EVERLIGHT AMERICAS

DATASHEET

SMD- Full Color Top View LEDs

EAPL3527RGBA6

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.
- Precondition: Bases on JEDEC J-STD 020D Level 3

Applications

- Switches, symbol, mobile phone, digital camera and illuminated advertising.
- Display for indoor and outdoor application.
- Ideal for coupling into light guides.
- Substitution of traditional light.
- Amusement equipment.
- General applications.
- Optical indicator.

Device Selection Guide

Chip Code	Chip Materials	Emitted Color	Resin Color
R6S	AlGaInP	Brilliant Red	Water Clear
GH	InGaN	Brilliant Green	Water Clear
BH	InGaN	Brilliant Blue	Water Clear

Absolute Maximum Ratings (Ta=25℃)

Parameter	Symbol	Code	Rating	Unit
Reverse Voltage	V_R		5	V
Forward Current	I_F	R6S	50	mA
		GH	25	
		BH	25	
Peak Forward Current (Duty 1/10 @1KHz)	I_{FP}		100	mA
Power Dissipation	Pd	R6S	120	mW
		GH	95	
		BH	95	
Junction Temperature	T_j		115	℃
Operating Temperature	T_{opr}		-40 ~ +85	℃
Storage Temperature	Tstg		-40 ~ +90	℃
ESD	ESD	R6S	1000	V
		GH / BH	150	V
Soldering Temperature	T_{sol}	Reflow Soldering : 260 ℃ for 10 sec. Hand Soldering : 350 ℃ for 3 sec.		

Electro-Optical Characteristics (Ta=25℃)

Parameter	Symbol	Code	Min.	Typ.	Max.	Unit	Condition
Luminous Intensity	Iv	R6S	180	-----	450	mcd	R:I_F=20mA G:I_F=20mA B:I_F=20mA
		GH	360	-----	900		
		BH	90	-----	225		
Viewing Angle	$2\theta_{1/2}$		---	120	---	deg	R:I_F=20mA G:I_F=20mA B:I_F=20mA
Peak Wavelength	λp	R6S	---	632	---	nm	R:I_F=20mA G:I_F=20mA B:I_F=20mA
		GH	---	518	---		
		BH	---	468	---		
Dominant Wavelength	λd	R6S	617	-----	632	nm	R:I_F=20mA G:I_F=20mA B:I_F=20mA
		GH	519.5	-----	528.5		
		BH	464.5	-----	476.5		
Spectrum Radiation Bandwidth	Δλ	R6S	---	20	---	nm	R:I_F=20mA G:I_F=20mA B:I_F=20mA
		GH	---	35	---		
		BH	---	35	---		
Forward Voltage	V_F	R6S	1.75	-----	2.60	V	R:I_F=20mA G:I_F=20mA B:I_F=20mA
		GH	2.90	-----	3.90		
		BH	2.90	-----	3.90		
Reverse Current	I_R	R6S	---	---	10	μA	V_R=5V
		GH	---	---	50	μA	
		BH	---	---	50	μA	

Notes:
1. Tolerance of Luminous Intensity: ±11%
2. Tolerance of Dominant Wavelength: ±1nm
3. Tolerance of Forward Voltage: ±0.1V

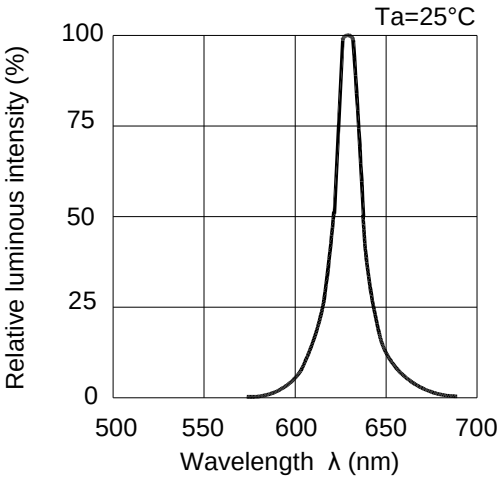
Bin Range of Luminous Intensity

Chip	Bin Code	Min.	Max.	Unit	Condition
R6S	S1	180	225	mcd	R:I_F=20mA G:I_F=20mA B:I_F=20mA
	S2	225	285		
	T1	285	360		
	T2	360	450		
GH	T2	360	450		
	U1	450	565		
	U2	565	715		
	V1	715	900		
BH	Q2	90	112		
	R1	112	140		
	R2	140	180		
	S1	180	225		

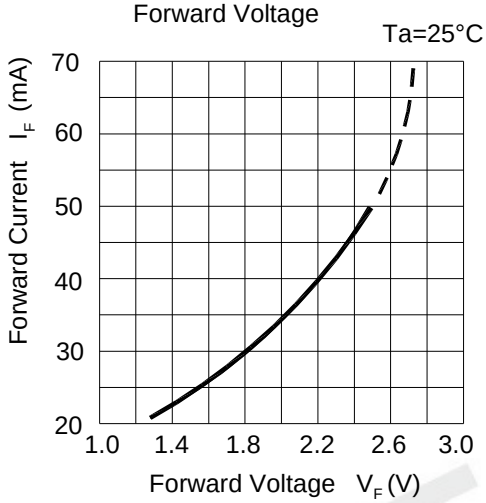
Note:
Tolerance of Luminous Intensity: ±11%

Typical Electro-Optical Characteristics Curves (R6S)

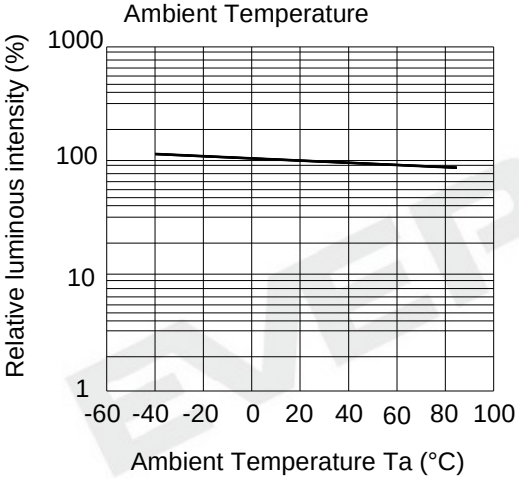
Spectrum Distribution



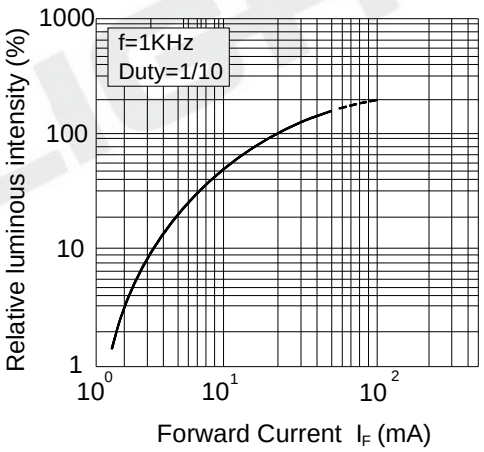
Forward Current vs. Forward Voltage



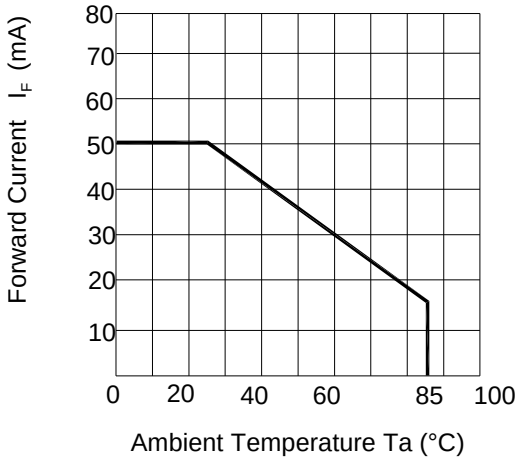
Relative Luminous Intensity vs. Ambient Temperature



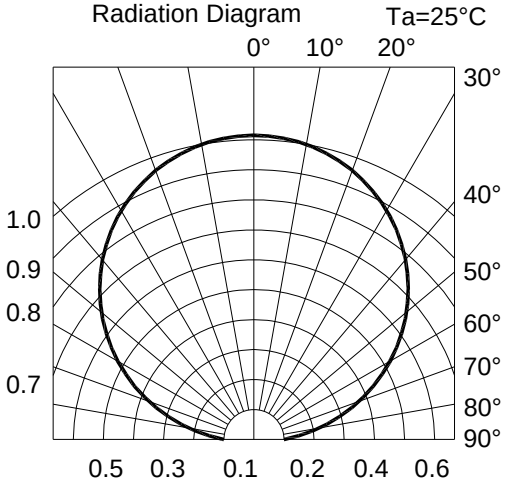
Relative Luminous Intensity vs. Forward Current



Forward Current Derating Curve

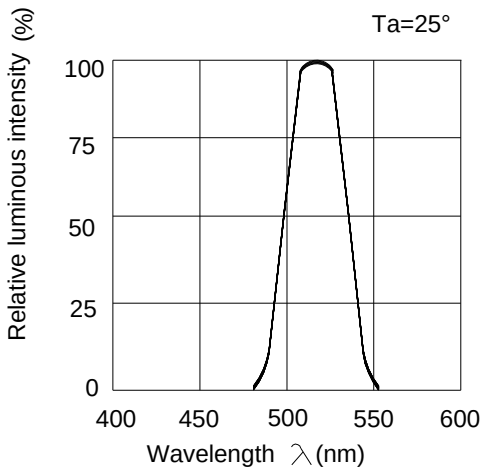


Radiation Diagram

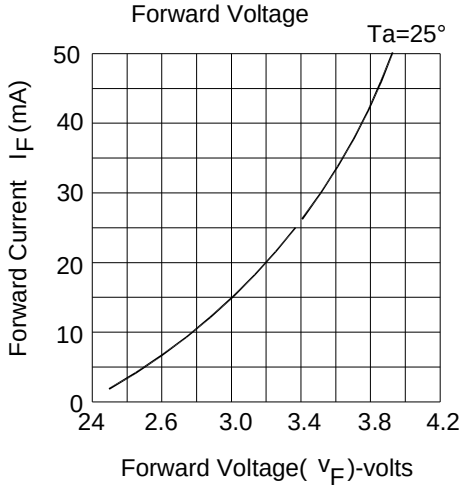


Typical Electro-Optical Characteristics Curves (GH)

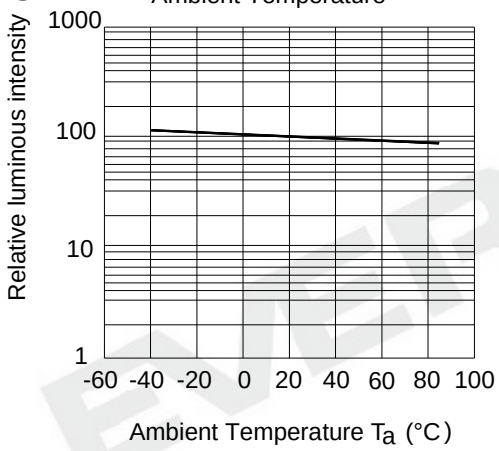
Spectrum Distribution



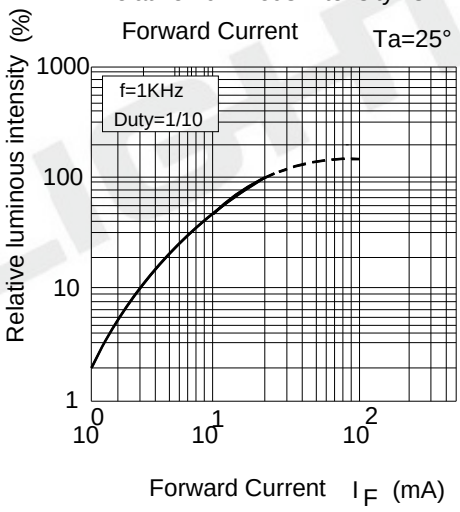
Forward Current vs. Forward Voltage



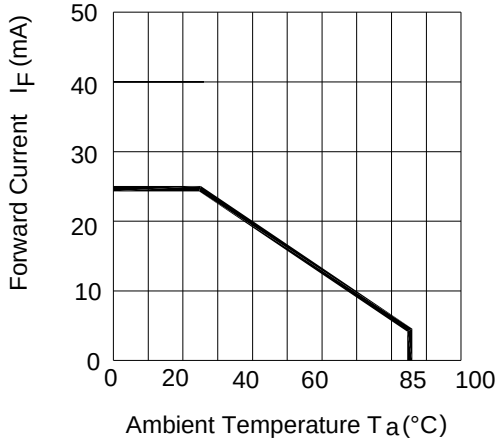
Relative Luminous Intensity vs. Ambient Temperature



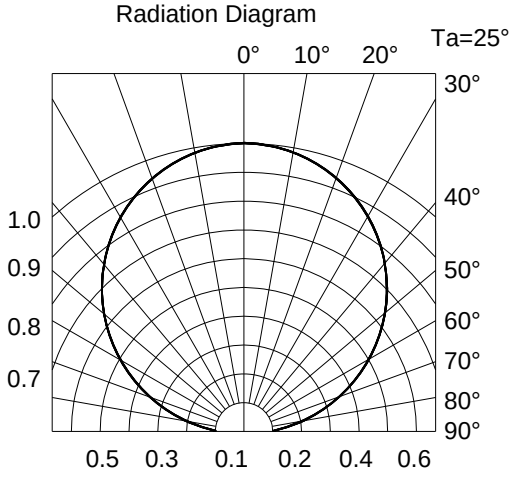
Relative Luminous Intensity vs Forward Current



Forward Current Derating Curve

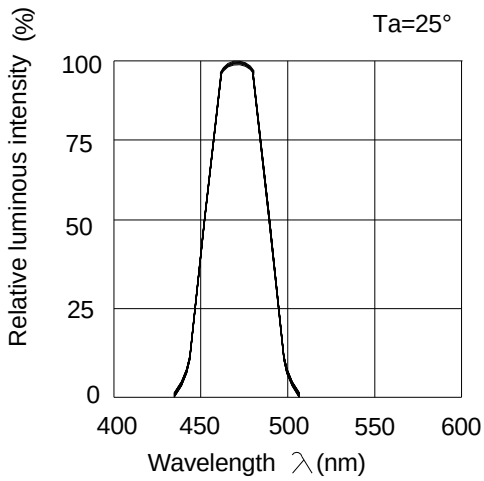


Radiation Diagram

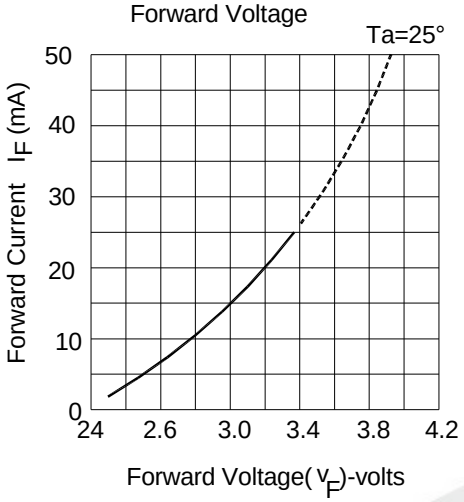


Typical Electro-Optical Characteristics Curves (BH)

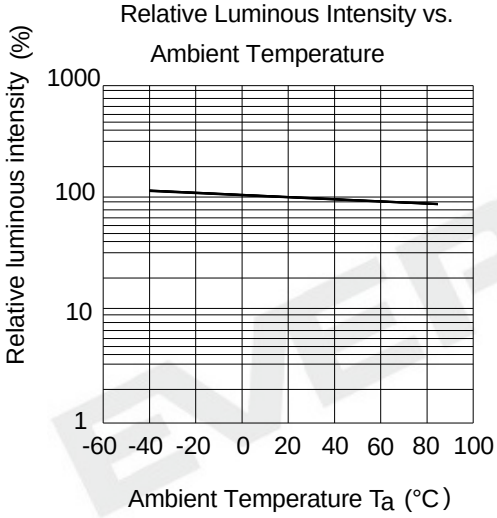
Spectrum Distribution



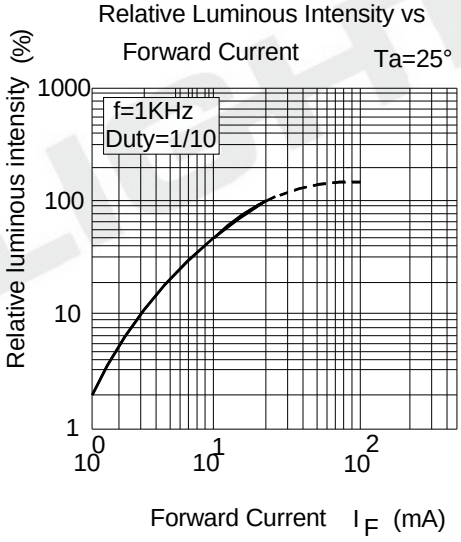
Forward Current vs. Forward Voltage



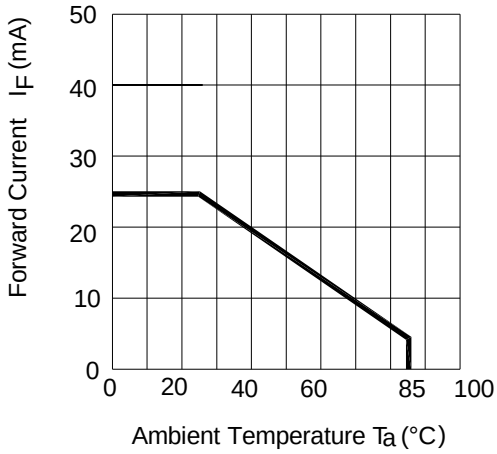
Relative Luminous Intensity vs. Ambient Temperature



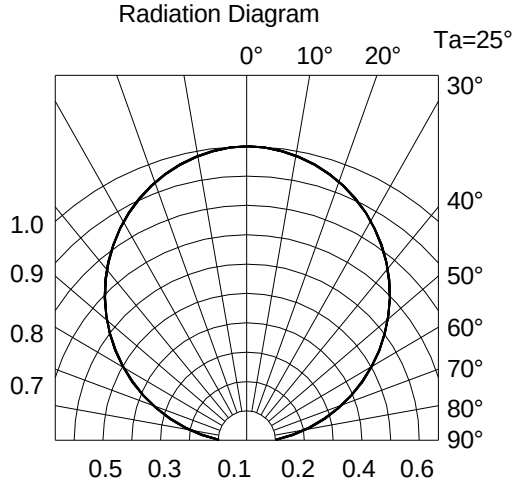
Relative Luminous Intensity vs Forward Current



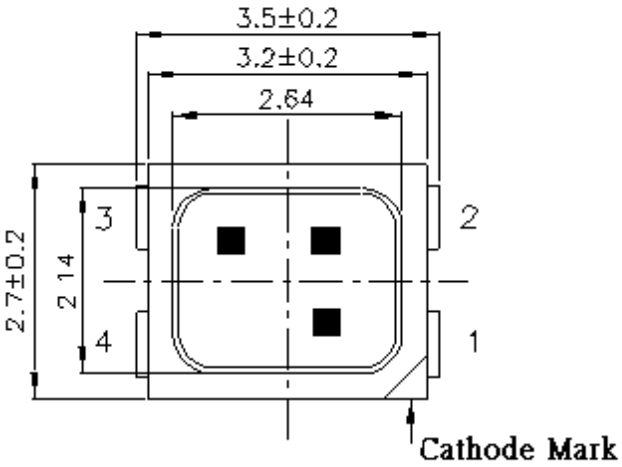
Forward Current Derating Curve

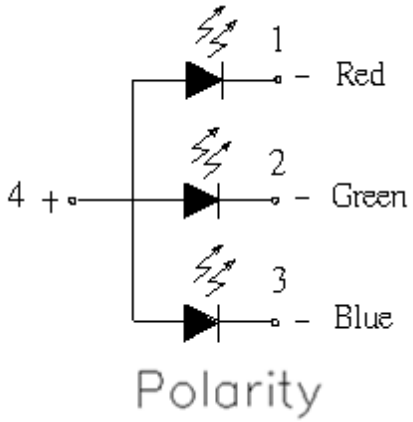


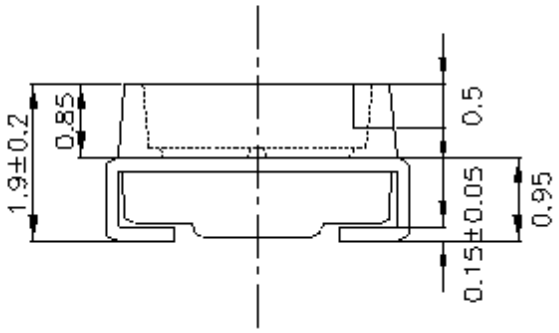
Radiation Diagram

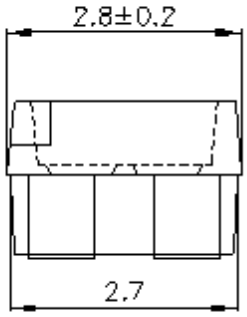


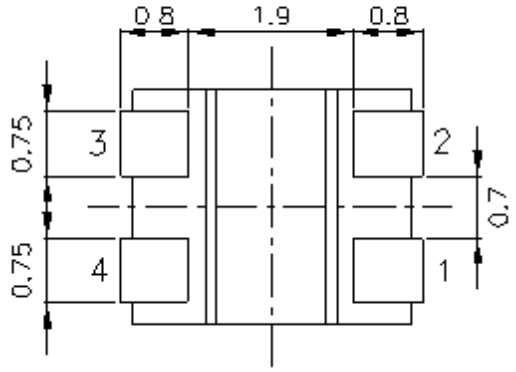
Package Dimension



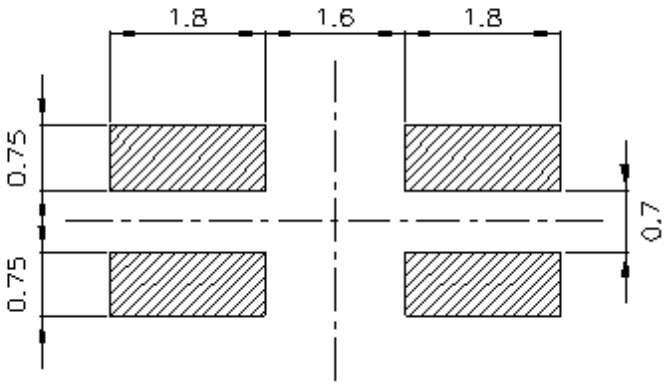








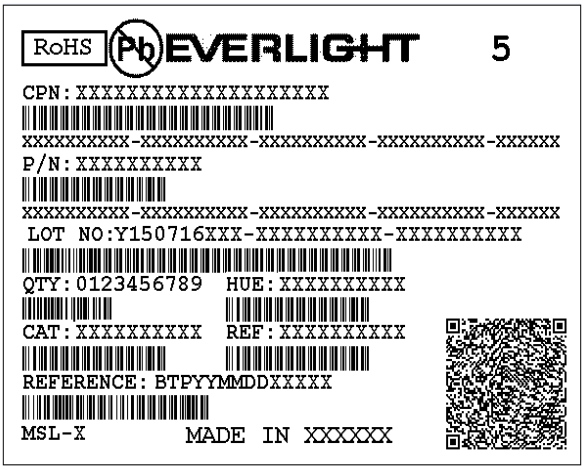
Recommended Solder Pad



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

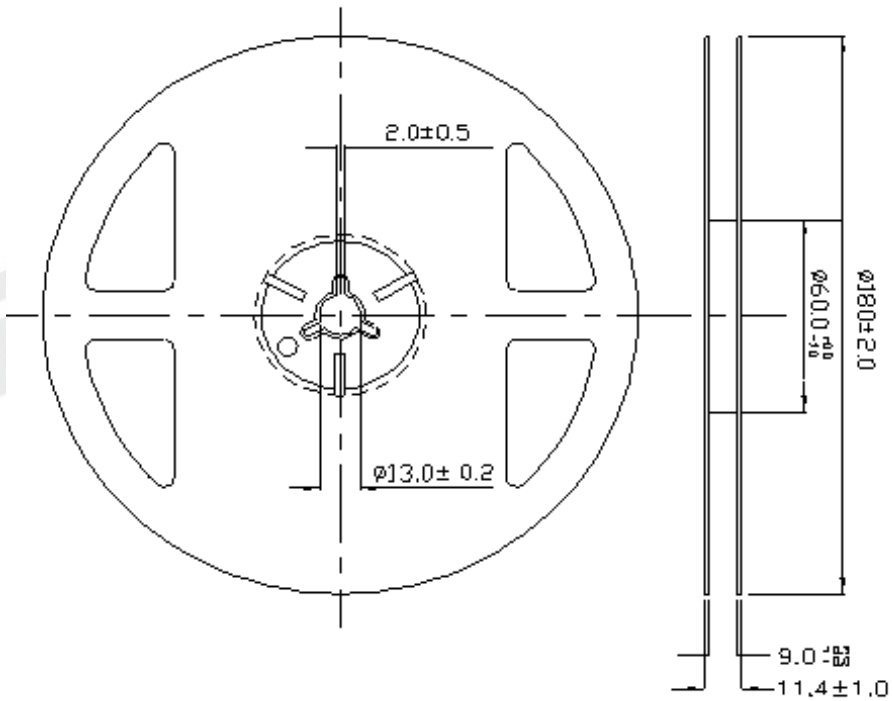
Moisture Resistant Packing Materials

Label Explanation

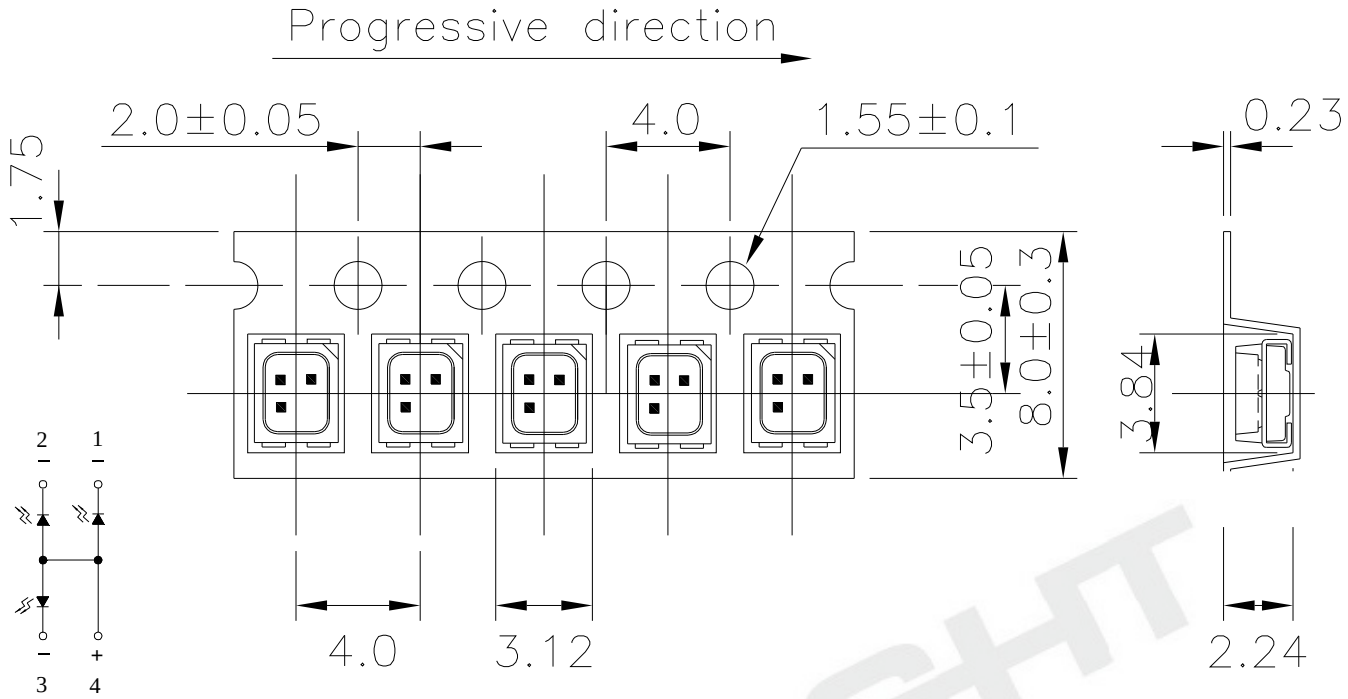


- CPN: Customer's Product Number
- P/N: Product Number
- QTY: Packing Quantity
- CAT: Luminous Intensity Rank
- HUE: Dom. Wavelength Rank
- REF: Forward Voltage Rank
- LOT No: Lot Number

Reel Dimensions

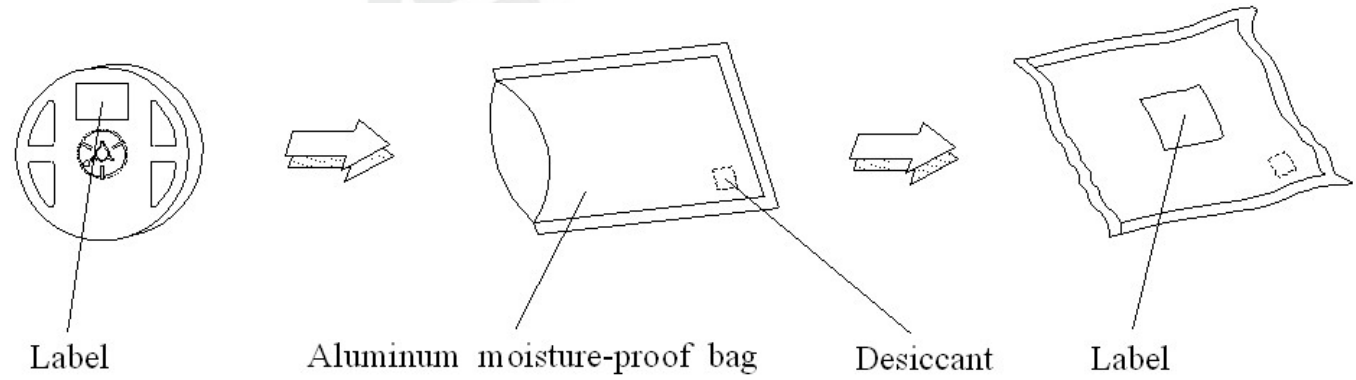


Carrier Tape Dimensions: Loaded Quantity 2000 pcs Per Reel



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

Moisture Resistant Packing Process

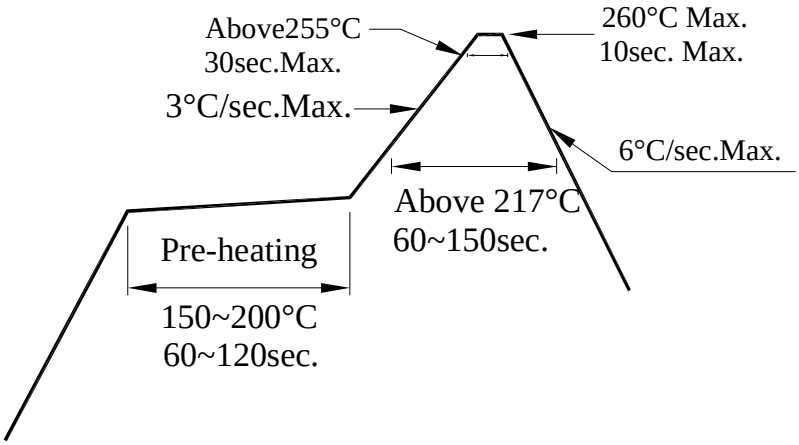


Note: Tolerances unless mentioned ±0.1mm. Unit = mm

Precautions for Use

1. Over-current-proof

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

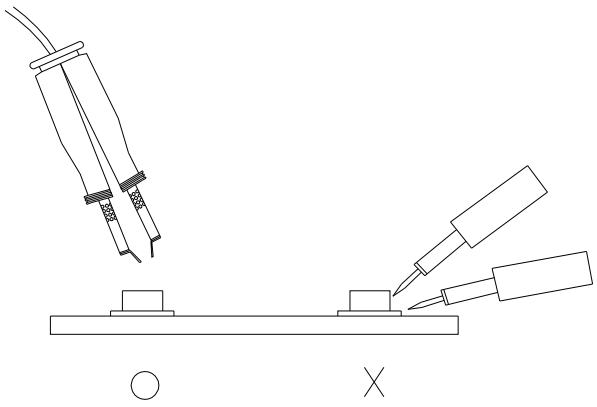
3.1 Pb-free solder temperature profile
3.2 Reflow soldering should not be done more than two times.
3.3 When soldering, do not put stress on the LEDs during heating.
3.4 After soldering, do not warp the circuit board.

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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