DATASHEET

Mini Top View LEDs
EAPL3527BGRA0

PRELIMINARY

Features

- P-LCC-4 package.
- White package and black surface.
- 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.
- Available on tape and reel (8mm Tape).
- Pb-free.
- The product itself will remain with RoHS compliant version

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 Type	Chip Materials	Emitted Color	Resin Color
R6	AlGaInP	Brilliant Red	White Diffuse
GH	InGaN	Brilliant Green	
BH	InGaN	Blue	

Absolute Maximum Ratings (Ta=25℃)

Parameter	Symbol	Rating		Unit
Reverse Voltage	V_R	5		V
Forward Current	I_F	R6	50	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	95	
		BH	95	
Electrostatic Discharge(HBM)	ESD	R6	2000	V
		GH	150	
		BH	150	
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	R6	180	-----	360	mcd	I_F=20mA
		GH	450	-----	900		
		BH	180	-----	360		
Peak Wavelength	λp	R6	-----	632	-----	nm	I_F=20mA
		GH	-----	518	-----		
		BH	-----	468	-----		
Dominant Wavelength	λd	R6	619	-----	628	nm	I_F=20mA
		GH	525	-----	532.5		
		BH	465	-----	472.5		
Spectrum Radiation Bandwidth	Δ λ	R6	-----	20	-----	nm	I_F=20mA
		GH	-----	35	-----		
		BH	-----	35	-----		
Forward Voltage	V_F	R6	1.75	-----	2.35	V	I_F=20mA
		GH	2.9	-----	3.5		
		BH	2.9	-----	3.5		
Viewing Angle	2θ1/2		-----	120	-----	deg	I_F=20mA
Reverse Current	I_R	R6	-----	-----	10	μA	V_R=5V
		GH	-----	-----	50		
		BH	-----	-----	50		

Note:
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
Iv	R6	S1	180	225	mcd	I_F =20mA
		S2	225	285		
		T1	285	360		
	GH	U1	450	565		
		U2	565	715		
		V1	715	900		
	BH	S1	180	225		
		S2	225	285		
		T1	285	360		

Note: Tolerance of Luminous Intensity: ±11%

Bin Range of Dominant Wavelength

Symbol		Bin Code	Min.	Max.	Unit	Condition
λd	R6	R1	619	622	nm	I_F =20mA
		R2	622	625		
		R3	625	628		
	GH	G1	525	527.5		
		G2	527.5	530		
		G3	530	532.5		
	BH	B1	465	467.5		
		B2	467.5	470		
		B3	470	472.5		

Note: Tolerance of Dominant Wavelength: ±1nm

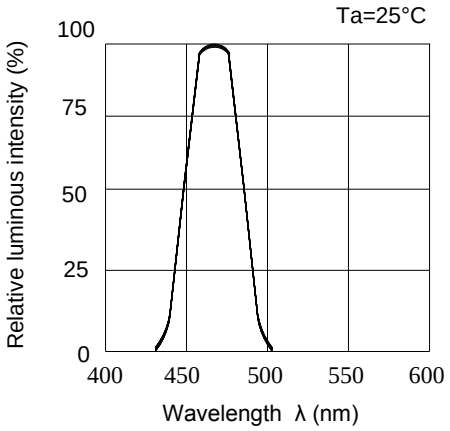
Bin Rang of Forward Voltage

Symbol		Bin Code	Min.	Max.	Unit	Condition
V_F	R6	0	1.75	1.95	V	I_F =20mA
		1	1.95	2.15		
		2	2.15	2.35		
	GH	11	2.90	3.10		
		12	3.10	3.30		
		13	3.30	3.50		
	BH	11	2.90	3.10		
		12	3.10	3.30		
		13	3.30	3.50		

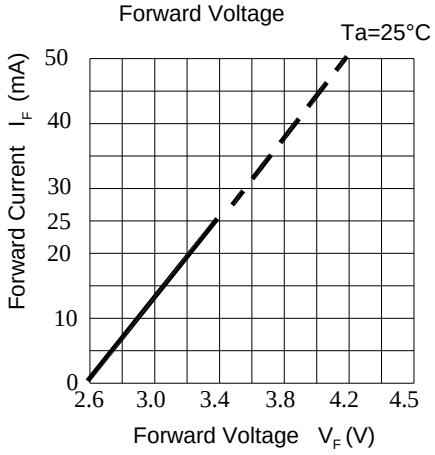
Note: Tolerance of Forward Voltage ±0.1V

Typical Electro-Optical Characteristics Curves (BH)

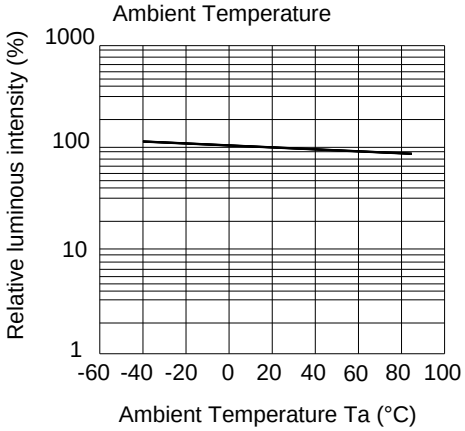
Spectrum Distribution



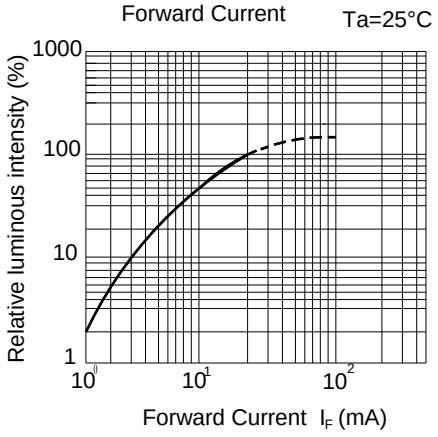
Forward Current vs. Forward Voltage



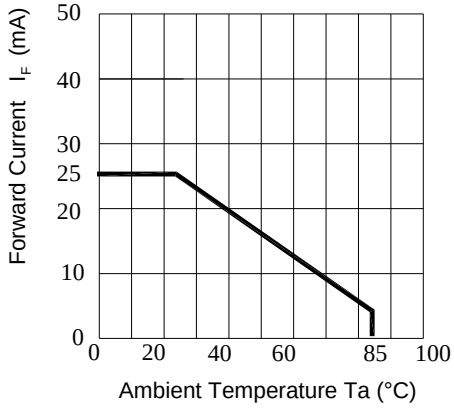
Luminous Intensity vs. Ambient Temperature



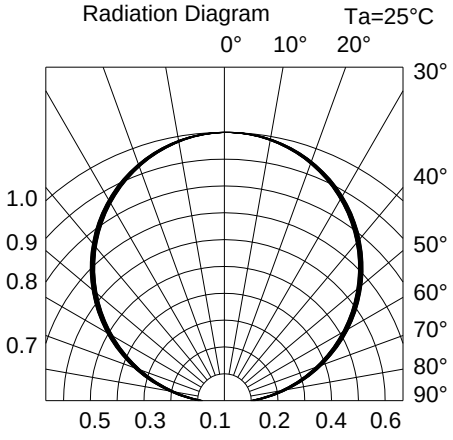
Luminous Intensity vs. Forward Current



Forward Current Derating Curve

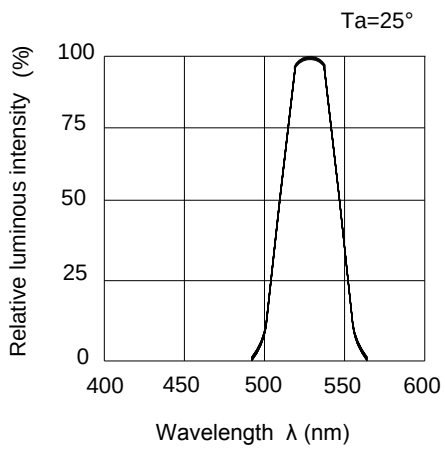


Radiation Diagram

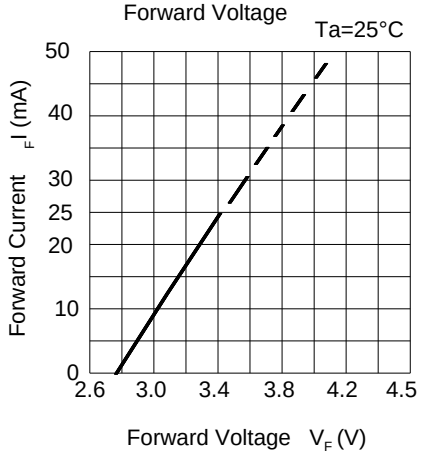


Typical Electro-Optical Characteristics Curves (GH)

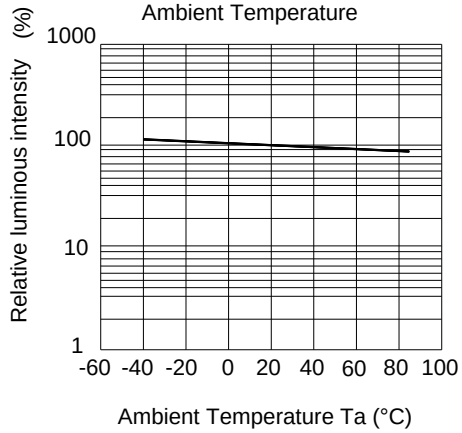
Spectrum Distribution



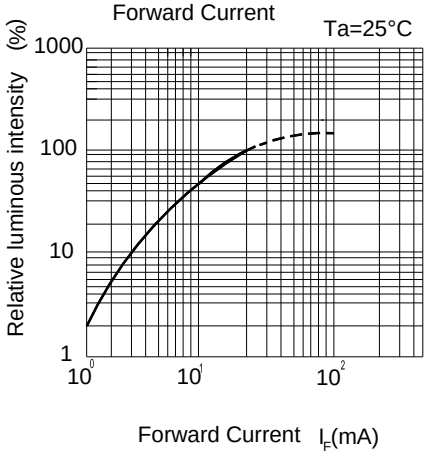
Forward Current vs. Forward Voltage



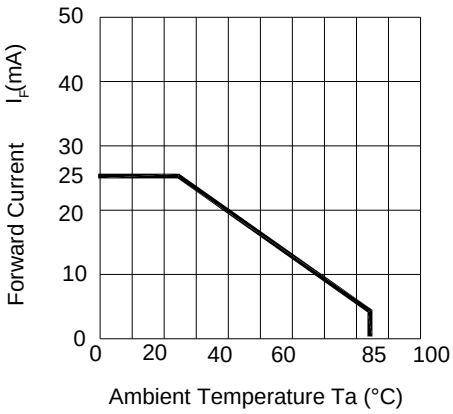
Luminous Intensity vs. Ambient Temperature



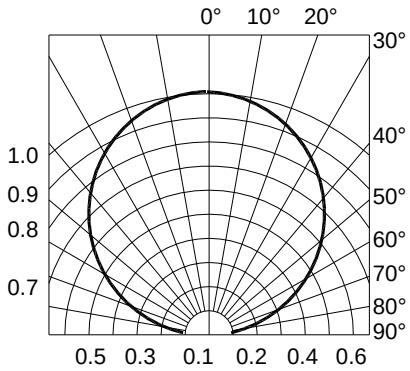
Luminous Intensity vs Forward Current



Forward Current Derating Curve

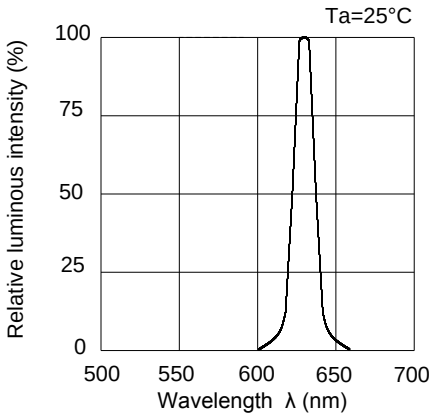


Radiation Diagram Ta=25°C

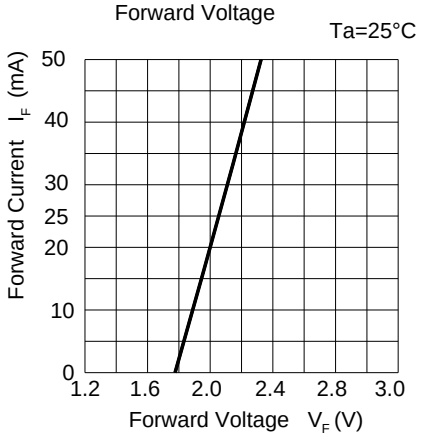


Typical Electro-Optical Characteristics Curves (R6)

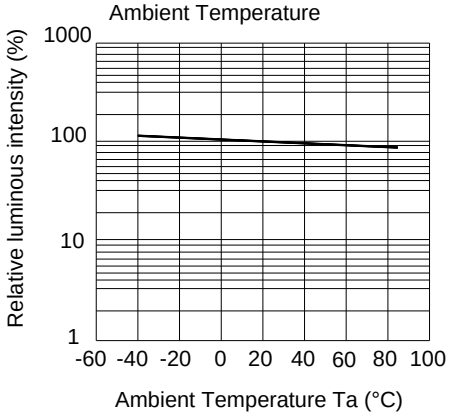
Spectrum Distribution



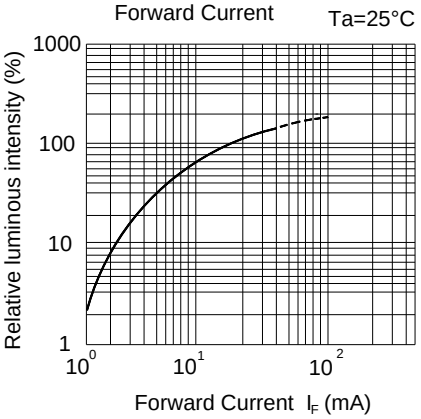
Forward Current vs. Forward Voltage



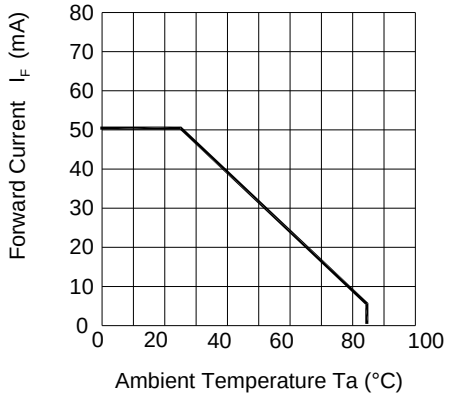
Luminous Intensity vs. Ambient Temperature



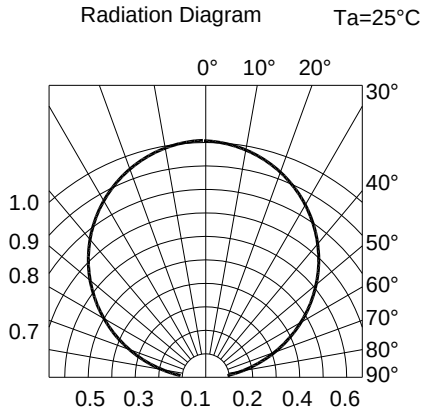
Luminous Intensity vs. Forward Current



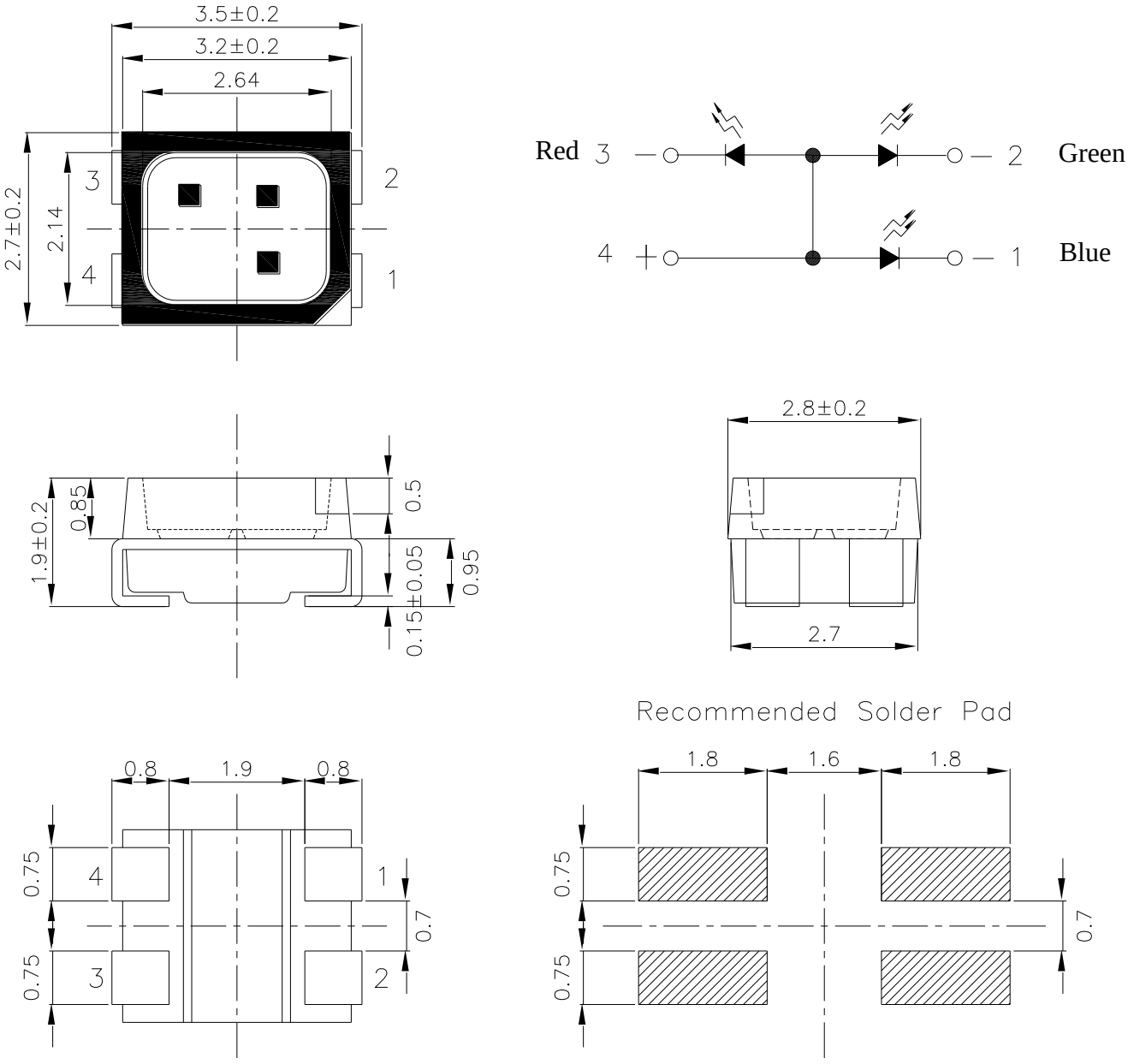
Forward Current Derating Curve



Radiation Diagram



Package Dimension



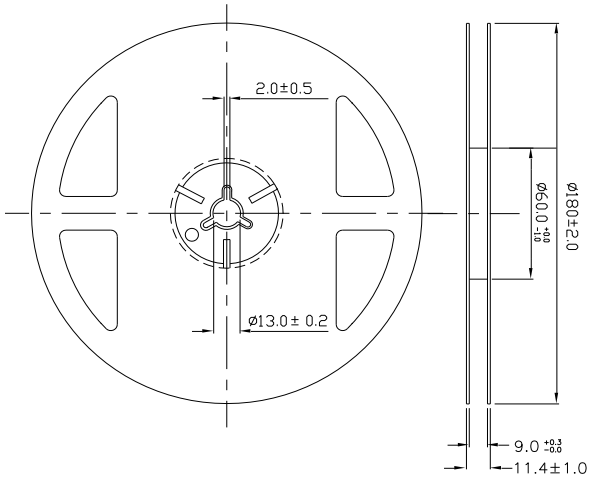
Note: Tolerances unless mentioned ±0.1mm. Unit = mm

Moisture Resistant Packing Materials

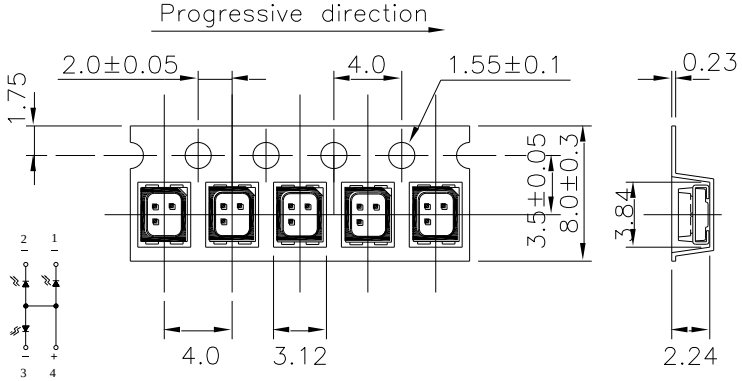
Label Explanation

- 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

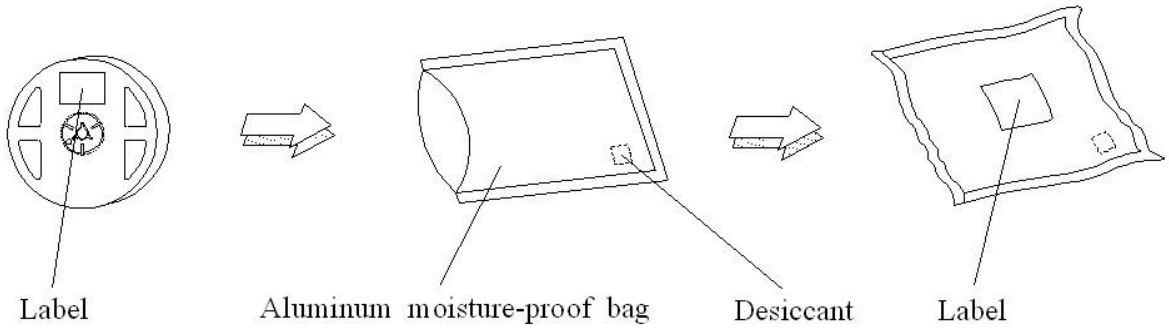


Carrier Tape Dimensions: Loaded Quantity 2000 pcs Per Reel



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

Moisture Resistant Packing Process

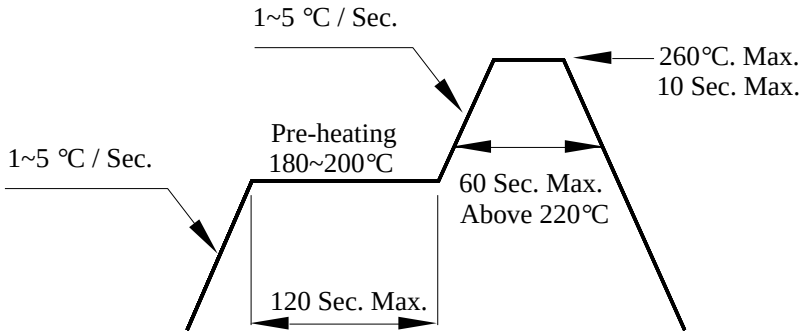


Note: Tolerances unless mentioned ±0.1mm. Unit = mm

Precautions for Use

1. Over-current-proof
   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℃ or less and 90%RH or less.
   2.3 After opening the package: The LED's floor life are 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 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 280℃ 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.