EVERLIGHT AMERICAS

DATASHEET

Full Color Top View LEDs
EAPL3527RGBA3

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.

Descriptions

- The EAPL3527 series is available in soft red, 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 it 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.

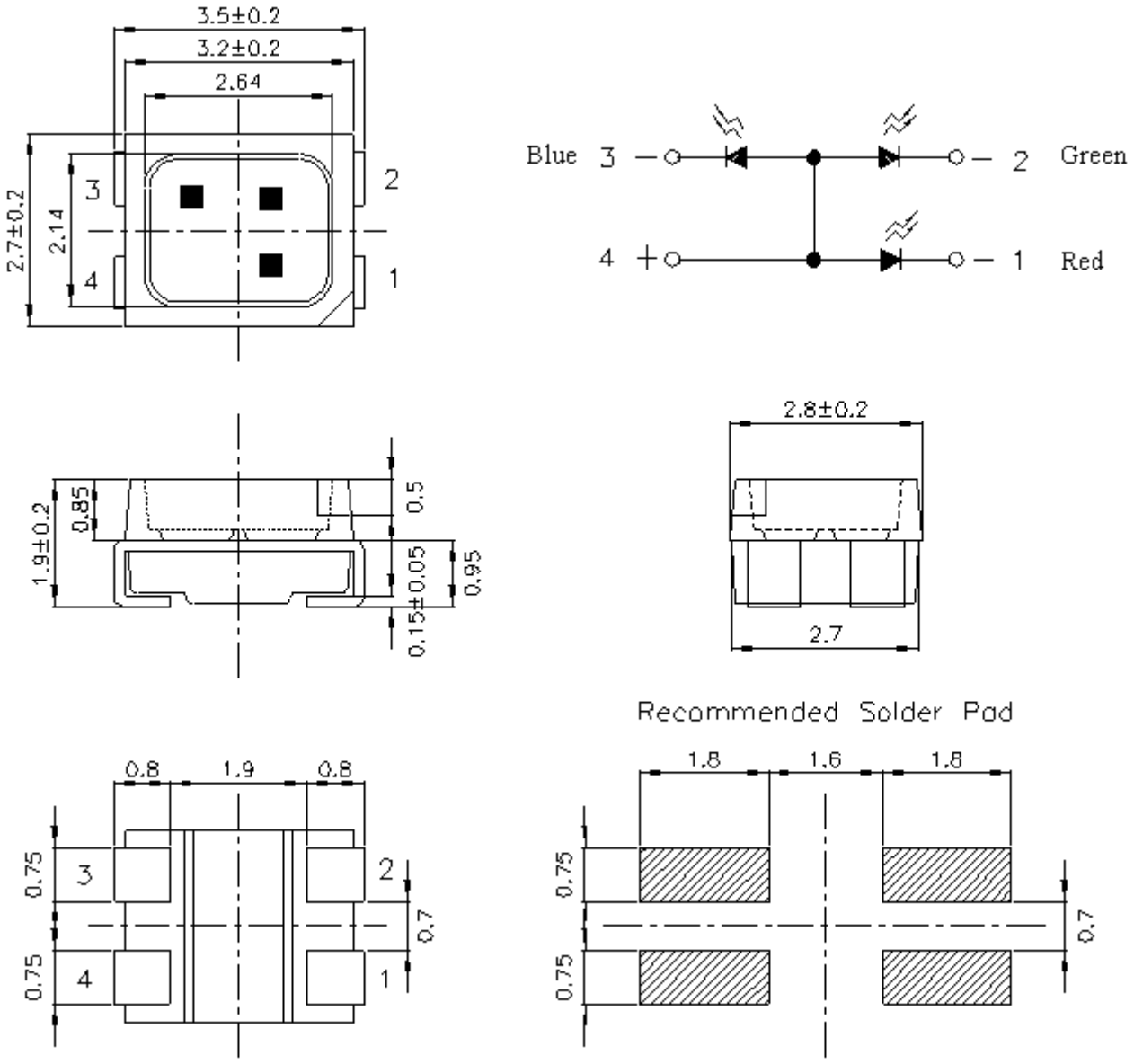
Applications

- 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		Emitted Color	Resin Color
Type	Material		
B7	InGaN	Blue	White Diffuse
GB	InGaN	Brilliant Green	
RE	AlGaInP	Brilliant Red	

Package Outline Dimensions



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

Absolute Maximum Ratings (Ta=25℃)

Parameter	Symbol		Rating	Unit
Reverse Voltage	V_R		5	V
Forward Current	I_F	B7	30	mA
		GB	30	
		RE	50	
Peak Forward Current(Duty 1/10 @ 1KHz)	I_{FP}	B7	100	mA
		GB	100	
		RE	100	
Power Dissipation	Pd	B7	110	mW
		GB	110	
		RE	120	
Electrostatic Discharge(HBM)	ESD	B7	1000	V
		GB	1000	
		RE	2000	
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	I_V	B7	180	-----	450	mcd	I_F=20mA
		GB	715	-----	1800		
		RE	360	-----	900		
Peak Wavelength	λ p	B7	-----	468	-----	nm	I_F=20mA
		GB	-----	518	-----		
		RE	-----	632	-----		
Dominant Wavelength	λ d	B7	464.5	-----	476.5	nm	I_F=20mA
		GB	520.0	-----	535.0		
		RE	617.5	-----	633.5		
Spectrum Radiation Bandwidth	△ λ	B7	-----	25	-----	nm	I_F=20mA
		GB	-----	35	-----		
		RE	-----	20	-----		
Forward Voltage	V_F	B7	2.75	-----	3.65	V	I_F=20mA
		GB	2.75	-----	3.65		
		RE	1.75	-----	2.55		
Viewing Angle	2θ 1/2		-----	120	-----	deg	I_F=20mA
Reverse Current	I_R	B7	-----	-----	50	μA	V_R=5V
		GB	-----	-----	50		
		RE	-----	-----	10		

Notes:

1. Tolerance of L inous Intensity: ±11%
2. Tolerance of D inant Wavelength: ±1nm
3. Tolerance of Forward Voltage: ±0.

Bin Range of Luminous Intensity

Symbol		Bin Code	Min.	Max.	Unit	Condition
Iv	B7	S1	180	225	mcd	I_F=20mA
		S2	225	285		
		T1	285	360		
		T2	360	450		
	GB	V1	715	900		
		V2	900	1120		
		W1	1120	1420		
		W2	1420	1800		
	RE	T2	360	450		
		U1	450	565		
		U2	565	715		
		V1	715	900		

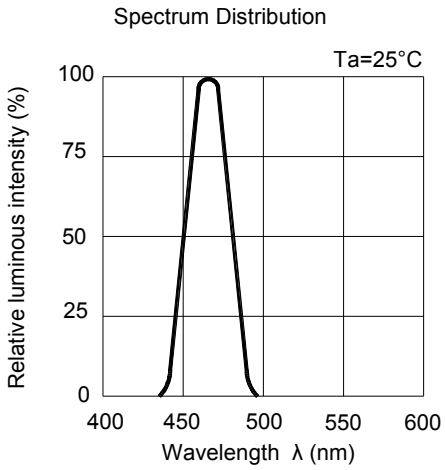
Bin Range of Dominant Wavelength

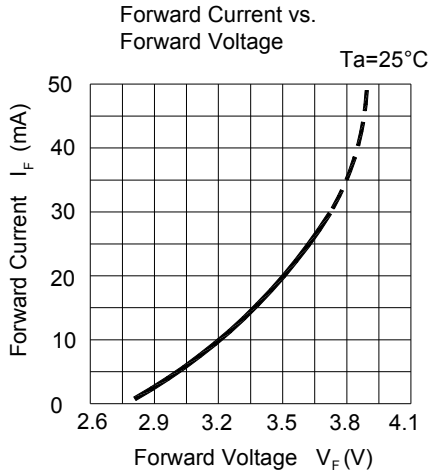
Symbol		Bin Code	Min.	Max.	Unit	Condition
λd	B7	A9	464.5	467.5	nm	I_F=20mA
		A10	467.5	470.5		
		A11	470.5	473.5		
		A12	473.5	476.5		
	GB	X	520	525		
		Y	525	530		
		Z	530	535		
	RE	E4	617.5	621.5		
		E5	621.5	625.5		
		E6	625.5	629.5		
		E7	629.5	633.5		

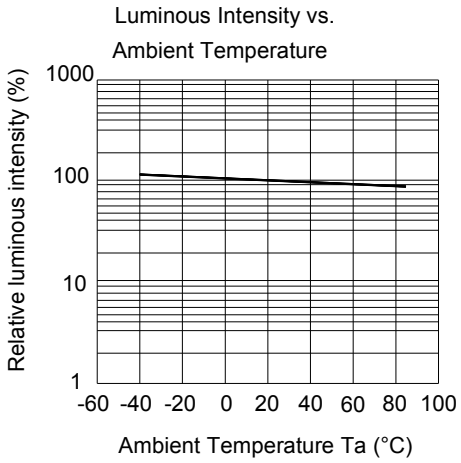
Notes:

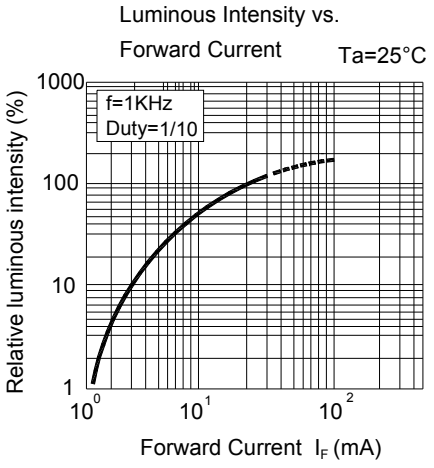
1. Tolerance of L inous Intensity: ±11%
2. Tolerance of D inant Wavelength: ±1nm

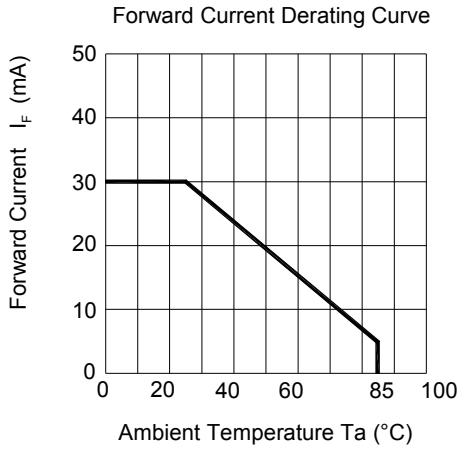
Typical Electro-Optical Characteristics Curves (B7)

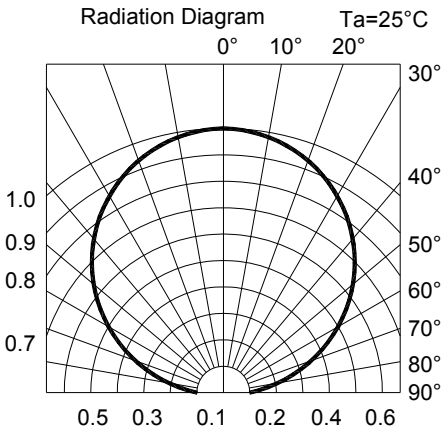






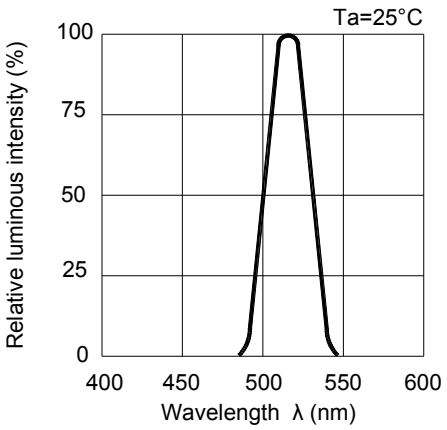




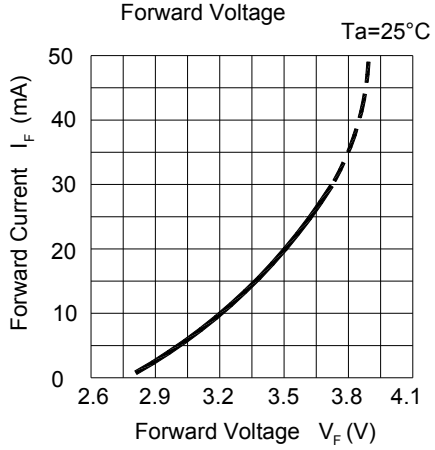


Typical Electro-Optical Characteristics Curves (GB)

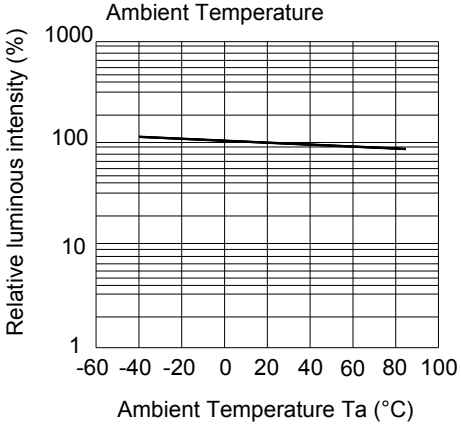
Spectrum Distribution



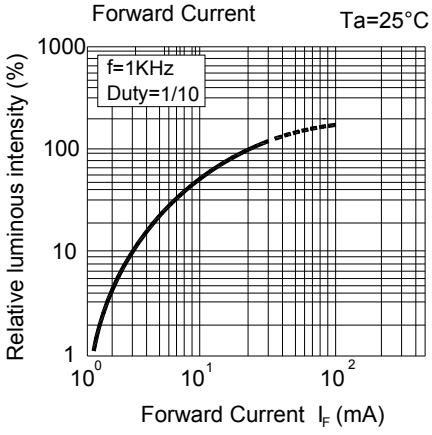
Forward Current vs. Forward Voltage



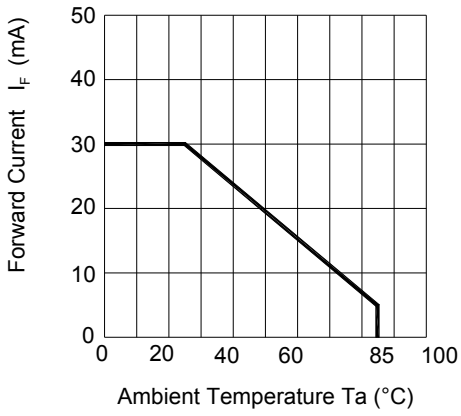
Relative Luminous Intensity vs. Ambient Temperature



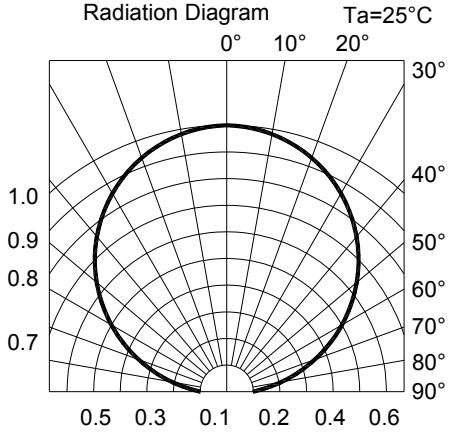
Relative Luminous Intensity vs. Forward Current



Forward Current Derating Curve

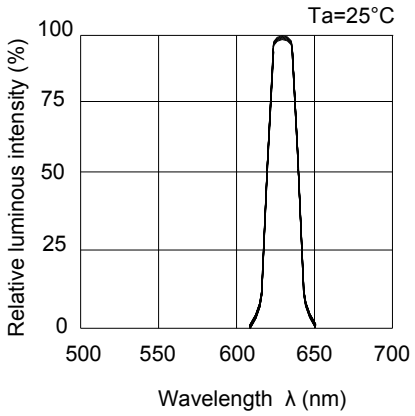


Radiation Diagram

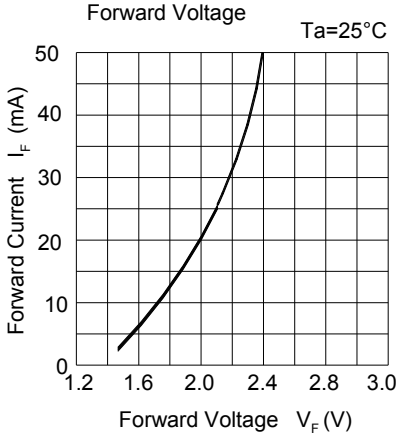


Typical Electro-Optical Characteristics Curves (RE)

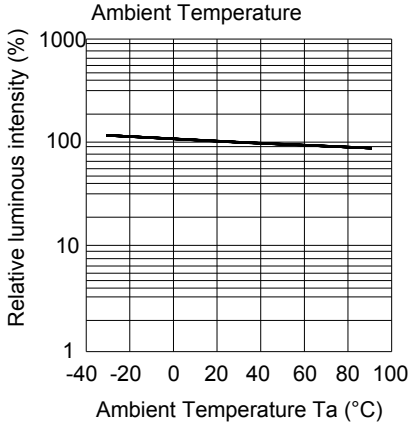
Spectrum Distribution



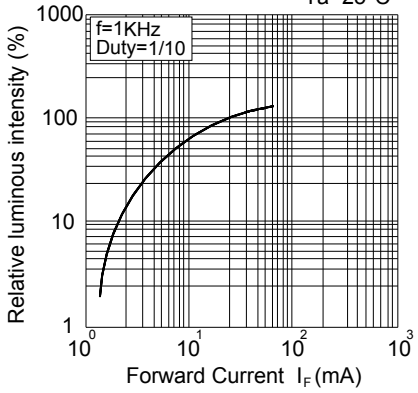
Forward Current vs. Forward Voltage



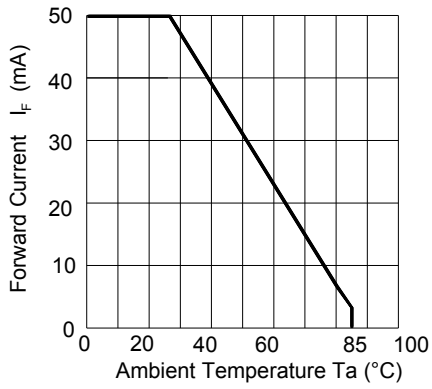
Relative Luminous Intensity vs. Ambient Temperature



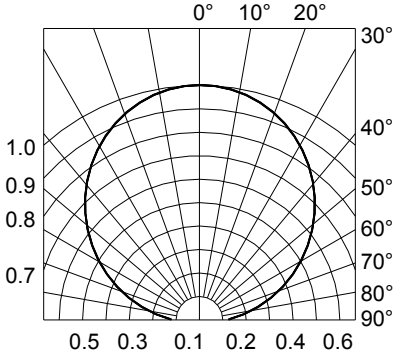
Relative Luminous Intensity vs. Forward Current



Forward Current Derating Curve



Radiation Diagram

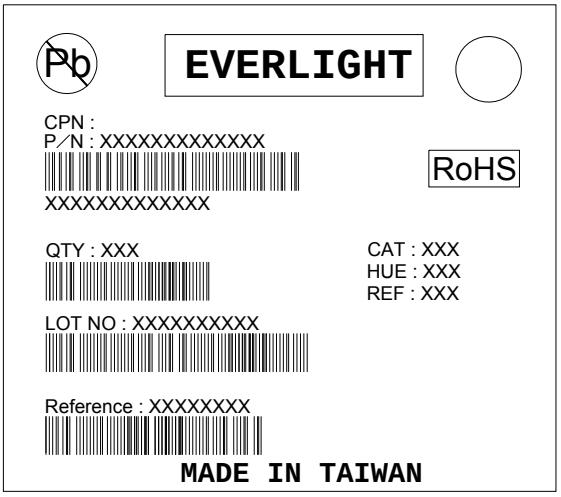


Label Explanation

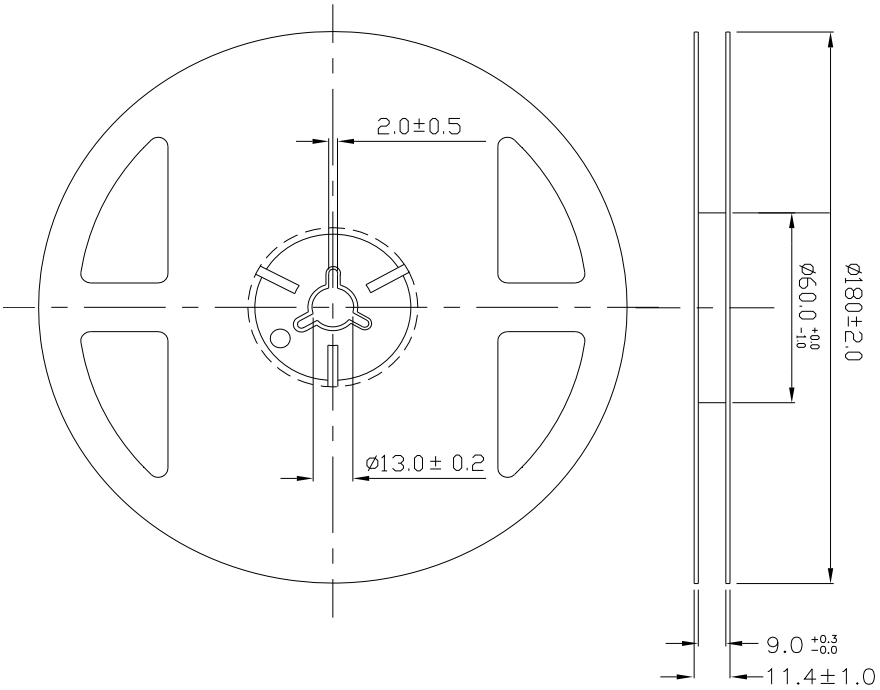
CAT: Luminous Intensity Rank

HUE: Dom. Wavelength Rank

REF: Forward Voltage Rank

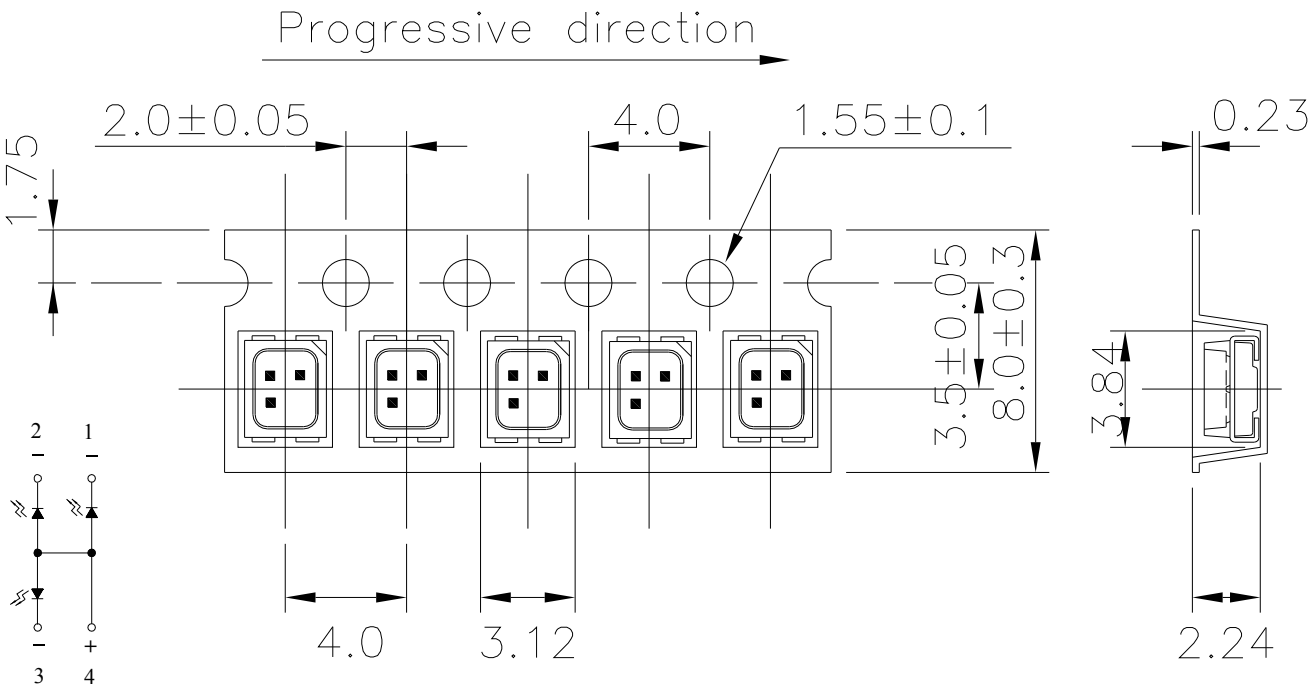


Reel Dimensions



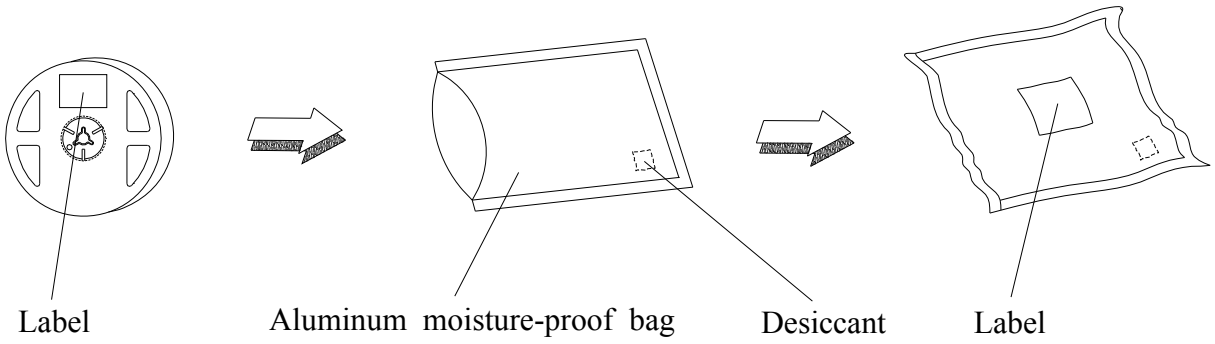
Note: The tolerances unless mentioned is: ±0.1mm; Unit = mm

Carrier Tape Dimensions: Loaded Quantity 2000 PCS Per Reel.



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

Moisture Resistant Packaging



Reliability Test Items and Conditions

The reliability of products shall be satisfied with items listed below.
Confidence level：90%
LTPD：10%

No.	Items	Test Condition	Test Hours/Cycles	Sample Size	Ac/Re
1	Reflow Soldering	Temp. : 260℃±5℃ Max 10 sec.	6 min	22 PCS.	0/1
2	Temperature Cycle	H : +100℃ 15min ∫ 5 min L : -40℃ 15min	300 Cycles	22 PCS.	0/1
3	Thermal Shock	H : +100℃ 5min ∫ 10 sec L : -10℃ 5min	300 Cycles	22 PCS.	0/1
4	High Temperature Storage	Temp. : 100℃	1000 Hrs.	22 PCS.	0/1
5	Low Temperature Storage	Temp. : -40℃	1000 Hrs.	22 PCS.	0/1
6	DC Operating Life	I_F = 20 mA	1000 Hrs.	22 PCS.	0/1
7	High Temperature / High Humidity	85℃/85%RH	1000 Hrs.	22 PCS.	0/1

Precautions for Use

1. Over-current-pro

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

2. Stora

   2.1 Do not open moisture proof bag before the products are ready to use.

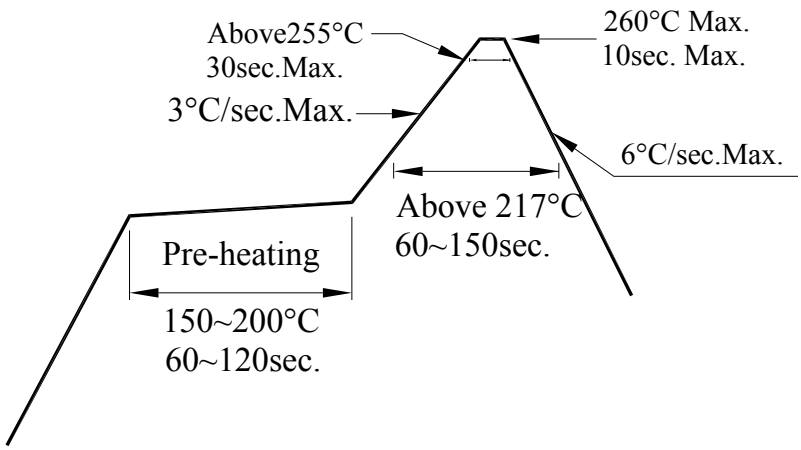
   2.2 Before opening the package: The LEDs should be kept at 30℃ or less and 90%RH or less.

   2.3 After opening the package: The LED's floor life is 168 hours under 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.

3. Soldering Conditi

   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.

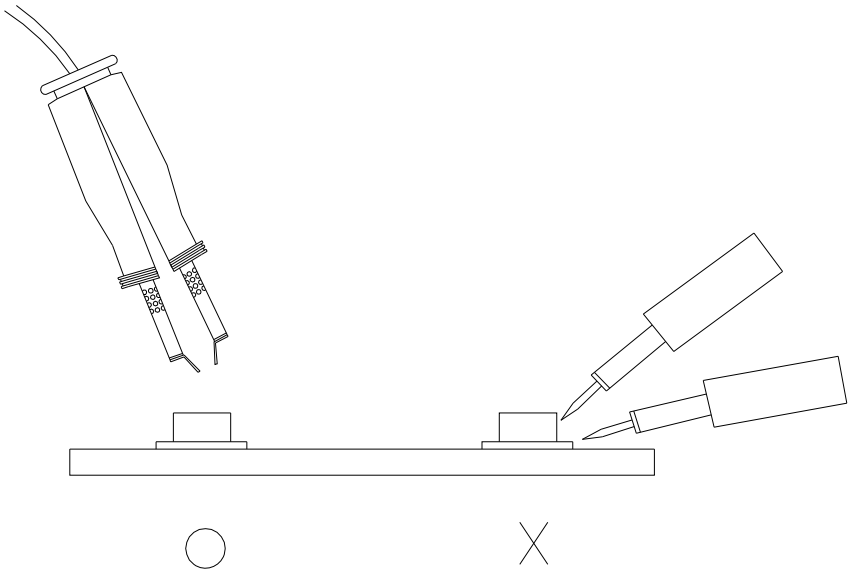
   3.4 After soldering, do not warp the circuit board.

4. Soldering Ir

   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. Repairi

   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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