DATASHEET

SMD- Full Color Top View LEDs

67-23/R6GHBHC-B01/2T

Features

. P-LCC-4 package.
. White package.
. Optical indicator.
. Colorless clear window.
. Ideal for backlight and light pipe application.
. Inter reflector.
. Wide viewing angle.
. Suitable for vapor-phase reflow.
. Computable with automatic placement equipment.
. Available on tape and reel (8mm Tape).
. 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).
. Precondition: Bases on JEDEC J-STD 020D Level 3

Descriptions

. The 67-23 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 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

- Automotive: backlighting in dashboard and switch.
- Telecommunication: indicator and backlighting in telephone and fax.
- Flat backlight for LCD's, switches and symbols.
- Light pipe application.
- General use.

Device Selection Guide

Type	Chip Materials	Emitted Color	Resin Color
R6	AlGaInP	Brilliant Red	Water Clear
GH	InGaN	Brilliant Green	Water Clear
BH	InGaN	Blue	Water Clear

Absolute Maximum Ratings (Ta=25℃)

Parameter	Symbol	Type	Rating	Unit
Reverse Voltage	V_R		5	V
Forward Current	I_F	R6	25	mA
		GH	25	
		BH	25	
Peak Forward Current (Duty 1/10 @1KHz)	I_{FP}	R6	100	mA
		GH	100	
		BH	100	
Power Dissipation	Pd	R6	120	mW
		GH	110	
		BH	110	
Junction Temperature	T_j		115	℃
Operating Temperature	T_{opr}		-40 ~ +85	℃
Storage Temperature	Tstg		-40 ~ +90	℃
ESD	ESD	R6	2000	V
		GH	1000	V
		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	Type	Min.	Typ.	Max.	Unit	Condition
Luminous Intensity	Iv	R6	57	---	112	mcd	I_F=10mA
		GH	225	---	565		
		BH	72	---	180		
Viewing Angle	$2\theta_{1/2}$		---	120	---	deg	I_F=10mA
Peak Wavelength	λp	R6	---	632	---	nm	I_F=10mA
		GH	---	518	---		
		BH	---	468	---		
Dominant Wavelength	λd	R6	617	---	628	nm	I_F=10mA
		GH	525	---	540		
		BH	466	---	474		
Spectrum Radiation Bandwidth	△λ	R6	---	20	---	nm	I_F=10mA
		GH	---	35	---		
		BH	---	35	---		
Forward Voltage	V_F	R6	---	2.0	2.4	V	I_F=10mA
		GH	---	3.5	3.9		
		BH	---	3.5	3.9		
Reverse Current	I_R	R6	---	---	10	μA	V_R=5V
		GH	---	---	50	μA	
		BH	---	---	50	μA	

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

Bin Range of Luminous Intensity

Type	Bin Code	Min.	Max.	Unit	Condition
R6	P2	57	72	mcd	I_F=10mA
	Q1	72	90		
	Q2	90	112		
GH	S2	225	285		
	T1	285	360		
	T2	360	450		
	U1	450	565		
BH	Q1	72	90		
	Q2	90	112		
	R1	112	140		
	R2	140	180		

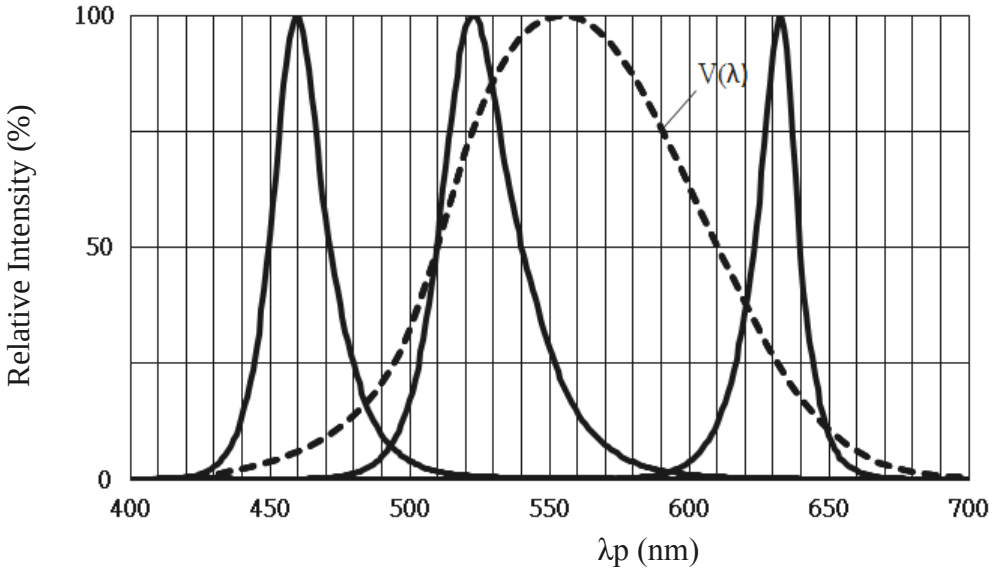
Note:
Tolerance of Luminous Intensity: ±10%

Bin Range of Dominant Wavelength

Chip	Bin Code	Min.	Max.	Unit	Condition
R6	---	617	628	nm	I_F=10mA
GH	0	525	530		
	1	530	535		
	2	535	540		
BH	---	466	474		

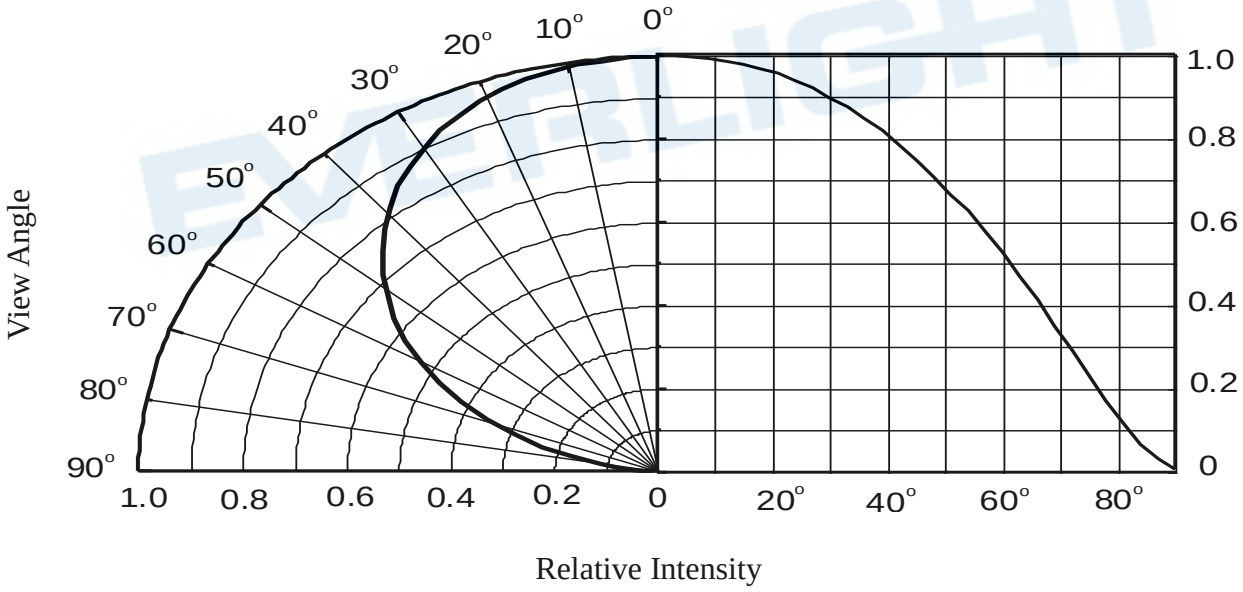
Note:
Tolerance of Dominant Wavelength: ±1nm

Typical Electro-Optical Characteristics Curves
Typical Curve of Spectral Distribution



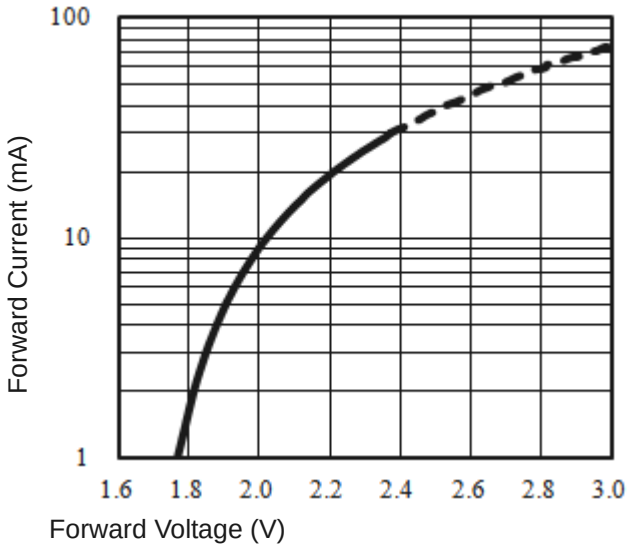
Note: V(λ)=Standard eye response curve

Diagram Characteristics of Radiation

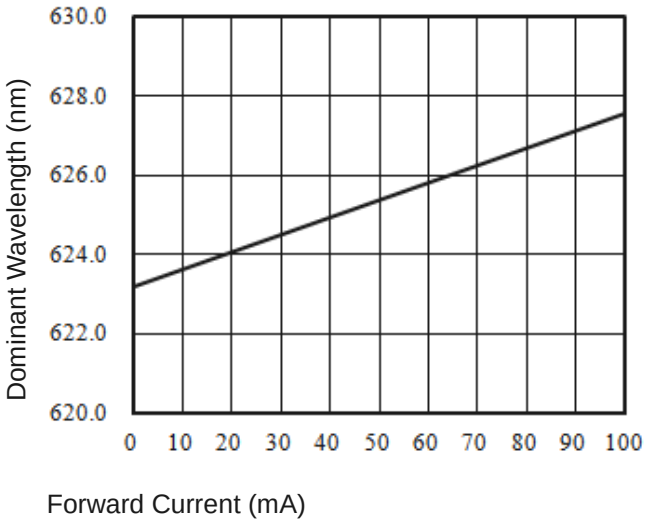


Typical Electro-Optical Characteristics Curves (R6)

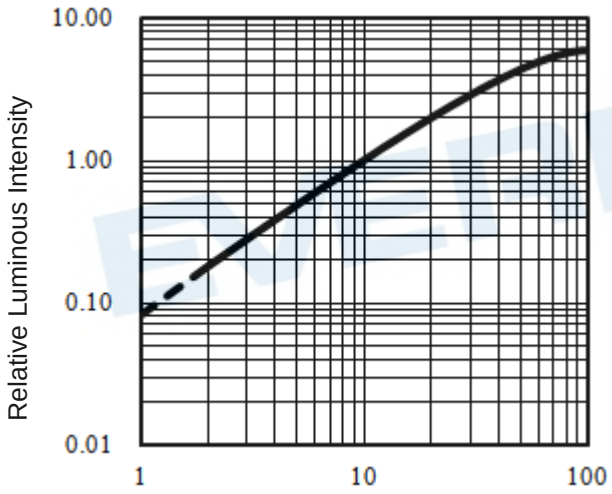
Forward Current vs. Forward Voltage (Ta=25℃)



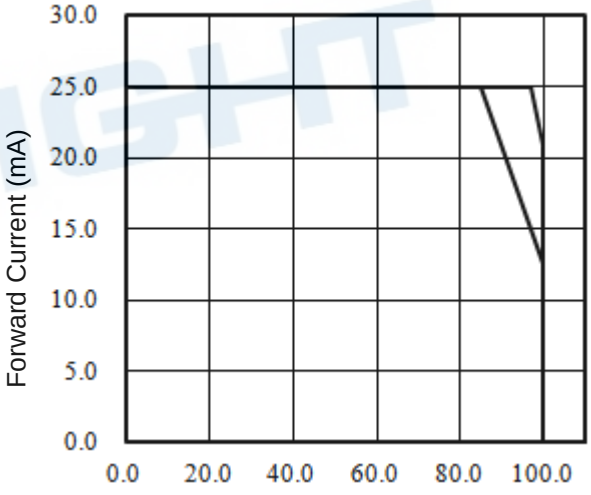
Dominant Wavelength vs. Forward Current (Ta=25℃)



Relative Luminous Intensity vs. Forward Current (Ta=25℃)

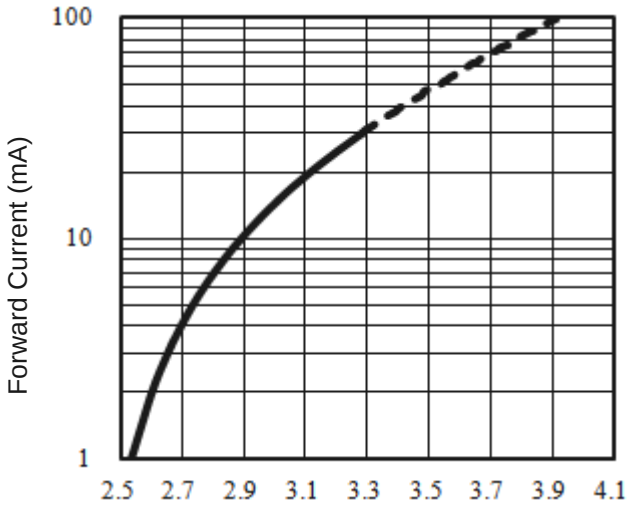


Max. Permissible Forwarded Current(Ta=25℃)

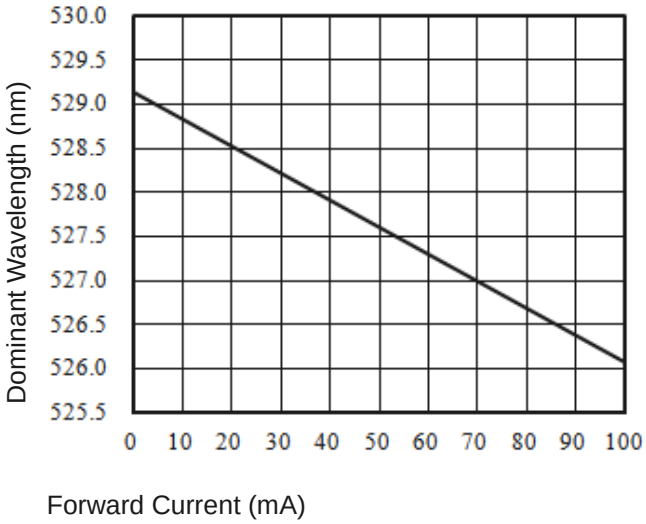


Typical Electro-Optical Characteristics Curves (GH)

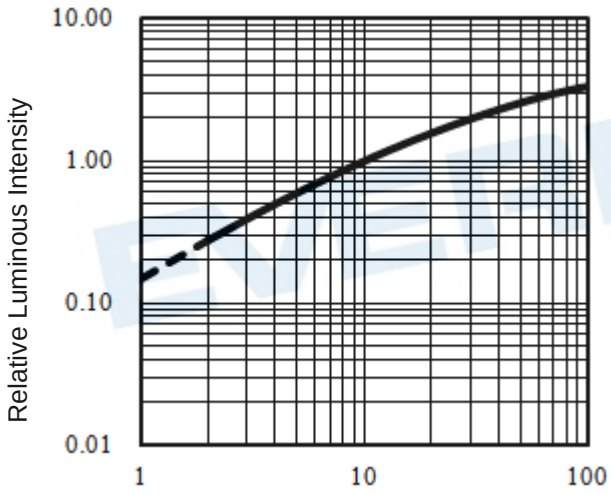
Forward Current vs. Forward Voltage (Ta=25℃)



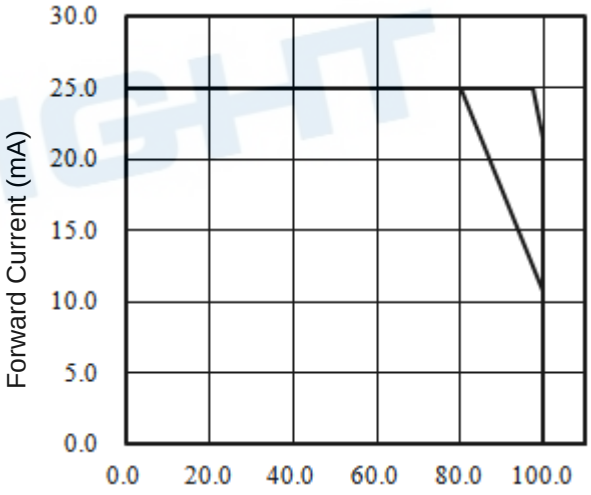
Dominant Wavelength vs. Forward Current (Ta=25℃)



Relative Luminous Intensity vs. Forward Current (Ta=25℃)

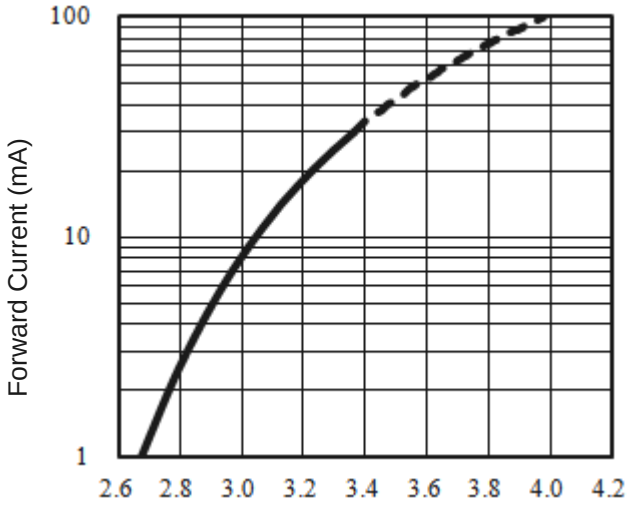


Max. Permissible Forwarded Current(Ta=25℃)

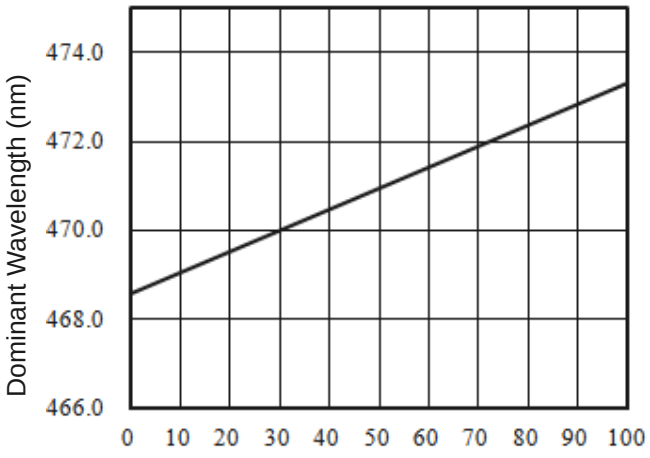


Typical Electro-Optical Characteristics Curves (BH)

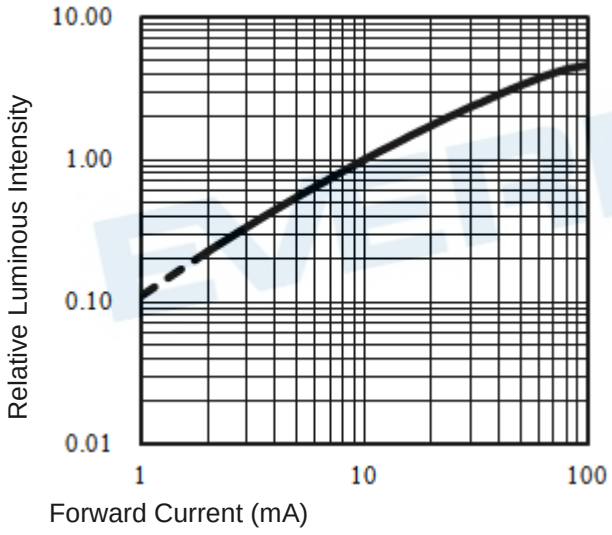
Forward Current vs. Forward Voltage (Ta=25℃)



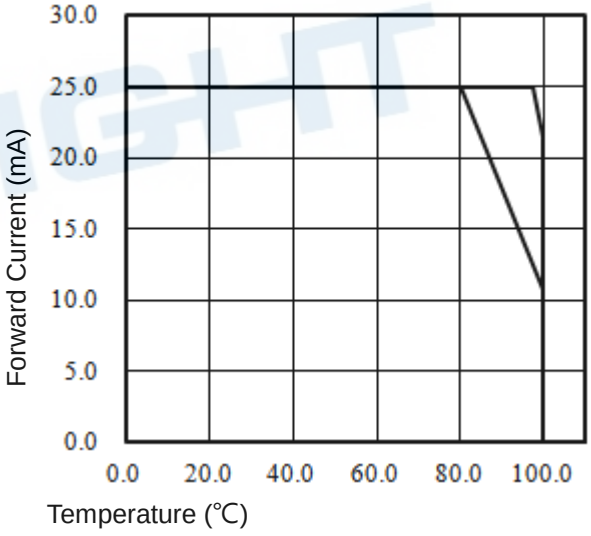
Dominant Wavelength vs. Forward Current (Ta=25℃)



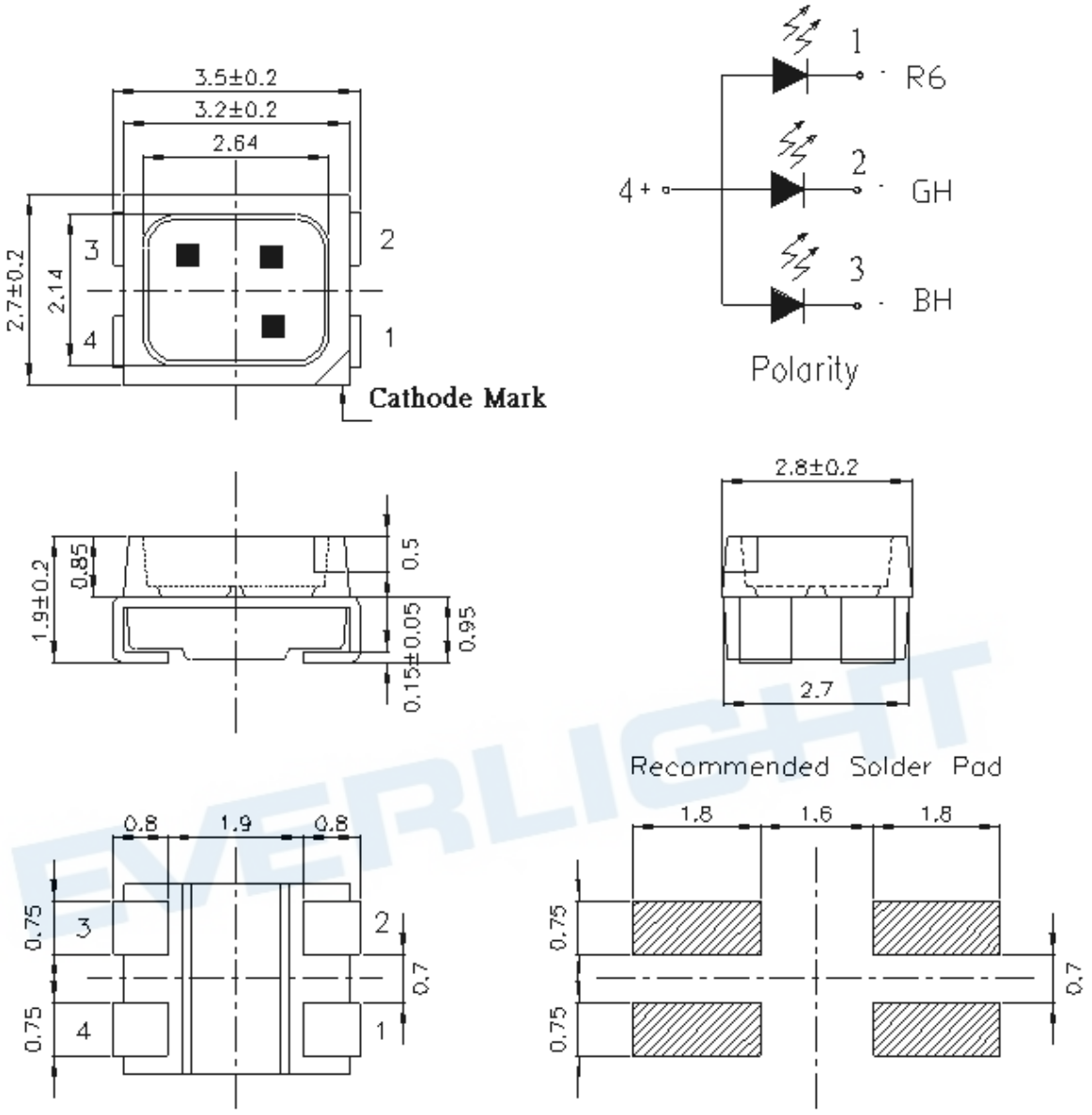
Relative Luminous Intensity vs. Forward Current (Ta=25℃)



Max. Permissible Forwarded Current(Ta=25℃)



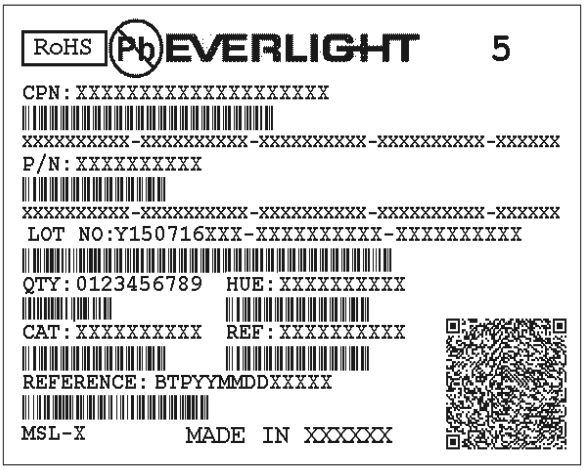
Package Dimension



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

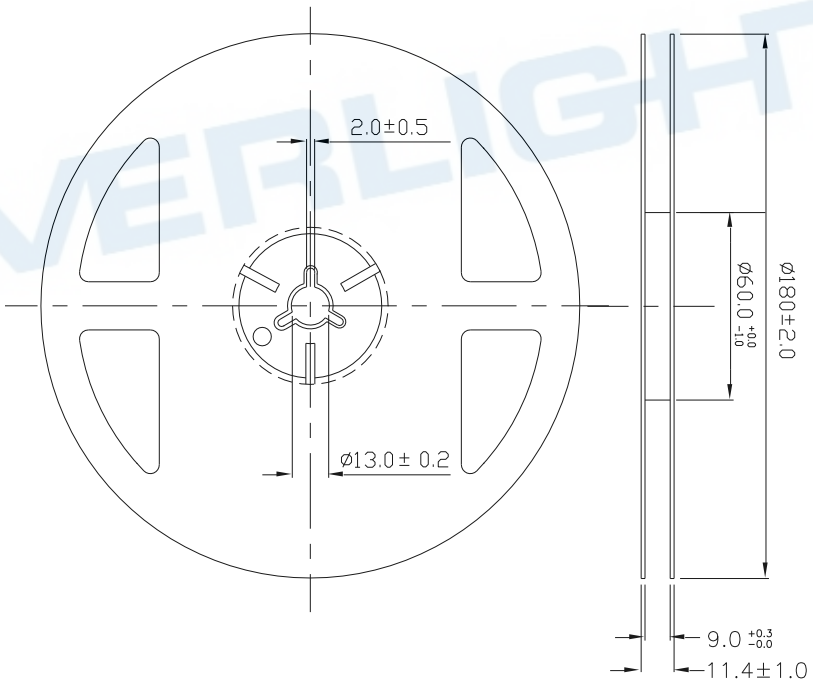
Moisture Resistant Packing Materials

Label Explanation



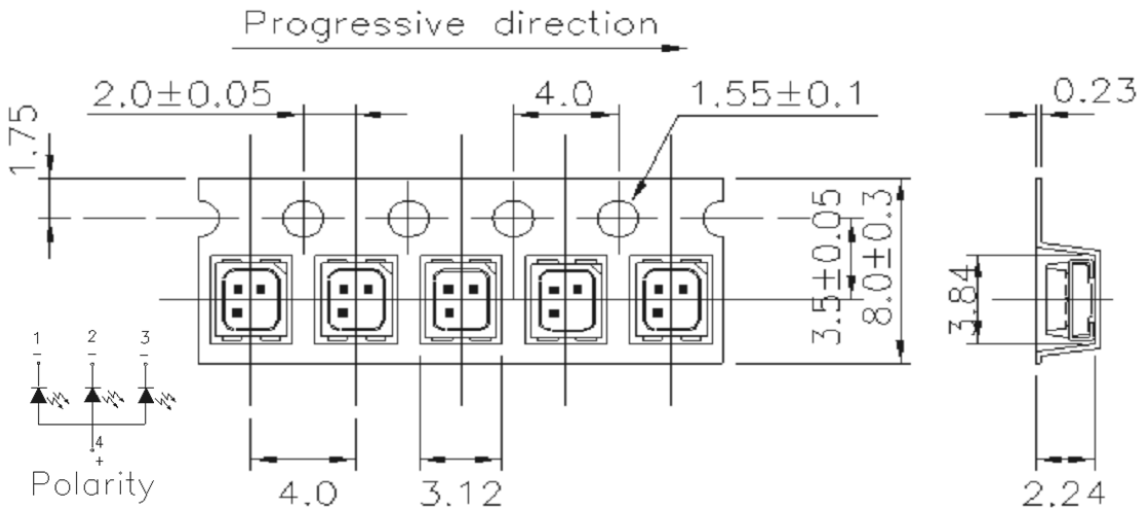
- CPN: Customer's Product Number
- P/N: Product Number
- QTY: Packing Quantity
- CAT: Luminous Intensity Rank
- HUE: Dom. Wavelength Rank
- REF: Forward Voltage Rank
- LOT No: Lot Number

Reel Dimensions



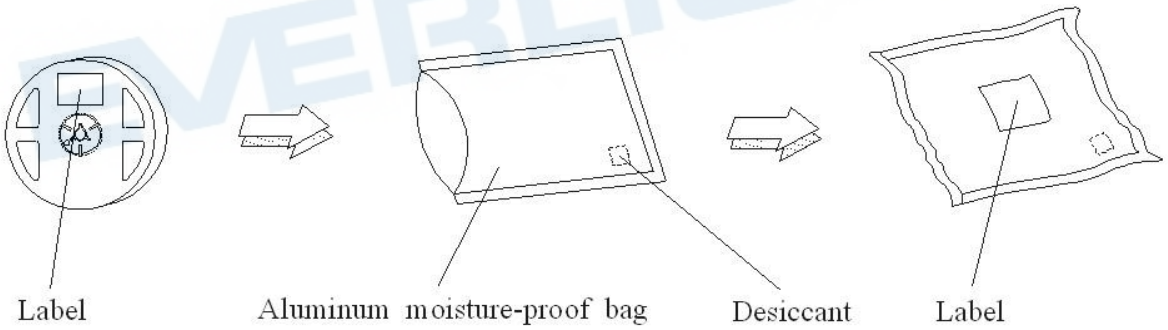
Note:
Tolerances unless mentioned ±0.1mm. Unit = mm

Carrier Tape Dimensions: Loaded Quantity 2000 pcs Per Reel



Notes:
1. Tolerances unless mentioned ±0.1mm. Unit = mm
2.Minimum packing amount is 250/500/1000/2000 pcs per reel

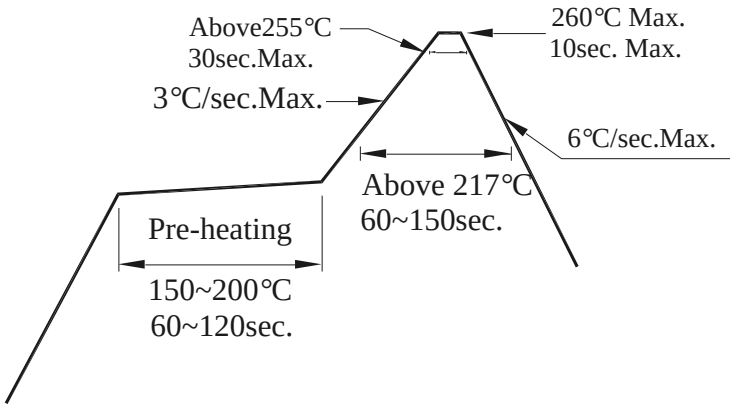
Moisture Resistant Packing Process



Precautions for Use

1. Over-current-proof

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



2. Storage

2.1 Moisture proof bag should only be opened immediately prior to usage.

2.2 Environment should be less than 30℃ and 60% RH when moisture proof bag is opened.

2.3 After opening the package MSL Conditions stated on page 1 of this spec should not be exceeded.

2.4 If the moisture sensitivity card indicates higher than acceptable moisture, the component should be baked at min. 60deg +/-5deg 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.

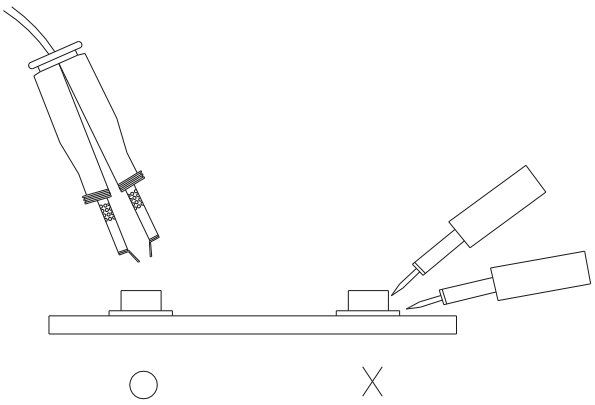
3.4 After soldering, do not warp the circuit board.

4. Soldering Iron

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