SMD ▪ REFLECTOR
67-03/RSGHBHC-B06/1T

Features

- .P-LCC-4 package.
- .White package and black surface.
- .Optical indicator.
- .Ideal for backlight and light pipe application.
- .Wide viewing angle.
- .Suitable for vapor-phase reflow, Infrared reflow and wave solder processes.
- .Computable with automatic placement equipment.
- .Available on tape and reel (8mm Tape).
- .Pb-free.
- .The product itself will remain with RoHS compliant version

Description

The 67-03 series is available in soft orange, green, blue, and yellow. Due to the package design, the LED has wide viewing angle and optimized light coupling by inter reflector. This feature makes the LED ideal for light pipe application. The low current requirement makes this device ideal for portable equipment or any other application where power is at a premium.

Applications

.Telecommunication: indicator and backlighting in telephone and fax.
.Flat backlight for LCD’s, switches and symbols.
.Light pipe application.
.General use.

Device Selection Guide

Chip Materials	Emitted Color	Resin Color
AlGaInP	Brilliant Red	Water Clear
InGaN	Brilliant Green	
InGaN	Blue	

Absolute Maximum Ratings (Ta=25℃)

Parameter	Symbol	Rating	Unit
Reverse Voltage	V_R	5	V
Forward Current	I_F	RS:50 GH:30 BH:30	mA
Peak Forward Current (Duty 1/10 @1KHz)	I_{FP}	RS:100 GH:100 BH:100	mA
Power Dissipation	Pd	RS:120 GH:110 BH:110	mW
Total Power Dissipation	Ptot	340	mW
Operating Temperature	T_{opr}	-40 ~ +85	℃
Storage Temperature	Tstg	-40 ~ +90	℃
ESD (Classification acc. AEC Q101)	ESD_{HBM}	RS:2000 GH:1000 BH:1000	V
Soldering Temperature	T_{sol}	Reflow Soldering : 260 ℃ for 10 sec. Hand Soldering : 350 ℃ for 3 sec.	

Electro-Optical Characteristics (Ta=25℃)

Parameter	Symbol		Min.	Typ.	Max.	Unit	Condition
Luminous Intensity	Iv	RS	450.0	-----	715.0	mcd	I_F=20mA
		GH	900.0	-----	1420.0		
		BH	225.0	-----	450.0		
Viewing Angle	$2\theta_{1/2}$		-----	120	-----	deg	I_F=20mA
Peak Wavelength	Λp	RS	-----	632	-----	nm	I_F=20mA
		GH		518			
		BH		468			
Dominant Wavelength	Λd	RS	617.0	-----	627.0	nm	I_F=20mA
		GH	520.0		535.0		
		BH	465.0		470.0		
Spectrum Radiation Bandwidth	Δλ	RS	-----	25	-----	nm	I_F=20mA
		GH		35			
		BH		35			
Forward Voltage	V_F	RS	---	2.0	2.4	v	I_F=20m
		GH	---	3.5	4.0		
		BH	---	3.5	4.0		
Reverse Current	I_R		-----	-----	10	μA	V_R=5V

Note:
1. Tolerance of Luminous Intensity: ±10%
2. Tolerance of Dominant Wavelength: ±1nm
3. Tolerance of Forward Voltage: ±0.1V

Floating Bin(RS)
Bin Range of Luminous Intensity

Symbol	Bin Code	Min.	Max.	Unit	Condition
RS	U1	450.0	565.0	mcd	I_F =20mA
	U2	565.0	715.0		

Bin Range of Dominant Wavelength

Symbol	Bin Code	Min.	Max.	Unit	Condition
RS	1	617.0	622.0	nm	I_F =20mA
	2	622.0	627.0		

Floating Bin(GH)
Bin Range of Luminous Intensity

Symbol	Bin Code	Min.	Max.	Unit	Condition
GH	V2	900.0	1120.0	mcd	I_F =20mA
	W1	1120.0	1420.0		

Bin Range of Dominant Wavelength

Symbol	Bin Code	Min.	Max.	Unit	Condition
GH	X	520.0	525.0	nm	I_F =20mA
	Y	525.0	530.0		
	Z	530.0	535.0		

Note:
1.Tolerance of Luminous Intensity: ±10%
2.Tolerance of Dominant Wavelength: ±1nm
3.Tolerance of Forward Voltage: ±0.1V

Floating Bin(BH)
Bin Range of Luminous Intensity

Symbol	Bin Code	Min.	Max.	Unit	Condition
BH	S2	225.0	285.0	mcd	I_F =20mA
	T1	285.0	360.0		
	T2	360.0	450.0		

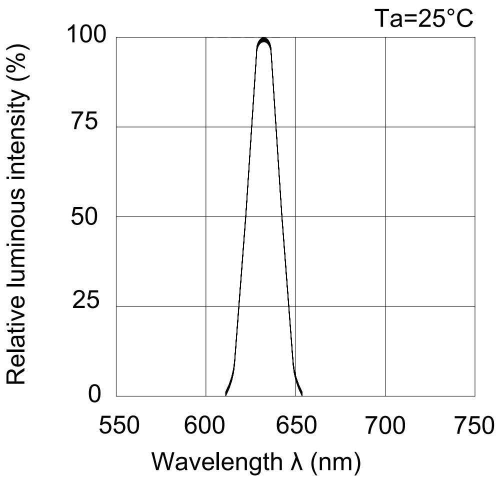
Bin Range of Dominant Wavelength

Symbol	Bin Code	Min.	Max.	Unit	Condition
BH	X	465.0	470.0	nm	I_F =20mA

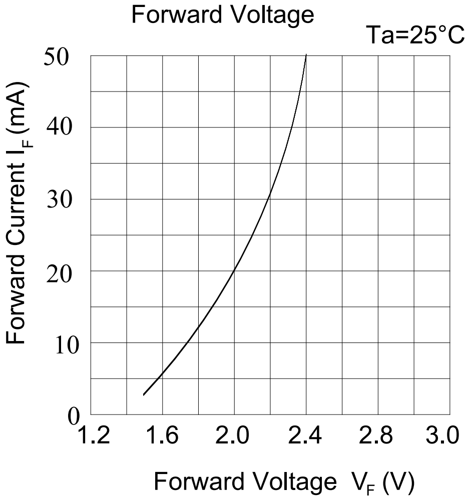
Note:
1.Tolerance of Luminous Intensity: ±10%
2.Tolerance of Dominant Wavelength: ±1nm
3.Tolerance of Forward Voltage: ±0.1V

Typical Electro-Optical Characteristics Curves(RS)

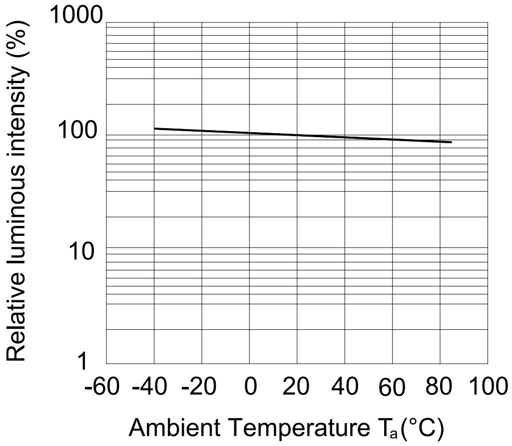
Spectrum Distribution



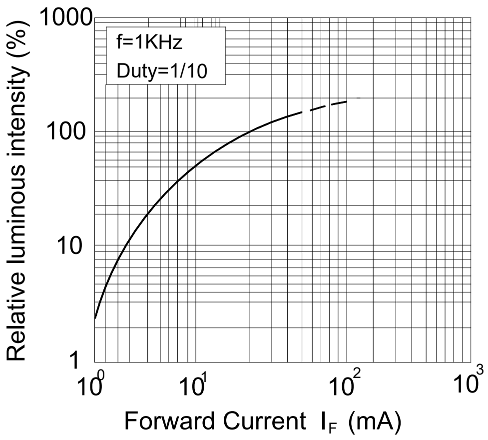
Forward Current vs. Forward Voltage



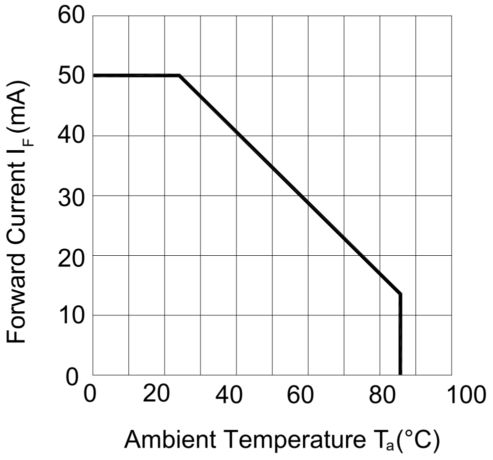
Relative Luminous Intensity vs. Ambient Temperature



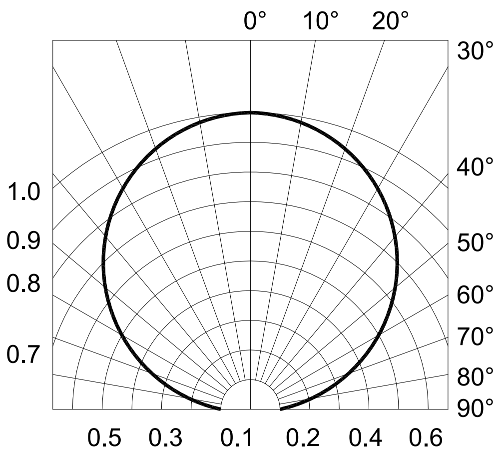
Relative Luminous Intensity vs. Forward Current



Forward Current Derating Curve

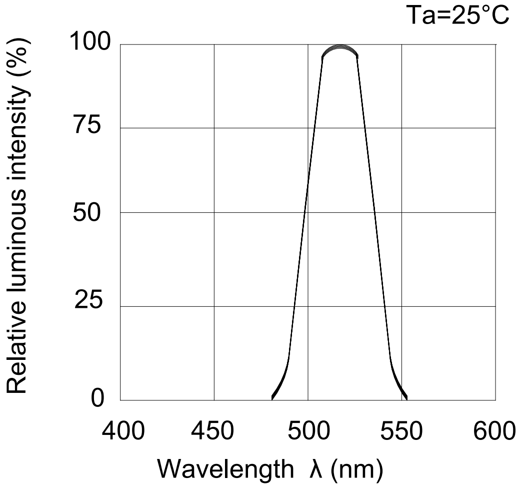


Radiation Diagram

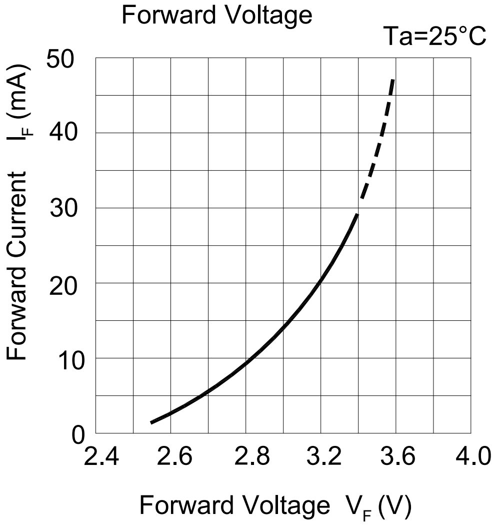


Typical Electro-Optical Characteristics Curves(GH)

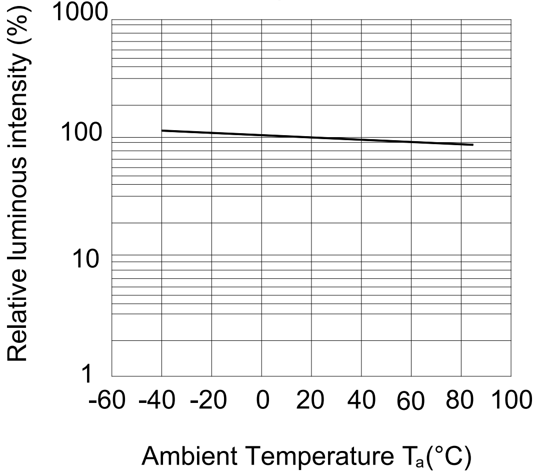
Spectrum Distribution



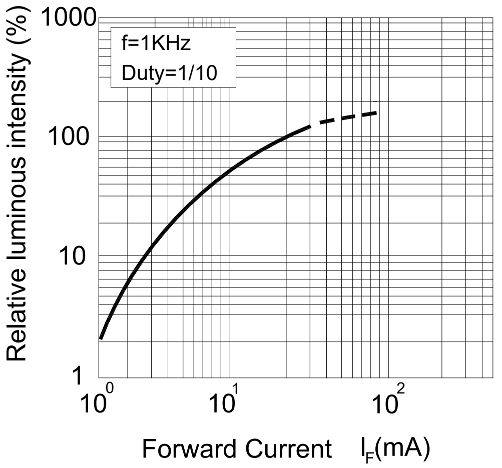
Forward Current vs.
Forward Voltage

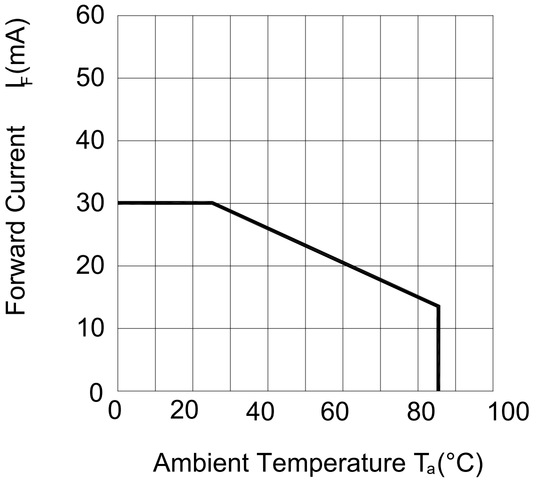


Relative Luminous Intensity vs.
Ambient Temperature

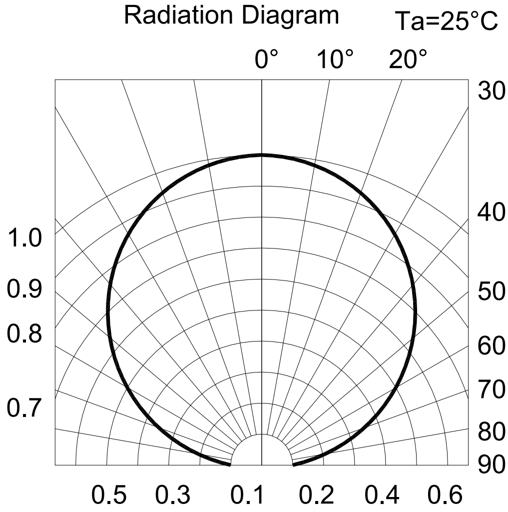


Relative Luminous Intensity vs.
Forward Current



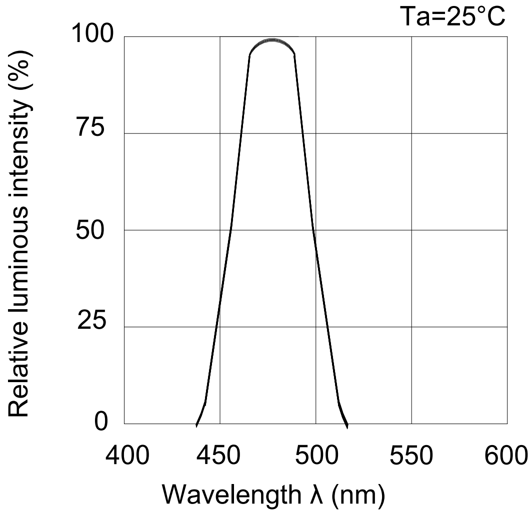


Radiation Diagram

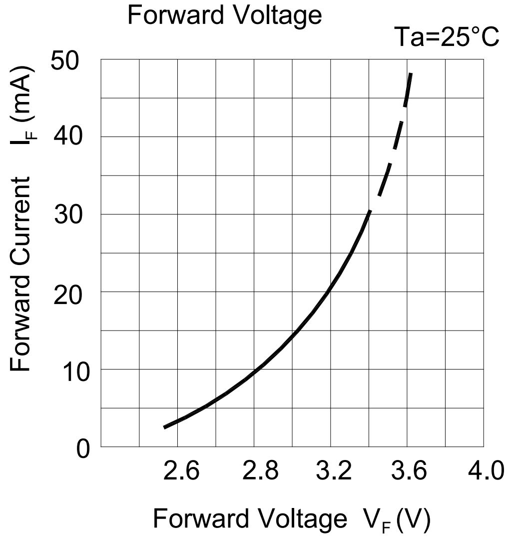


Typical Electro-Optical Characteristics Curves(BH)

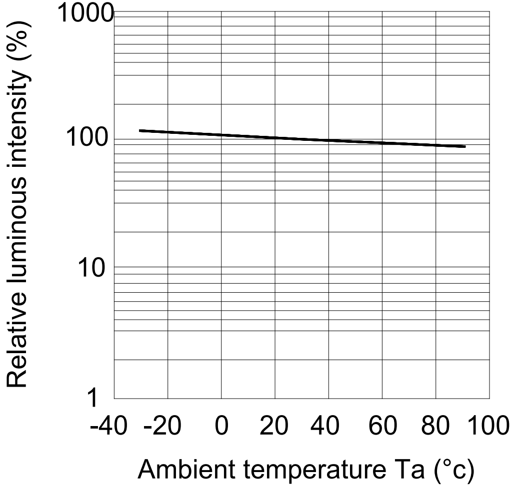
Spectrum Distribution



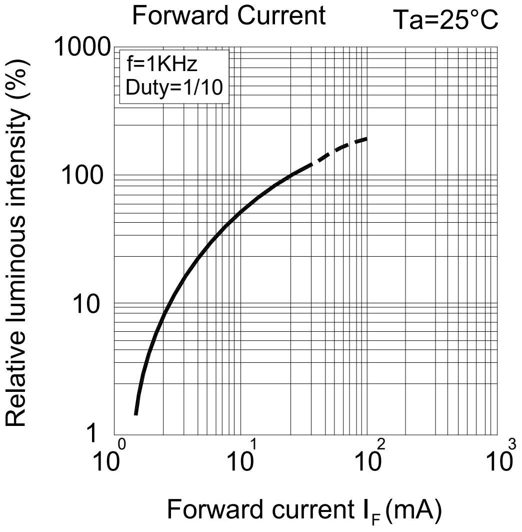
Forward Current vs.
Forward Voltage



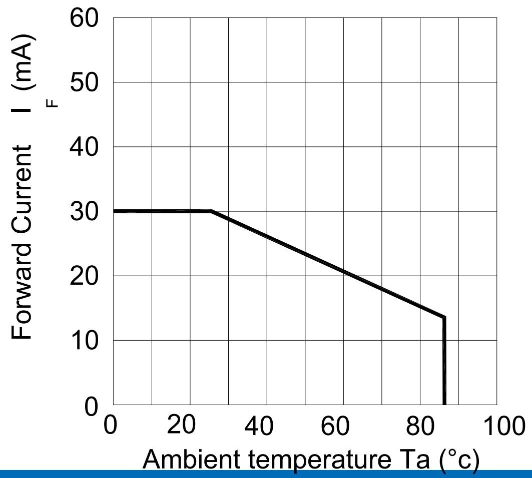
Relative Luminous Intensity vs.
Ambient Temperature



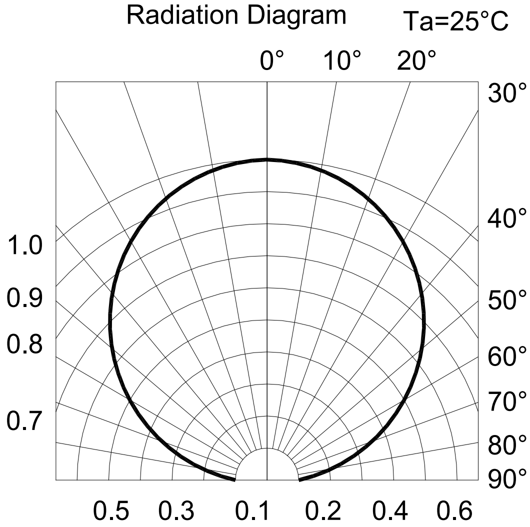
Relative Luminous Intensity vs.
Forward Current



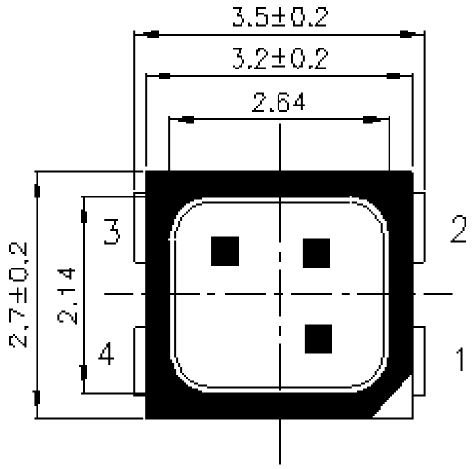
Forward Current Derating Curve

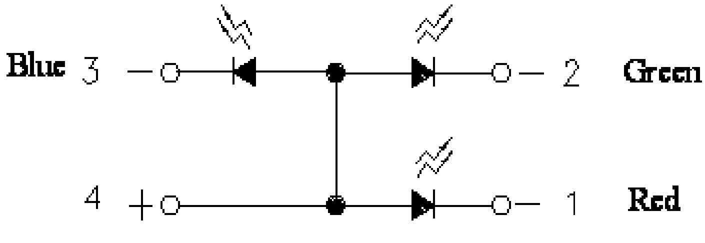


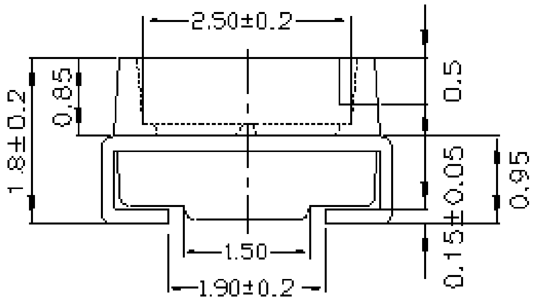
Radiation Diagram

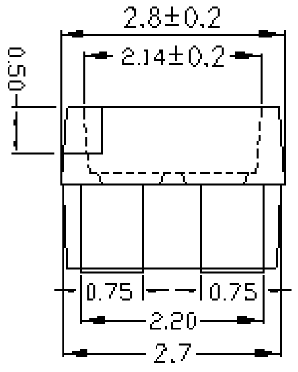


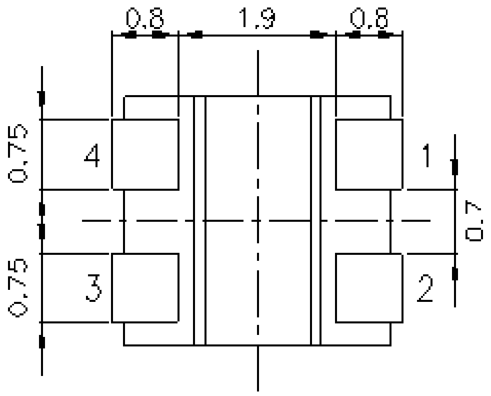
Package Dimension



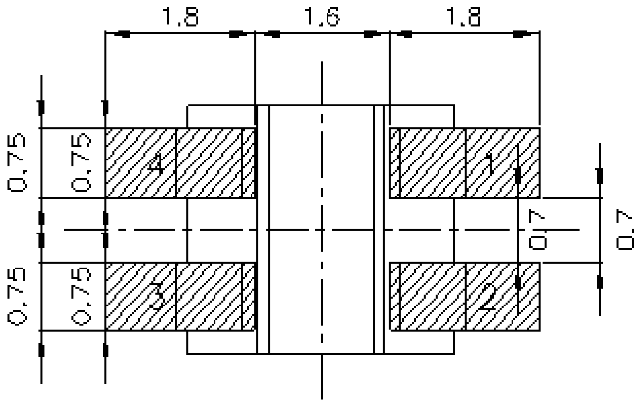








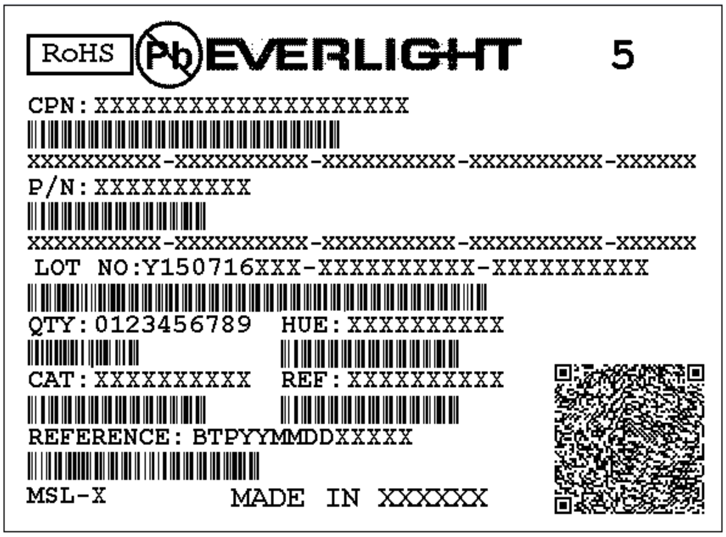
Recommended Solder Pad



Note: Tolerances unless mentioned ±0.1mm. Unit = mm

Moisture Resistant Packing Materials

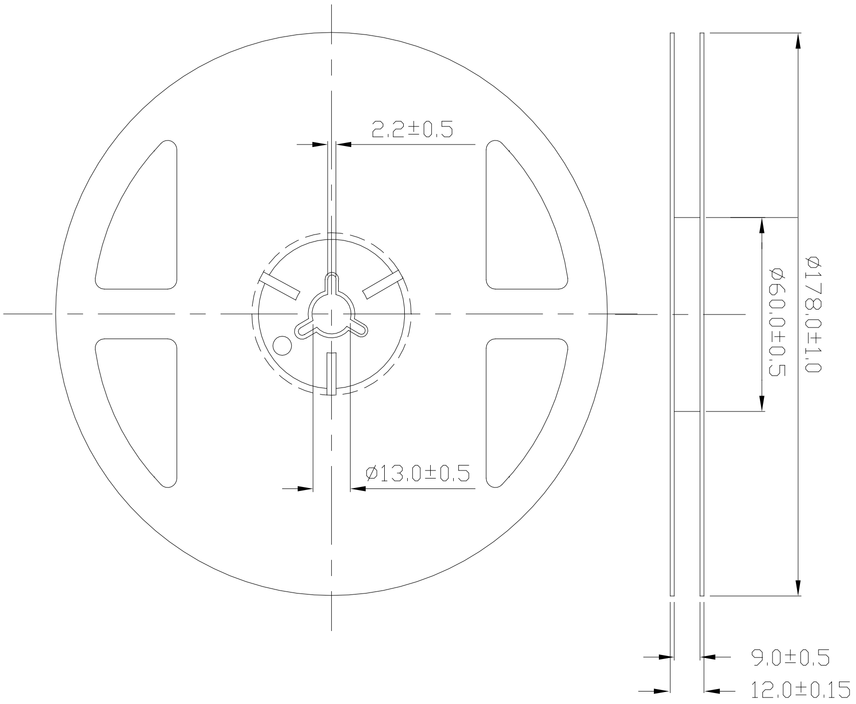
Label Explanation



RoHS Pb EVERLIGHT 5
CPN: XXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX-XXXXXX
P/N: XXXXXXXXXX
XXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX-XXXXXX
LOT NO:Y150716XXX-XXXXXXXXXX-XXXXXXXXXX
QTY: 0123456789 HUE: XXXXXXXXXX
CAT: XXXXXXXXXX REF: XXXXXXXXXX
REFERENCE: BTPYYMMDDXXXXX
MSL-X MADE IN XXXXXX

- CPN: Customer's Product Number
- P/N: Product Number
- QTY: Packing Quantity
- CAT: Luminous Intensity Rank
- HUE: Dom. Wavelength Rank
- REF: Forward Voltage Rank
- LOT No: Lot Number

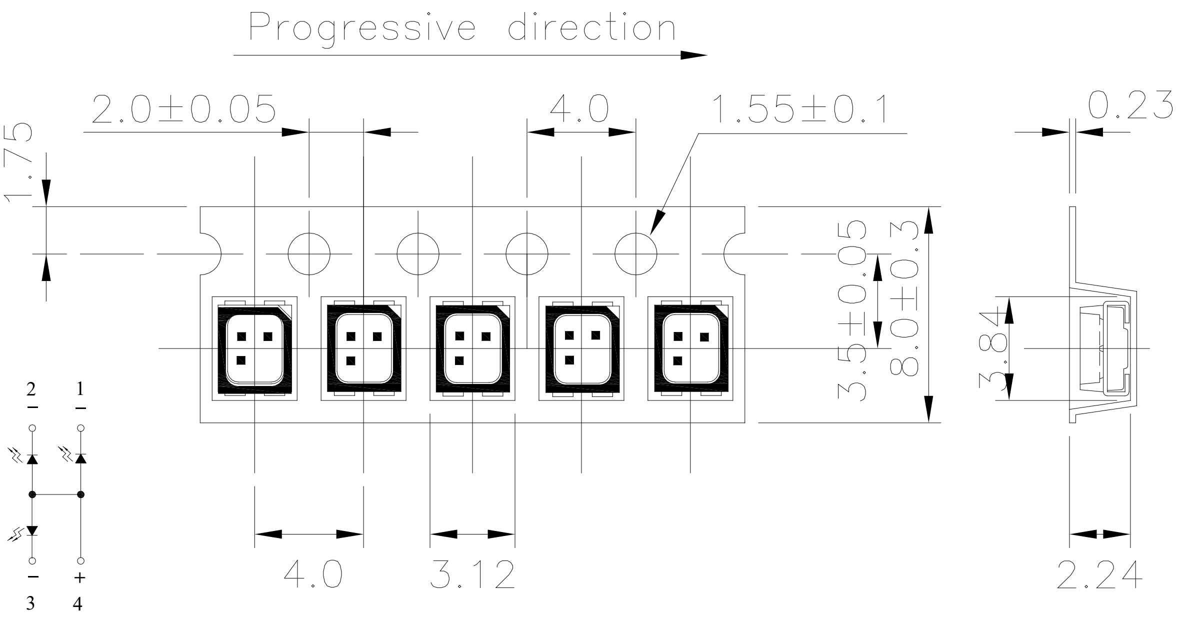
Reel Dimensions



Note: Tolerances unless dimension ±0.1mm; Unit = mm

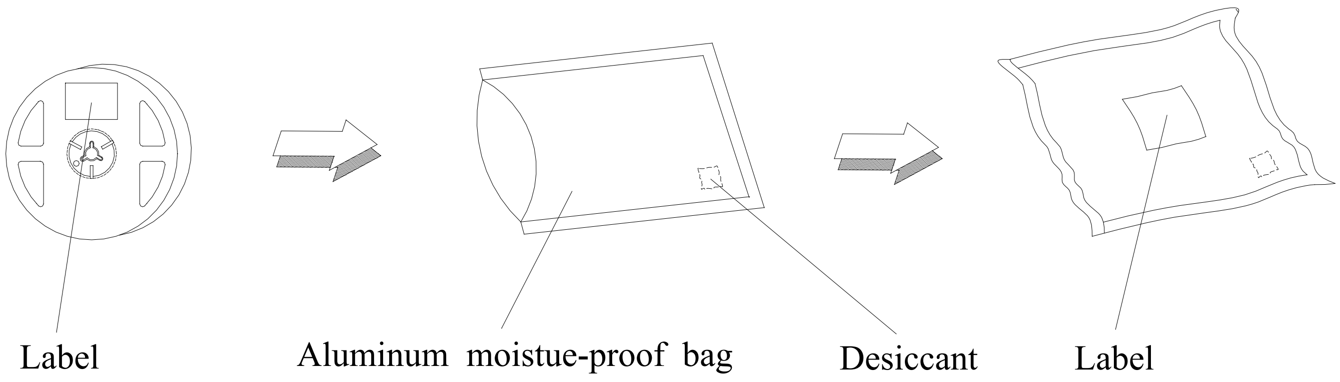
Carrier Tape Dimensions:

Minimum packing amount is 1000 pcs per reel



Note: Tolerances unless mentioned ±0.1mm. Unit = mm

Moisture Resistant Packing Process



Note: Tolerances unless mentioned ±0.1mm. Unit = mm

Precautions for Use

1. Over-current-proof

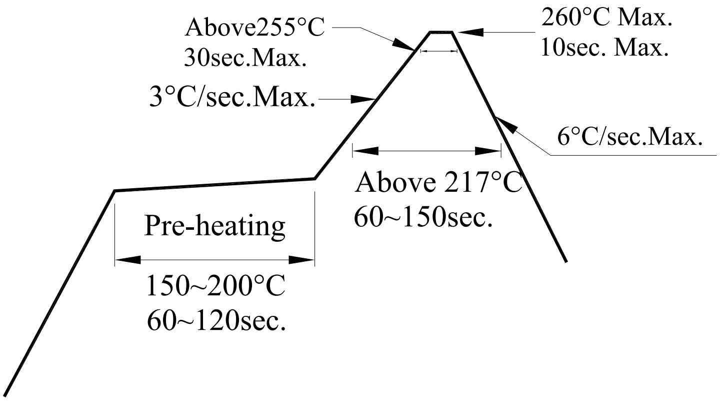
   Customer must apply resistors for protection, otherwise slight voltage shift will cause big current change (Burn out will happen).

2. Storage

   2.1 Do not open moisture proof bag before the products are ready to use.
   2.2 Before opening the package: The LEDs should be used within one year and kept at 30℃ or less and 70%RH or less.
   2.3 After opening the package: We recommend that the LED should be soldered quickly (within 3 days). The soldering condition is 30℃ or less and 60%RH or less. If unused LEDs remain, it should be stored in moisture proof packages.
   2.4 If the moisture absorbent material (silica gel) has faded away or the LEDs have exceeded the storage time, baking treatment should be performed using the following conditions.Baking treatment: 60±5℃ for 24 hours. (One time only)

3. Soldering Condition

   3.1 Pb-free solder temperature profile



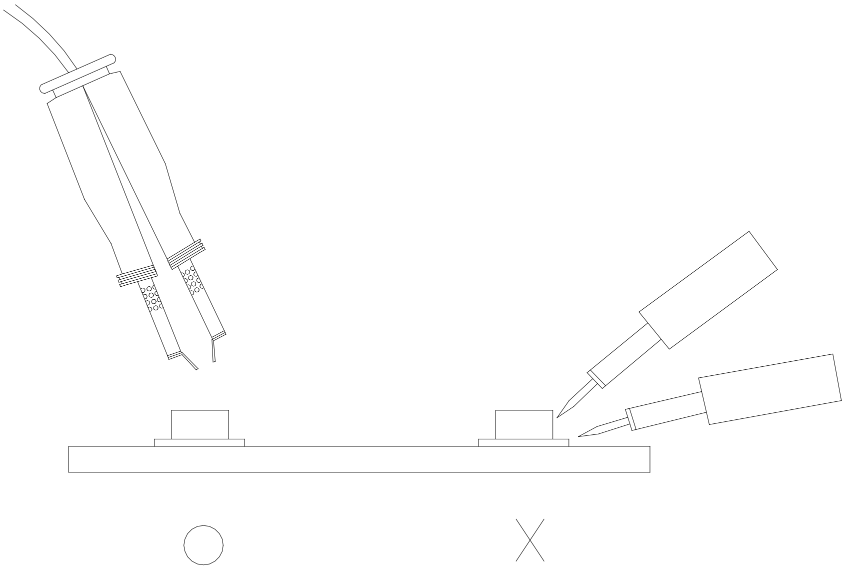
   3.2 Reflow soldering should not be done more than two times.
   3.3 When soldering, do not put stress on the LEDs during heating.
   3.4 After soldering, do not warp the circuit board.

4.Soldering Iron

Each terminal is to go to the tip of soldering iron temperature less than 350℃ 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 LEDs 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 LEDs will or will not be damaged by repairing.



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.
4. When using this product, please observe the absolute maximum ratings and the instructions for using outlined in these specification sheets. EVERLIGHT assumes no responsibility for any damage resulting from the use of the product which does not comply with the absolute maximum ratings and the instructions included in these specification sheets.
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6. This product is not intended to be used for military, aircraft, automotive, medical, life sustaining or life saving applications or any other application which can result in human injury or death. Please contact authorized Everlight sales agent for special application request.

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