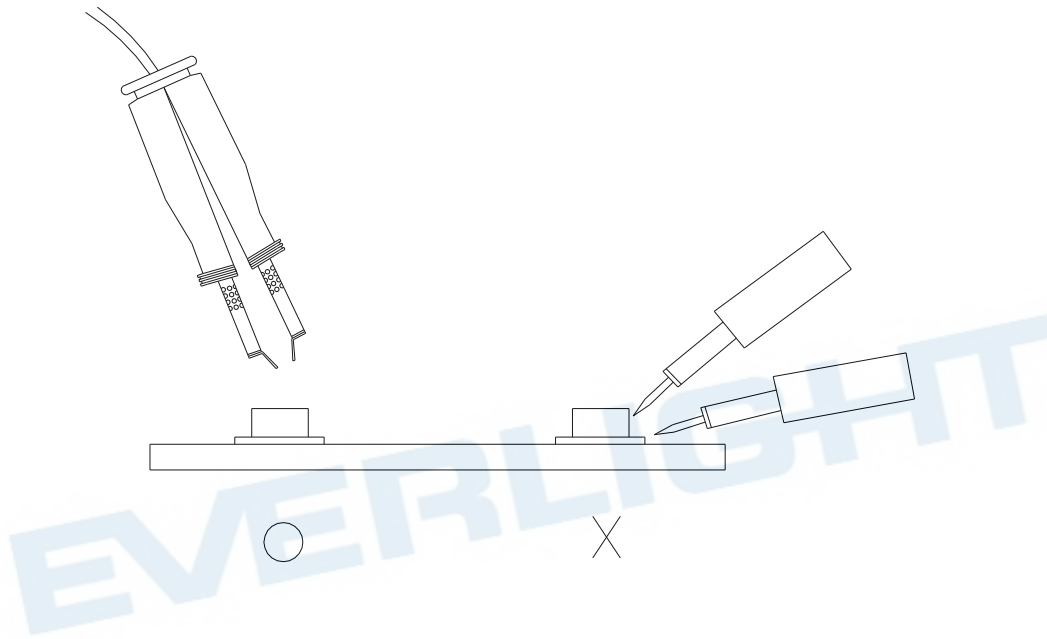
3.4 After soldering, do not warp the circuit board.

4. Soldering Iron

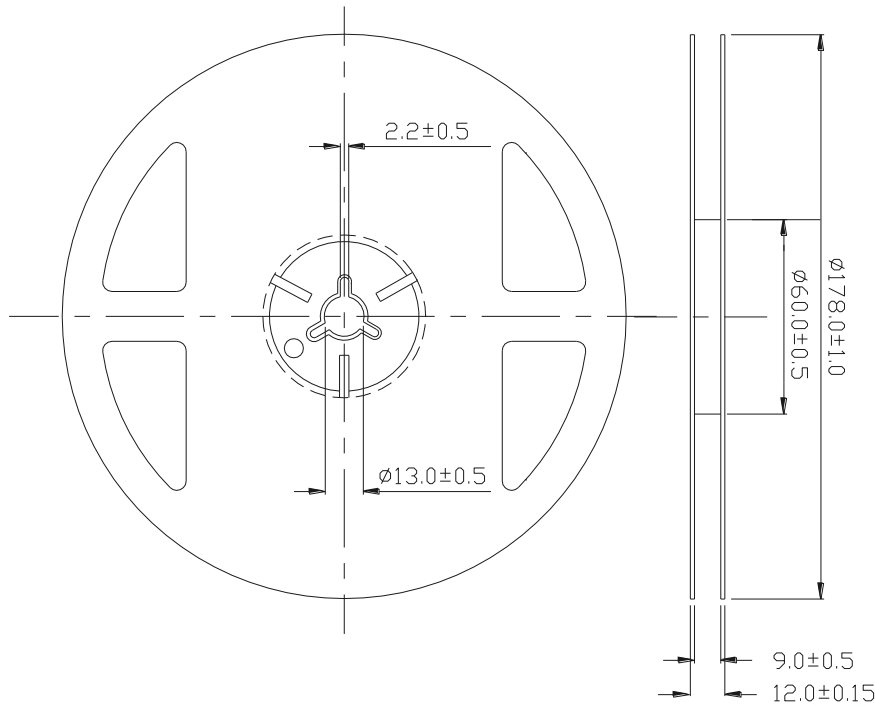
Each terminal is to go to the tip of soldering iron temperature less than 350°C for 3 seconds within once in less than the soldering iron capacity 25W. Leave two seconds and more intervals, and do soldering of each terminal. Be careful because the damage of the product is often started at the time of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

5. Repairing

Repair should not be done after the Phototransistor 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 Phototransistor will or will not be damaged by repairing.

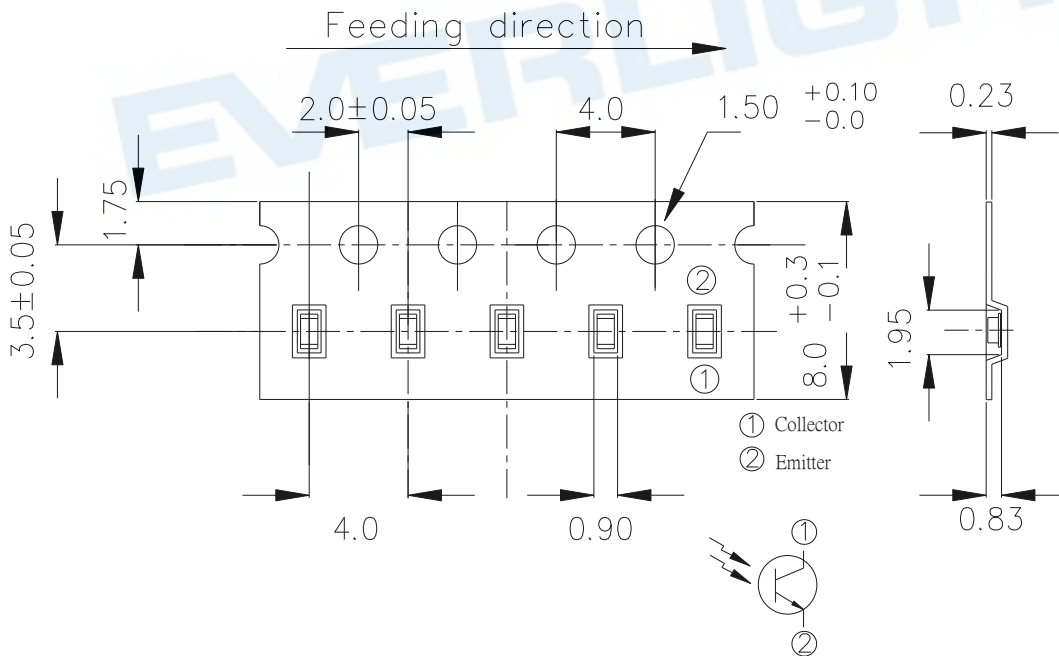


Package Dimensions



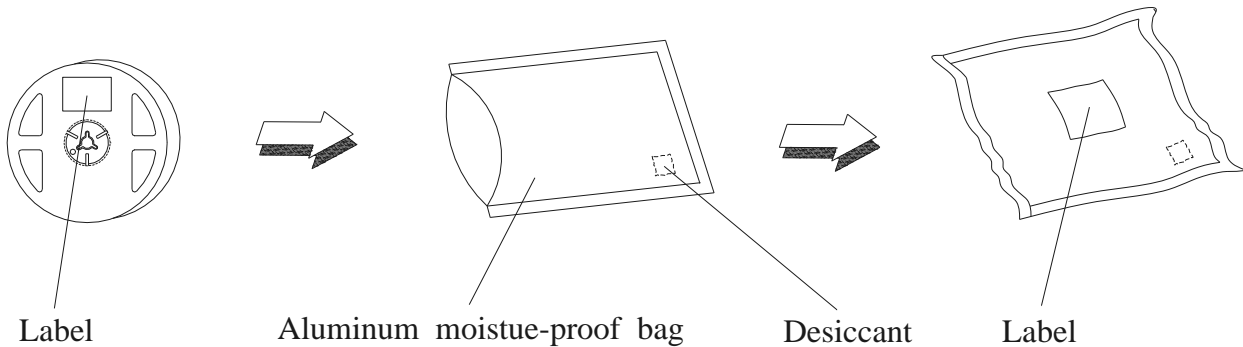
Note: The tolerances unless mentioned is $\pm 0.1\text{mm}$, Unit = mm

Carrier Tape Dimensions : (Quantity: 4000pcs/reel)

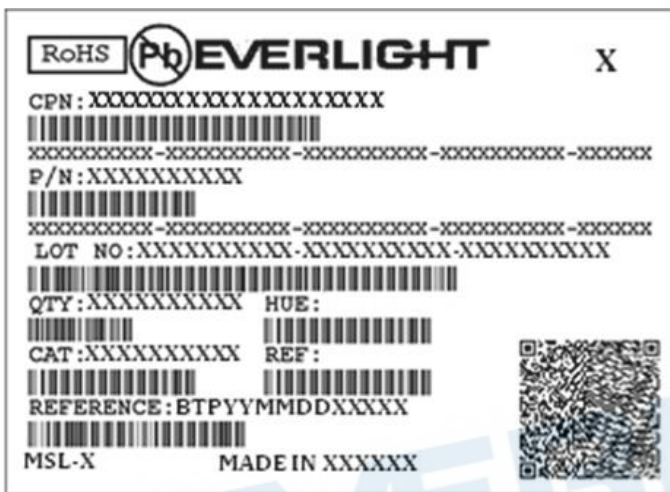


Note: The tolerances unless mentioned is $\pm 0.1\text{mm}$, Unit = mm

Packing Procedure



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
Production Place: MADE IN XXXXXX

DISCLAIMER

1. EVERLIGHT reserves the right(s) on the adjustment of product material mix for the specification.
2. The product meets EVERLIGHT published specification for a period of twelve (12) months from date of shipment.
3. The graphs shown in this datasheet are representing typical data only and do not show guaranteed values.
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