EVERLIGHT AMERICAS

DATASHEET

EAPL4508RGBA4



Features

- White package.
- Optical indicator.
- Colorless clear window.
- Ideal for backlight and light pipe application.
- Inter reflector.
- Wide viewing angle.
- Suitable for vapor-phase reflow, Infrared reflow and wave solder processes.
- Computable with automatic placement equipment.
- Available on tape and reel (12mm Tape)
- Pb-free
- The product itself will remain within RoHS compliant version.
- MSL-3

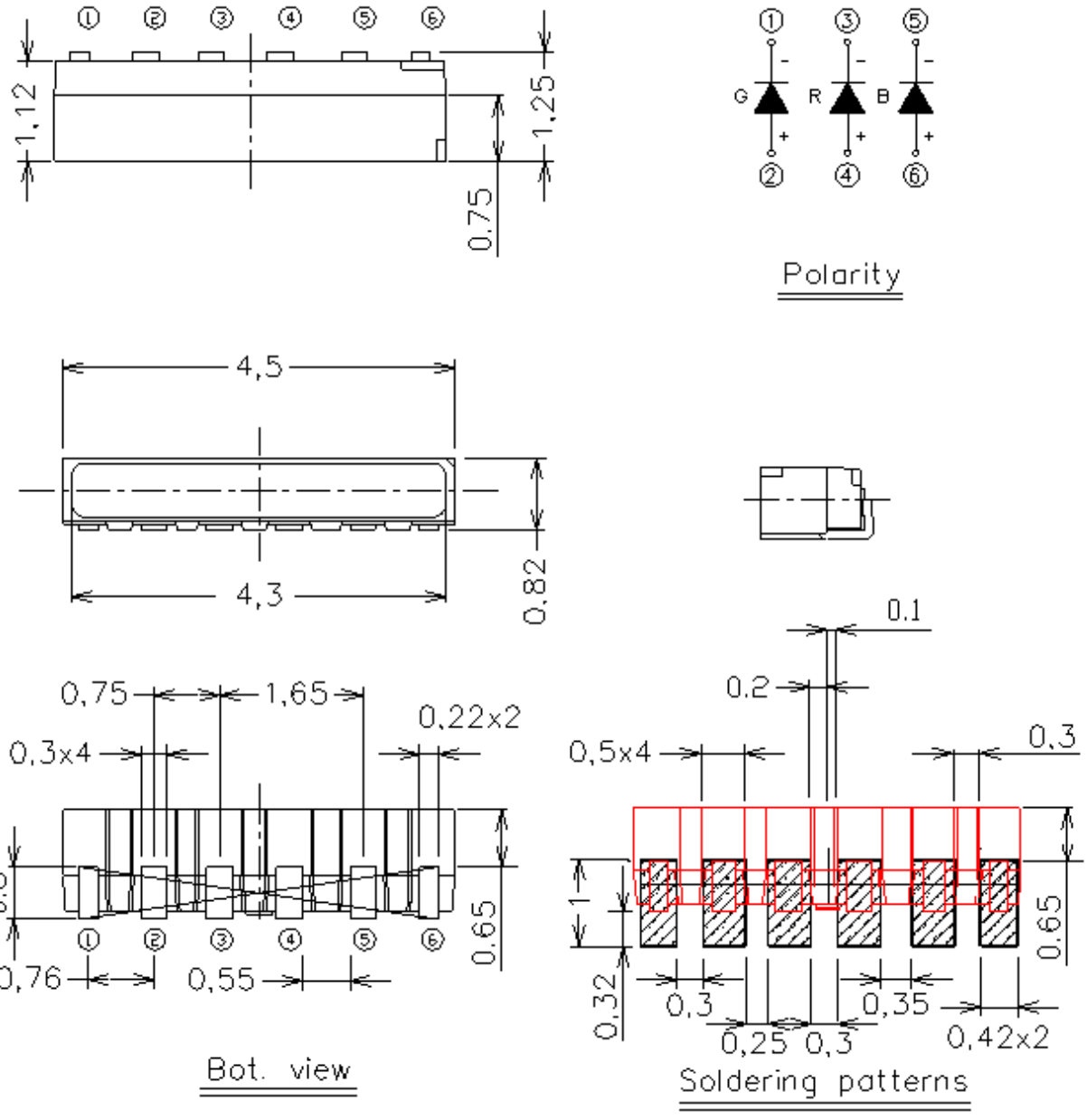
Descriptions

- The EAPL4508RGBA4 series is available in soft red, green and blue 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

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

Package Outline Dimensions



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

Device Selection Guide

Chip			Resin Color
Type	Material	Emitted Color	
RS	AlGaInP	Brilliant Red	Water Clear
GB	InGaN	Brilliant Green	
B7	InGaN	Blue	

Absolute Maximum Ratings (Ta=25℃)

Parameter	Symbol		Rating	Unit
Reverse Voltage	V_R		5	V
Forward Current	I_F	RS	50	mA
		GB	30	
		B7	30	
Peak Forward Current(Duty 1/10@ 1KHZ)	I_{FP}	RS	100	mA
		GB	100	
		B7	100	
Power Dissipation	Pd	RS	130	mW
		GB	110	
		B7	110	
Electrostatic Discharge(HBM)	ESD	RS	2000	V
		GB	1000	
		B7	1000	
Operating Temperature	Topr		-40 ~ +85	℃
Storage Temperature	Tstg		-40~ +90	℃
Soldering Temperature	Tsol		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	225	-----	560	mcd	I_F=17mA (R) I_F=18mA (G) I_F=9mA (B)
		GB	715	-----	1420		
		B7	57	-----	140		
Viewing Angle	2 θ 1/2		-----	120	-----	deg	
Dominant Wavelength	λ d	RS	618	-----	627	nm	
		GB	520	-----	535		
		B7	457	-----	466		
Forward Voltage	V_F	RS	1.80	-----	2.30	V	
		GB	2.75	-----	3.45		
		B7	2.75	-----	3.45		
White point coordinate	x	-----	-----	0.294	-----	-----	
	y	-----	-----	0.286	-----	-----	
Reverse Current	I_R	RS	-----	-----	10	μ A	V_R=5V

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

Symbol		Bin Code	Min.	Max.	Unit	Condition
I_V	RS	S2	225	285	mcd	I_F=17mA (R) I_F=18mA (G) I_F=9mA (B)
		T1	285	360		
		T2	360	450		
		U1	450	560		
	GB	V1	715	900		
		V2	900	1120		
		W1	1120	1420		
	B7	P2	57	72		
		Q1	72	90		
		Q2	90	112		
		R1	112	140		

Bin Range of Forward Voltage

Symbol		Bin Code	Min.	Max.	Unit	Condition
V_F	RS	RV1	1.80	2.05	V	I_F=17mA (R) I_F=18mA (G) I_F=9mA (B)
		RV2	2.05	2.30		
	GB	GV1	2.75	3.10		
		GV2	3.10	3.45		
	B7	BV1	2.75	3.10		
		BV2	3.10	3.45		

Note:

1. Tolerance of Luminous Intensity: ±11%
2. Tolerance of Forward Voltage: ±0.1V

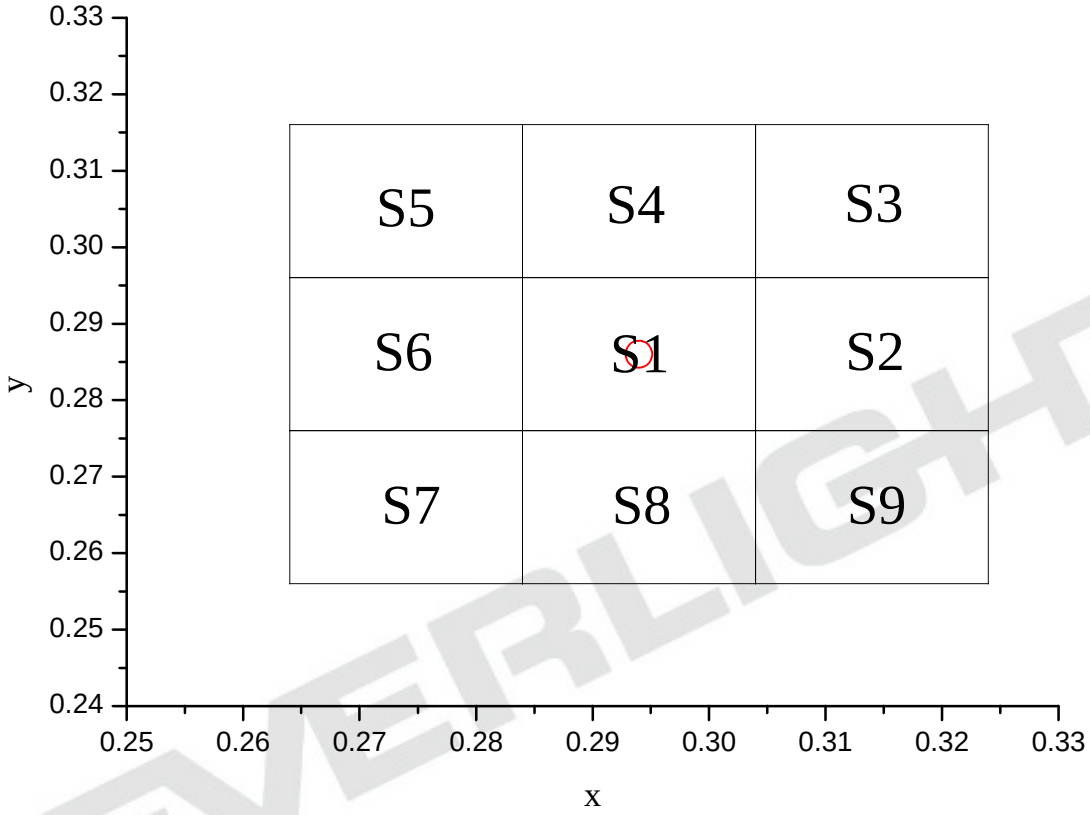
Bin Code of Chromaticity Coordinates
R/G/B=17/18/9mA

Bin Code	CIE_x	CIE_y	Bin Code	CIE_x	CIE_y
S1	0.284	0.276	S2	0.304	0.276
	0.284	0.296		0.304	0.296
	0.304	0.296		0.324	0.296
	0.304	0.276		0.324	0.276
S3	0.304	0.296	S4	0.284	0.296
	0.304	0.316		0.284	0.316
	0.324	0.316		0.304	0.316
	0.324	0.296		0.304	0.296
S5	0.264	0.296	S6	0.264	0.276
	0.264	0.316		0.264	0.296
	0.284	0.316		0.284	0.296
	0.284	0.296		0.284	0.276
S7	0.264	0.256	S8	0.284	0.256
	0.264	0.276		0.284	0.276
	0.284	0.276		0.304	0.276
	0.284	0.256		0.304	0.256
S9	0.304	0.256			
	0.304	0.276			
	0.324	0.276			
	0.324	0.256			

Note:

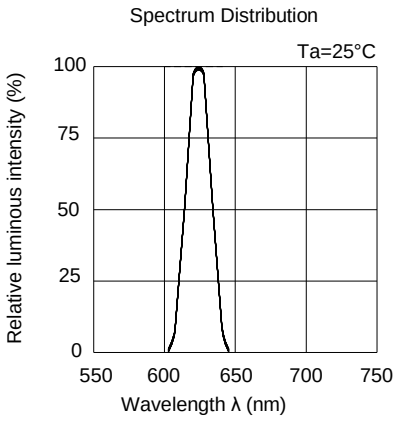
Tolerance of Chromaticity Coordinates: ±0.01

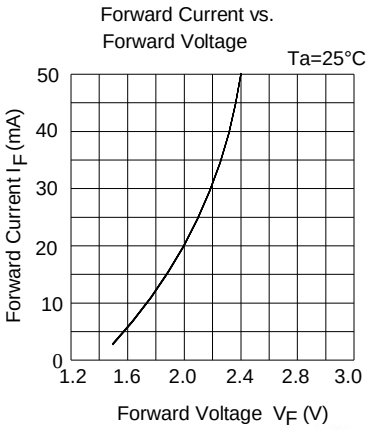
The C.I.E. 1931 Chromaticity Diagram
R/G/B=17/18/9mA

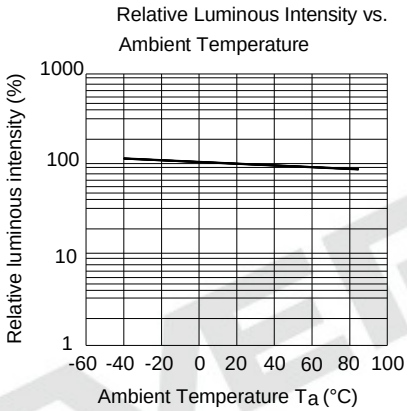


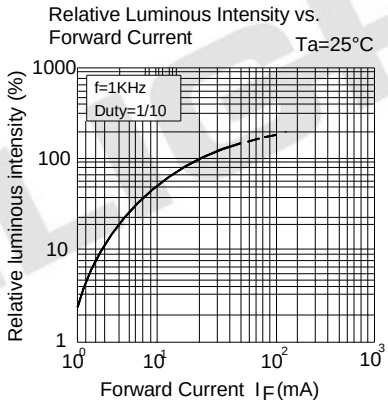
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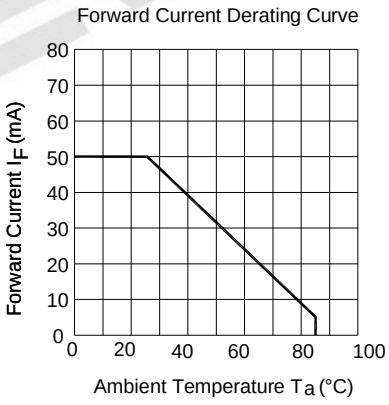
Typical Electro-Optical Characteristics Curves(RS)

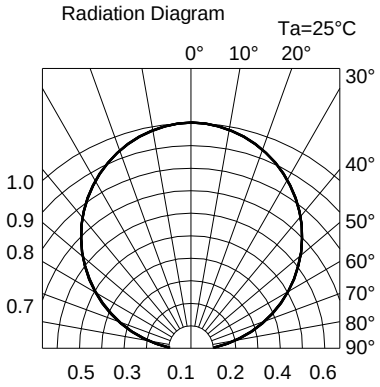




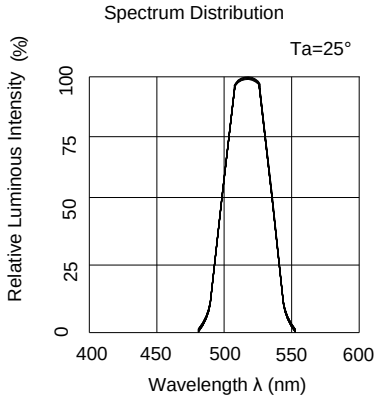


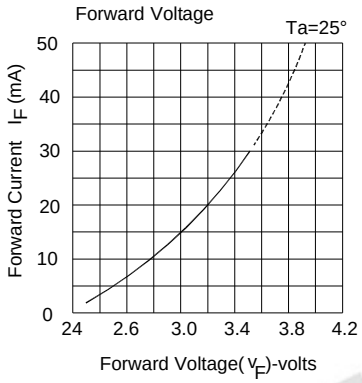


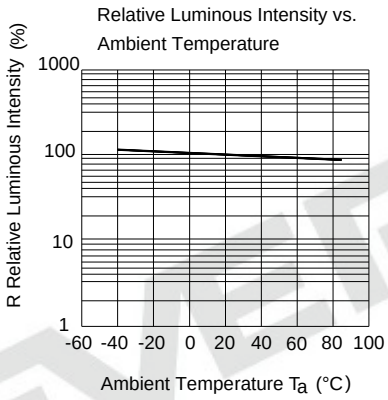


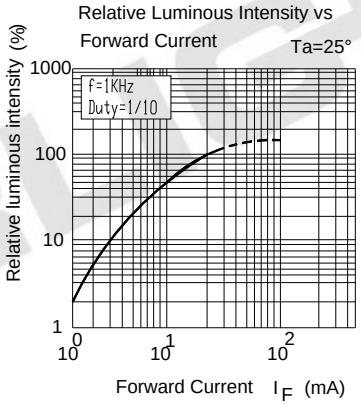


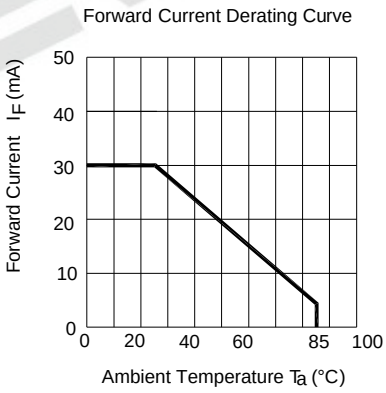
Typical Electro-Optical Characteristics Curves(GB)

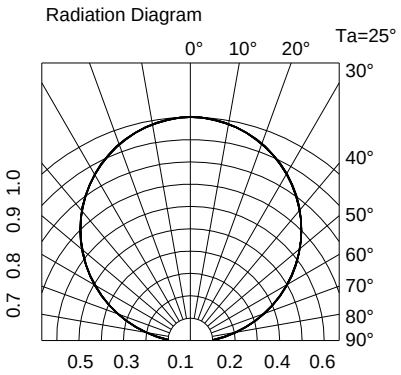




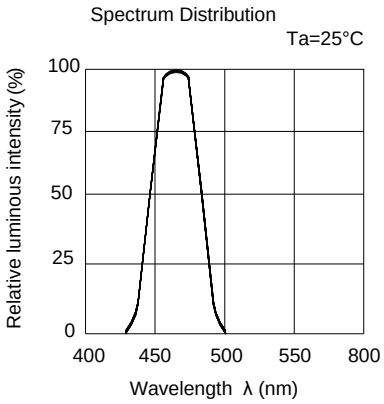


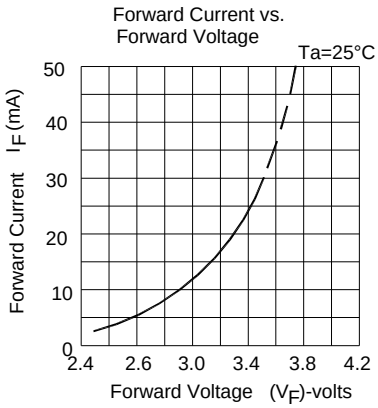


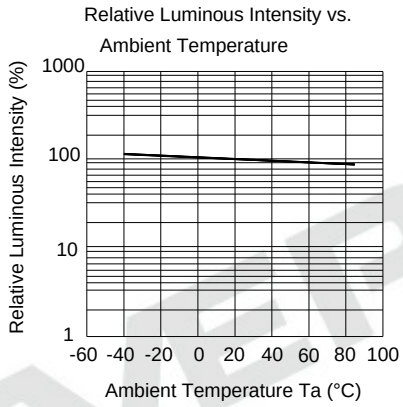


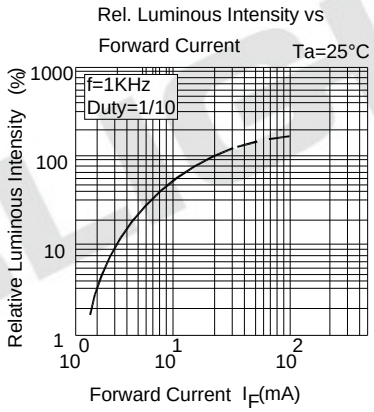


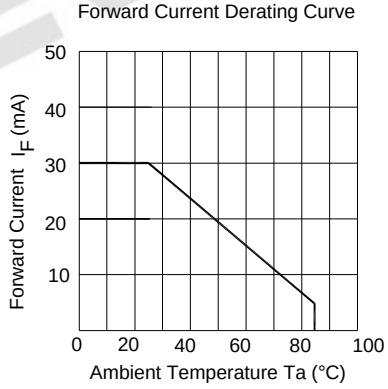
Typical Electro-Optical Characteristics Curves(B7)

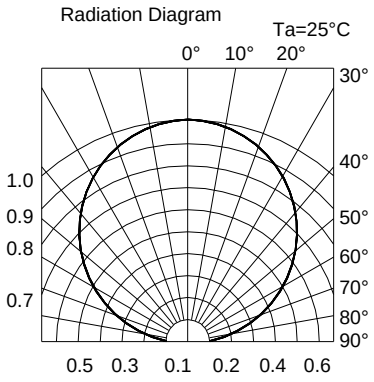










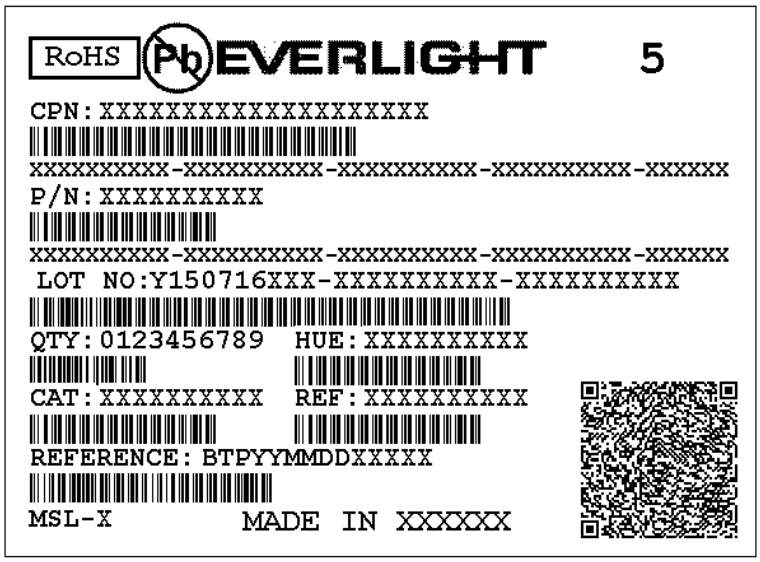


Label Explanation

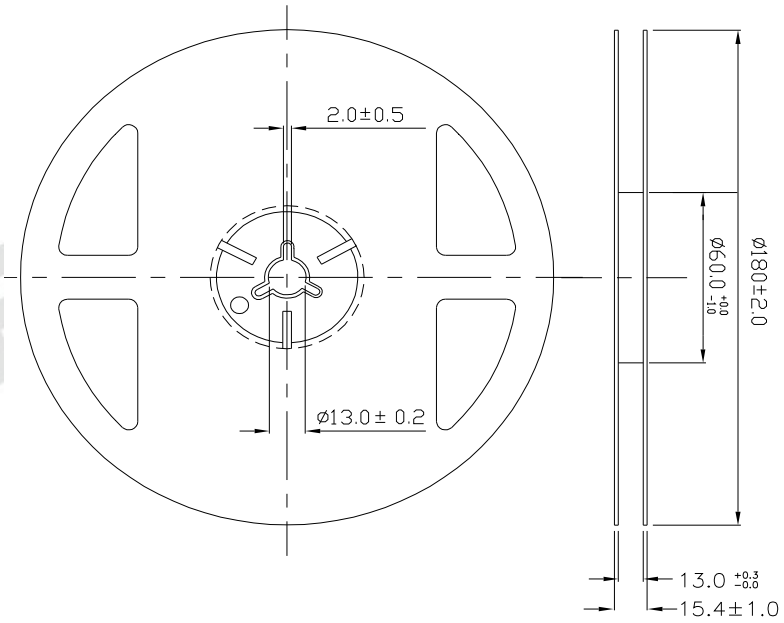
CAT: Luminous Intensity Rank

HUE: Chromaticity Coordinates

REF: Forward Voltage Rank

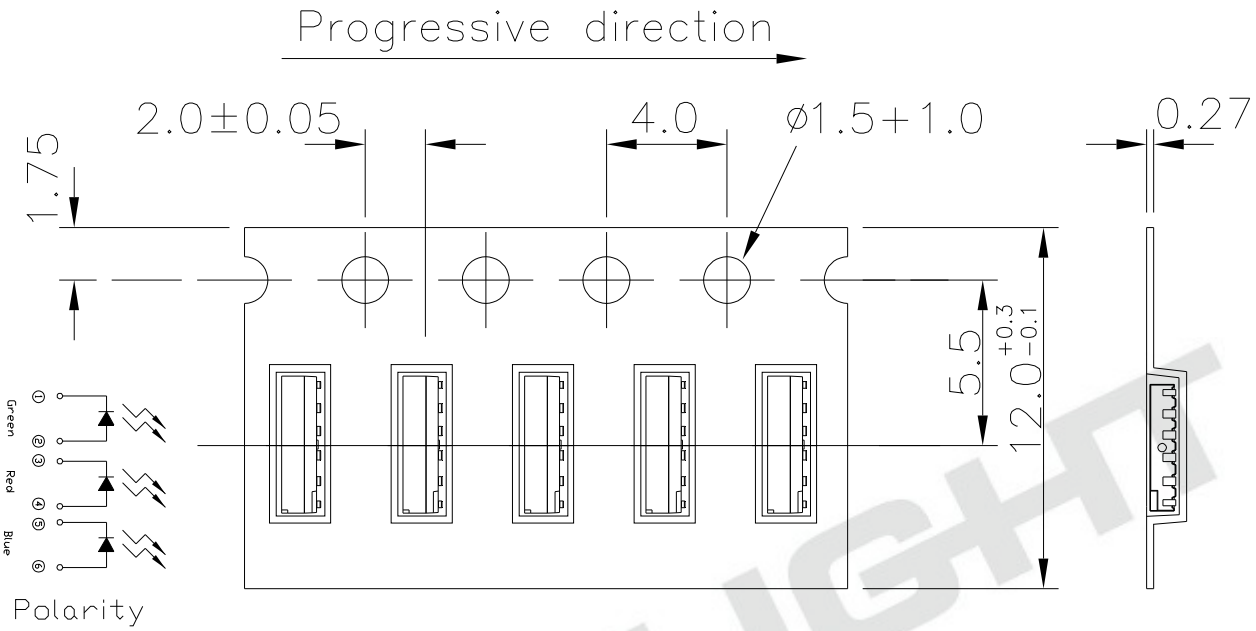


Reel Dimensions



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

Carrier Tape Dimensions: Loaded quantity 2000 PCS per reel.

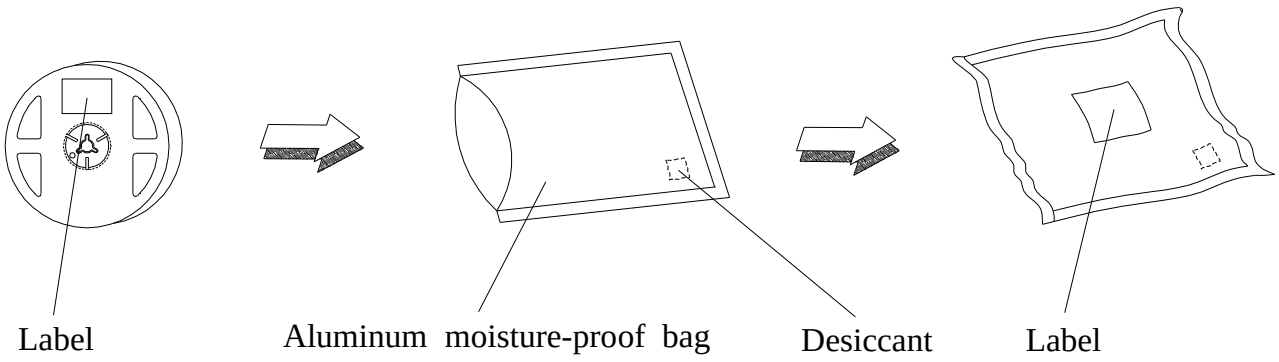


Note:

1.Tolerance unless mentioned is ±0.1mm; Unit = mm

2.Minimum packing amount is 250/500/1000/2000 pcs per reel.

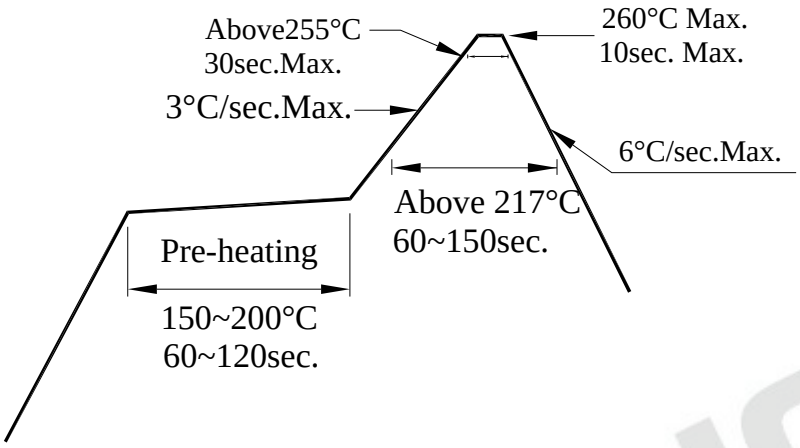
Moisture Resistant Packaging



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 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.

Revision History:

Rev.	Modified date	File modified contents
1	2010/04/06	New Spec
2	2012/04/16	Approved
3	2013/10/01	Change the QR Code
4	2016/03/24	Modify the storage conditions
5	2016/05/16	Modify the Package Outline Dimensions
6	2016/06/13	Modify green wavelength range and red brightness