

Device Selection Guide

Code	Chip Materials	Emitted Color	Resin Color
RS	AlInGaN	Brilliant Red	Water Clear
BH	InGaN	Blue	
GH	InGaN	Brilliant Green	

Absolute Maximum Ratings (Ta=25℃)

Parameter	Symbol	Code	Rating	Unit
Reverse Voltage	V_R		5	V
Forward Current	I_F		25	mA
Peak Forward Current (Duty 1/10 @1KHz)	I_{FP}	RS	60	mA
		BH	100	
		GH	100	
Power Dissipation	P_d	RS	60	mW
		BH	95	
		GH	95	
Electrostatic Discharge(HBM)	ESD	RS	2000	V
		BH	150	
		GH	150	
Operating Temperature	T_{opr}		-40 ~ +85	℃
Storage Temperature	T_{stg}		-40 ~ +90	℃
Soldering Temperature	T_{sol}		Reflow Soldering : 260 ℃ for 10 sec. Hand Soldering : 350 ℃ for 3 sec.	

Electro-Optical Characteristics (Ta=25°C)

Parameter	Symbol	Code	Min.	Typ.	Max.	Unit	Condition
Luminous Intensity	I_v	RS	180	-----	360	mcd	
		BH	72	-----	140		
		GH	450	-----	900		
Viewing Angle	$2\theta_{1/2}$		-----	120	-----	Deg	
Peak Wavelength	λ_p	RS	-----	632	-----	nm	
		BH	-----	468	-----		
		GH	-----	518	-----		
Dominant Wavelength	λ_d	RS	620	-----	628	nm	$I_F=20mA$
		BH	460	-----	470		
		GH	525	-----	535		
Spectrum Radiation Bandwidth	$\Delta\lambda$	RS	-----	20	-----	nm	
		BH	-----	25	-----		
		GH	-----	35	-----		
Forward Voltage	V_F	RS	1.7	-----	2.4	V	
		BH	2.7	-----	3.7		
		GH	2.7	-----	3.7		
Reverse Current	I_R	RS			10	μA	$V_R=5V$
		BH			50		
		GH	-----	-----	50		

Note:

1. Tolerance of Luminous Intensity: $\pm 11\%$
2. Tolerance of Dominant Wavelength: $\pm 1nm$
3. Tolerance of Forward Voltage: $\pm 0.1V$

RS

Bin Range of Luminous Intensity

Bin Code	Min.	Max.	Unit	Condition
S1	180	225	mcd	I _F =20mA
S2	225	285		
T1	285	360		

BH

Bin Range of Luminous Intensity

Bin Code	Min.	Max.	Unit	Condition
Q1	72	90	mcd	I _F =20mA
Q2	90	112		
R1	112	140		

GH

Bin Range of Luminous Intensity

Bin Code	Min.	Max.	Unit	Condition
U1	450	570	mcd	I _F =20mA
U2	570	720		
V1	720	900		

Bin Range Of Dom. Wavelength

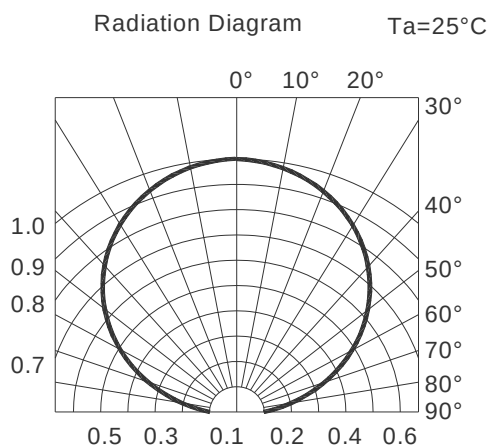
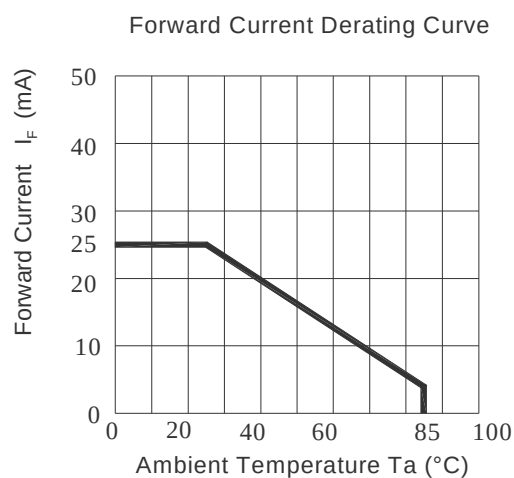
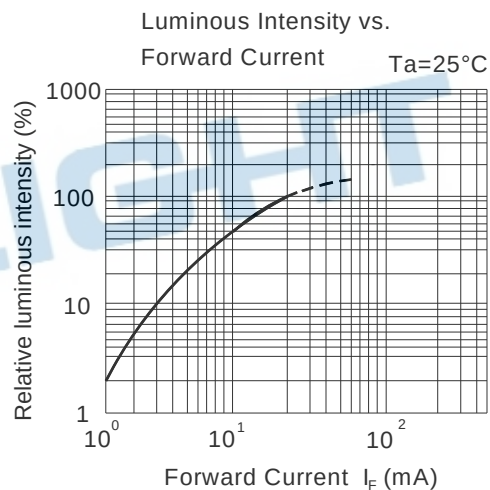
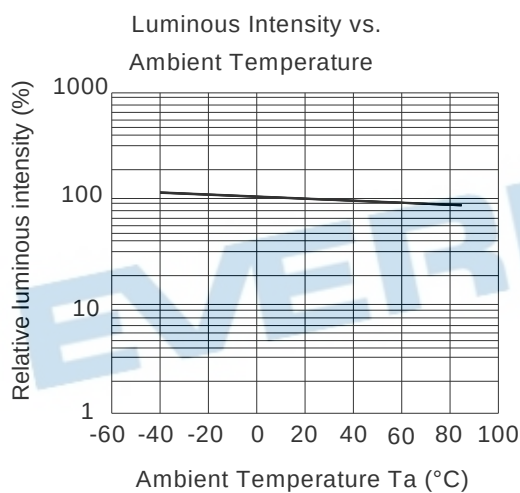
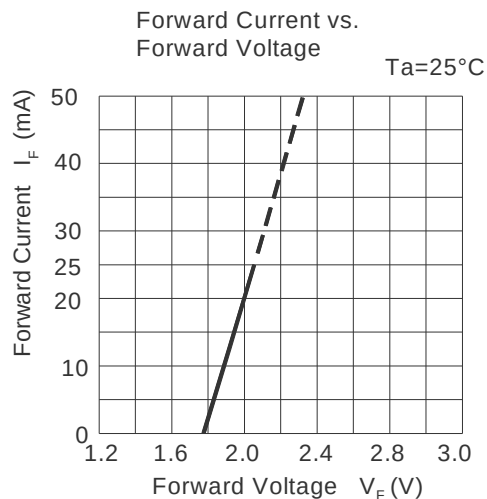
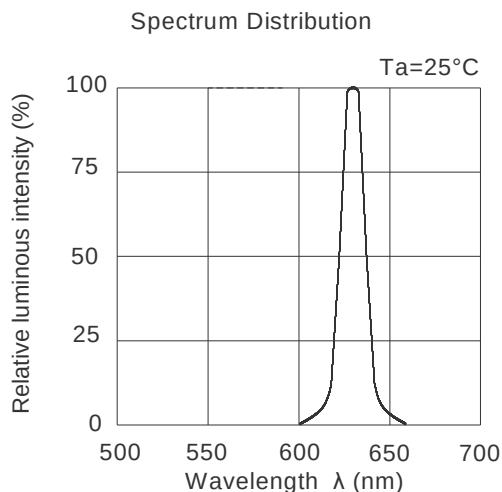
Bin Code	Min.	Max.	Unit	Condition
Y	525	530	nm	I _F =20mA
Z	530	535		

Note:

1. Tolerance of Luminous Intensity: ±11%
2. Tolerance of Dominant Wavelength: ±1nm

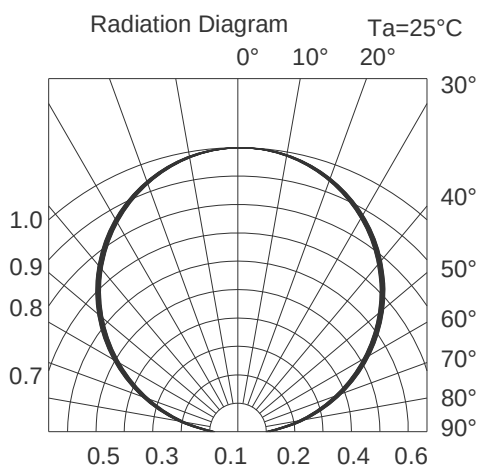
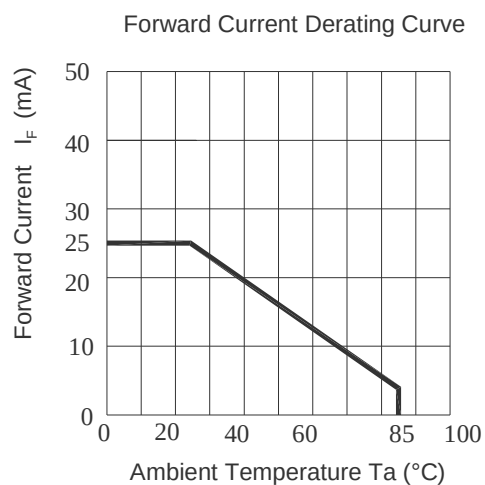
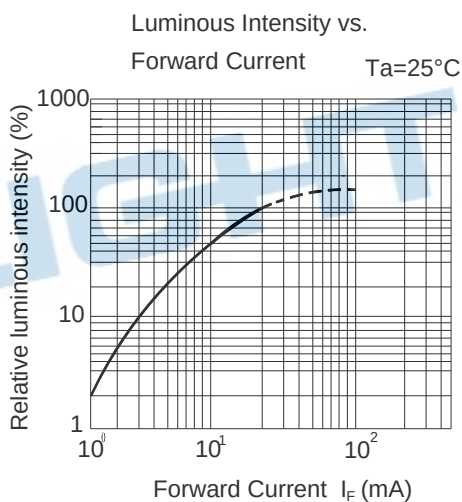
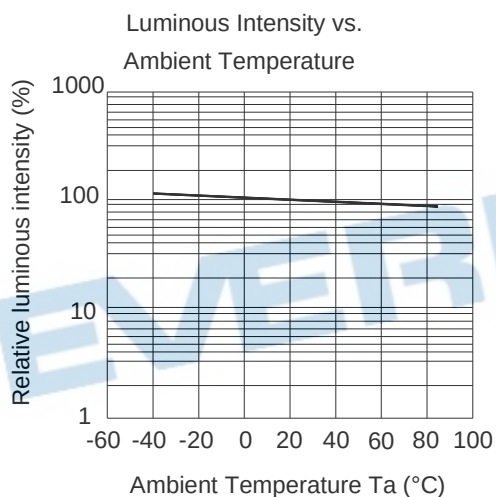
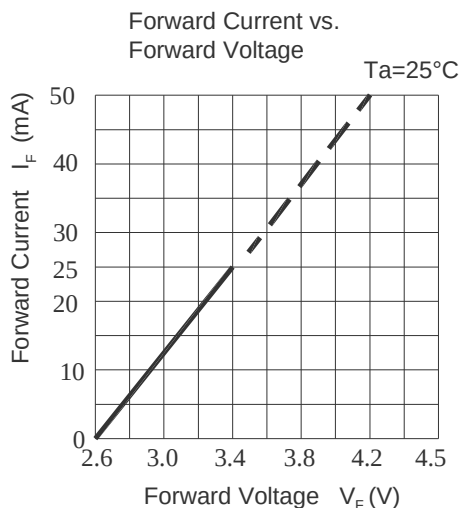
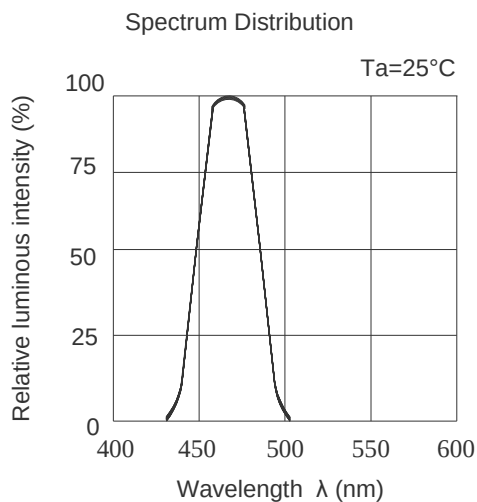
Typical Electro-Optical Characteristics Curves

RS



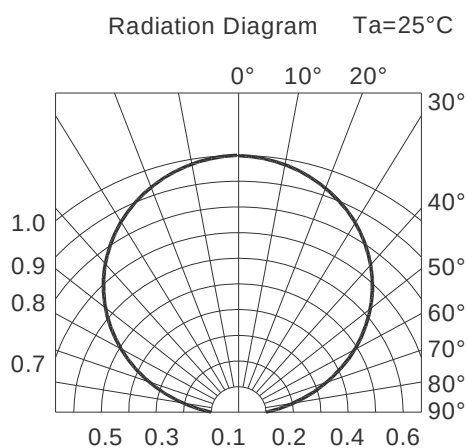
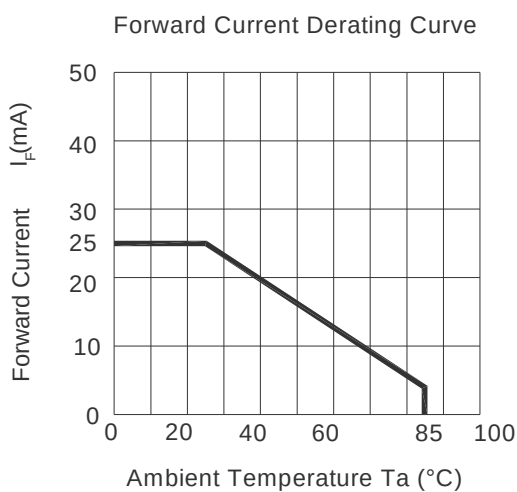
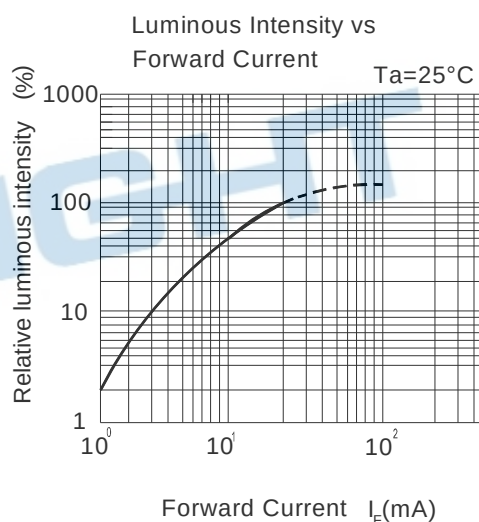
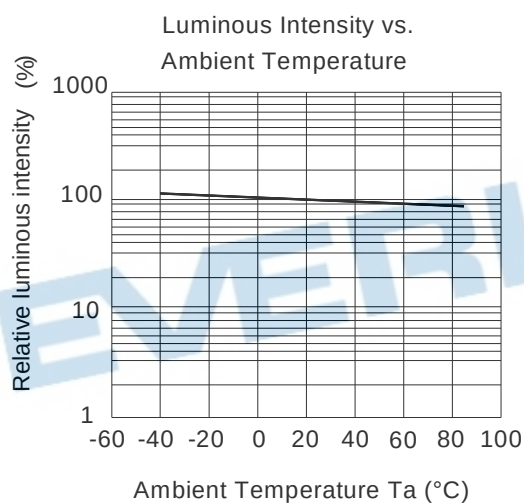
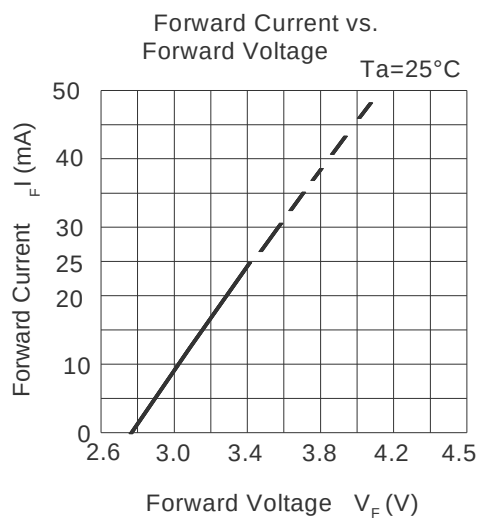
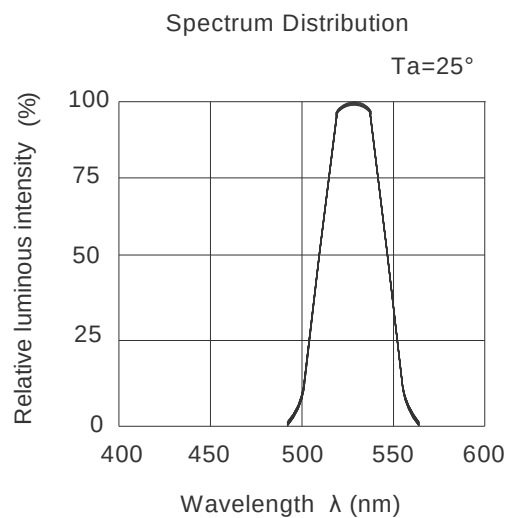
Typical Electro-Optical Characteristics Curves

BH

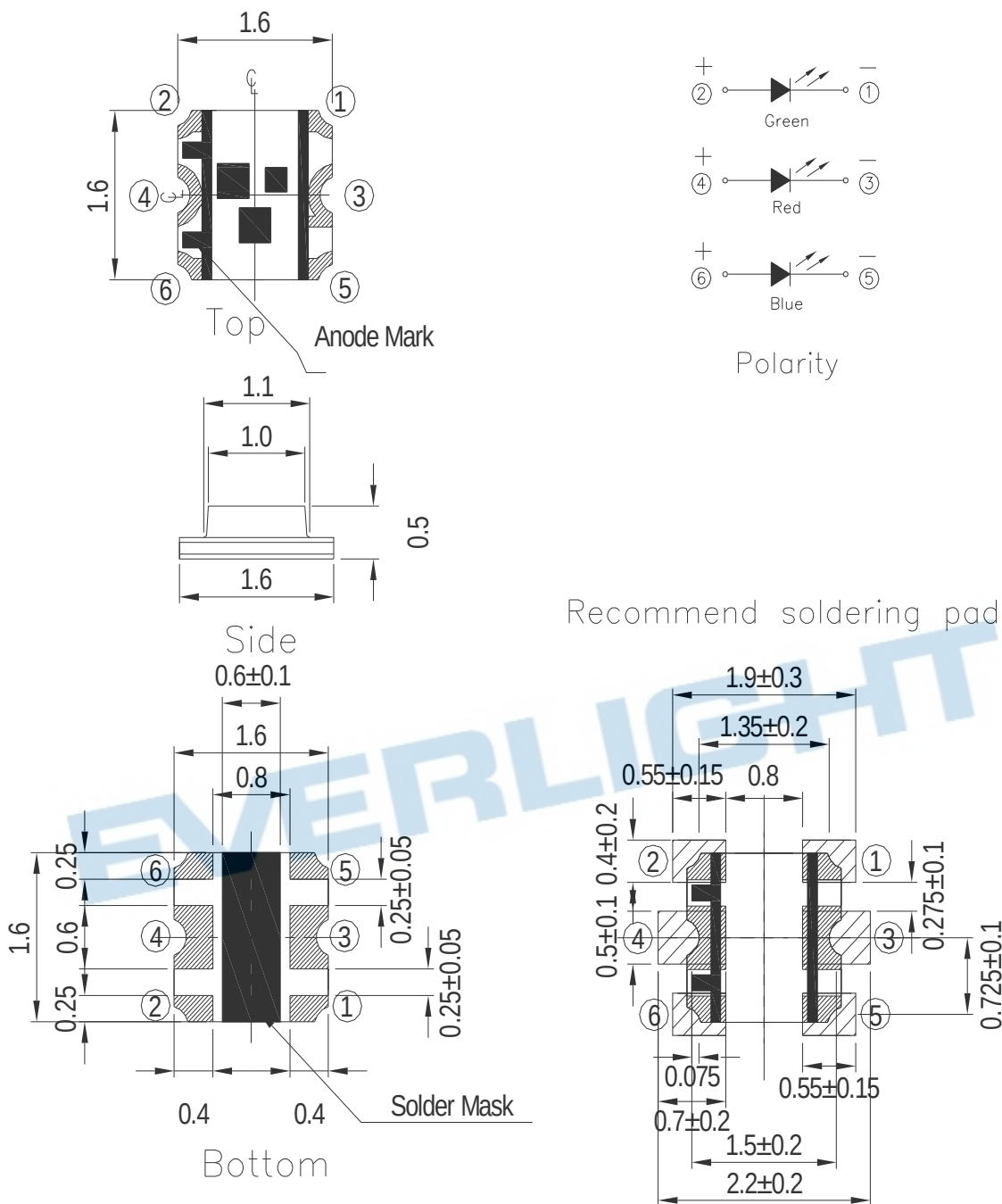


Typical Electro-Optical Characteristics Curves

GH



Package Dimension

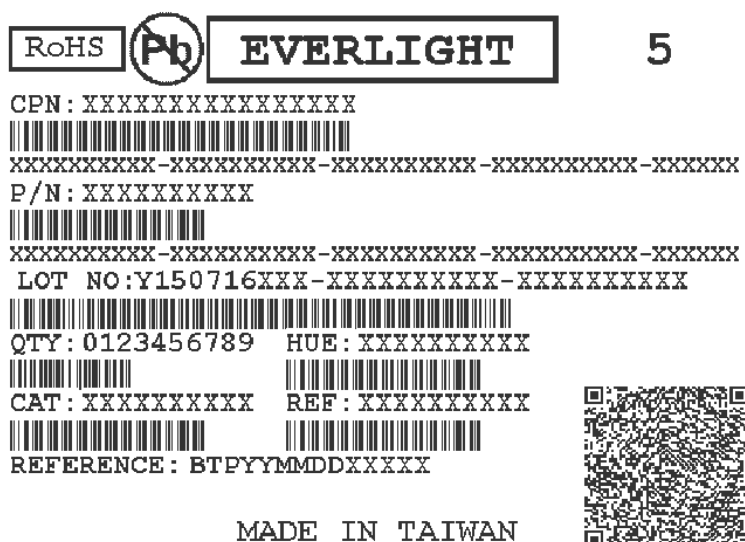


Suggested pad dimension is just for reference only.
Please modify the pad dimension based on individual need.

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

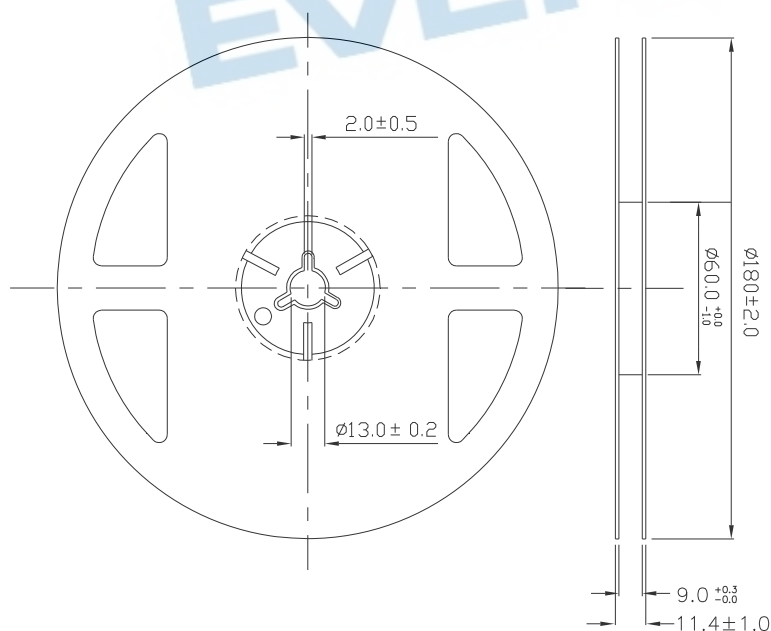
Moisture Resistant Packing Materials

Label Explanation



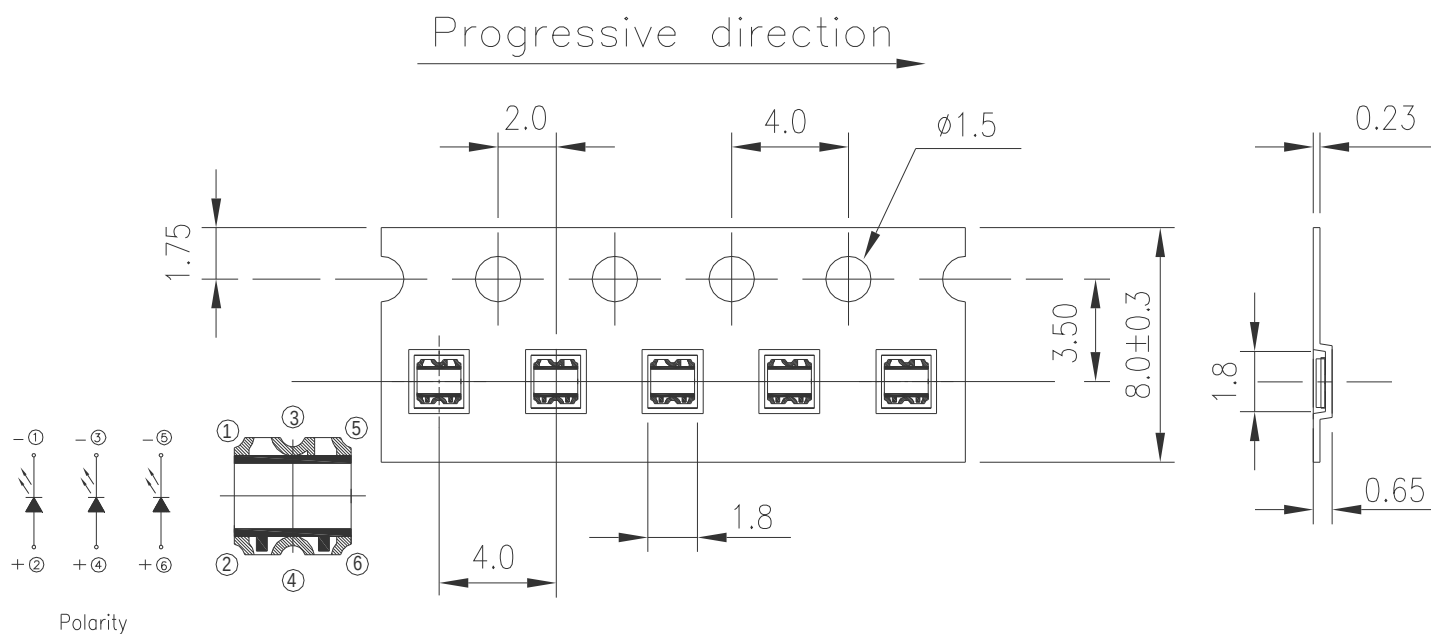
- CPN: Customer's Product Number
 - P/N: Product Number
 - QTY: Packing Quantity
 - CAT: Luminous Intensity Rank
 - HUE: Chromaticity Coordinates & Dom.
- Wavelength Rank
- REF: Forward Voltage Rank
 - LOT No: Lot Number

Reel Dimensions



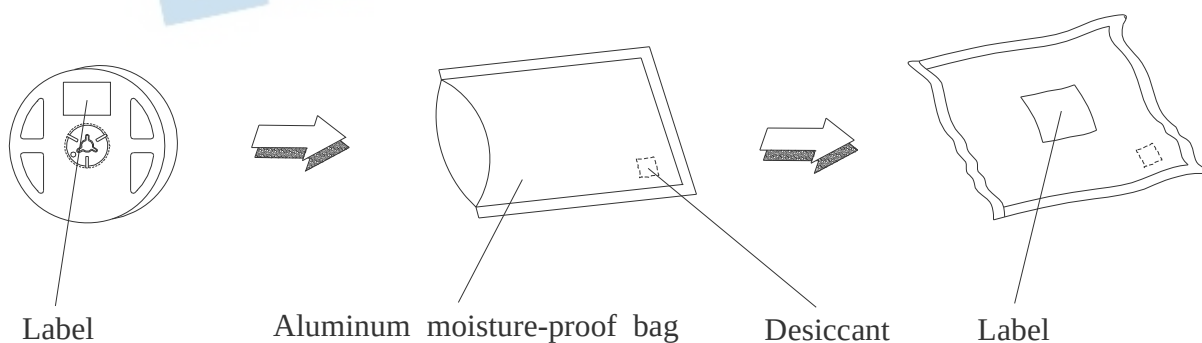
Note: The tolerances unless mentioned is ± 0.1 mm ,Unit = mm

Carrier Tape Dimensions: Loaded quantity 2000 PCS per reel



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

Moisture Resistant Packaging



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

2.3 After opening the package: The LED's floor life is 1 year under 30°C or less and 60% RH or less.

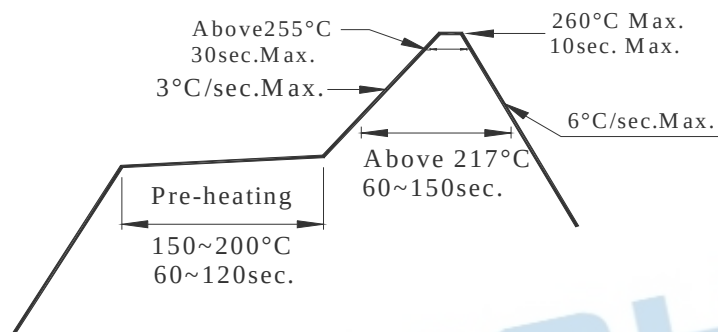
If unused LEDs remain, it should be stored in moisture proof packages.

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°C for 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 LEDs during heating.

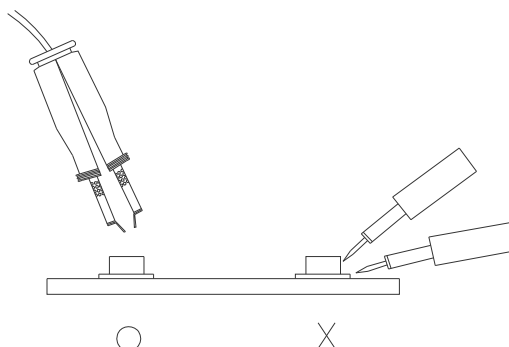
3.4 After soldering, do not warp the circuit board.

4. Soldering Iron

Each terminal is to go to the tip of soldering iron temperature less than 350°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 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.



Application Restrictions

High reliability applications such as military/aerospace, automotive safety/security systems, and medical equipment may require different product. If you have any concerns, please contact Everlight before using this product in your application. This specification guarantees the quality and performance of the product as an individual component. Do not use this product beyond the specification described in this document.

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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