DATASHEET

SMD ▪ REFLECTOR
EAPL3528OA0-AM

Lead (Pb) Free Product - RoHS Compliant

- P-LCC-2 package.
- Colored Clear resin.
- Wide viewing angle 120°.
- Inner reflector and white package.
- Qualification according to AEC-Q101 rev C.
- Precondition: Bases on JEDEC J-STD 020D Level 3.
- Automotive reflow profile (IR reflow or wave soldering)
- Compliance with EU REACH.

Applications

- Automotive Lighting Interior and Exterior.
- Signal and Symbol Luminary.
- Commercial and Industrial Illumination.
- Backlight: LCD, Switches, Push buttons.

Device Selection Guide

Chip Materials	Emitted Color	Resin Color
AlGaInP	Reddish Orange	Water Clear

Absolute Maximum Ratings (Ta=25℃)

Parameter	Symbol	Rating	Unit
Reverse Voltage	V_R	10	V
Forward Current	I_F	70	mA
Peak Forward Current (Duty 1/10 @1KHz)	I_{FP}	100	mA
Power Dissipation	Pd	196	mW
Electrostatic Discharge	ESD_{HBM}	2000	V
	ESD_{MM}	200	V
Operating Temperature	Topr	-40 ~ +100	℃
Storage Temperature	Tstg	-40 ~ +110	℃
Soldering Temperature	Tsol	Reflow Soldering : 260 ℃ for 30 sec. Hand Soldering : 350 ℃ for 3 sec.	

Electro-Optical Characteristics (Ta=25℃)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Luminous Intensity	Iv	710	---	1800	mcd	I_F= 20mA
Viewing Angle	$2\theta_{1/2}$	---	120	---	deg	
DominantWavelength	λ_d	612	---	624	nm	
Forward Voltage	V_F	1.80	---	2.80	V	
Reverse Current	IR	---	---	10	μA	VR=10V

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

Bin Code	Min.	Max.	Unit	Condition
V1	710	900	mcd	I_F = 20mA
V2	900	1120		
AA	1120	1400		
AB	1400	1800		

Bin Range of Dominant Wavelength

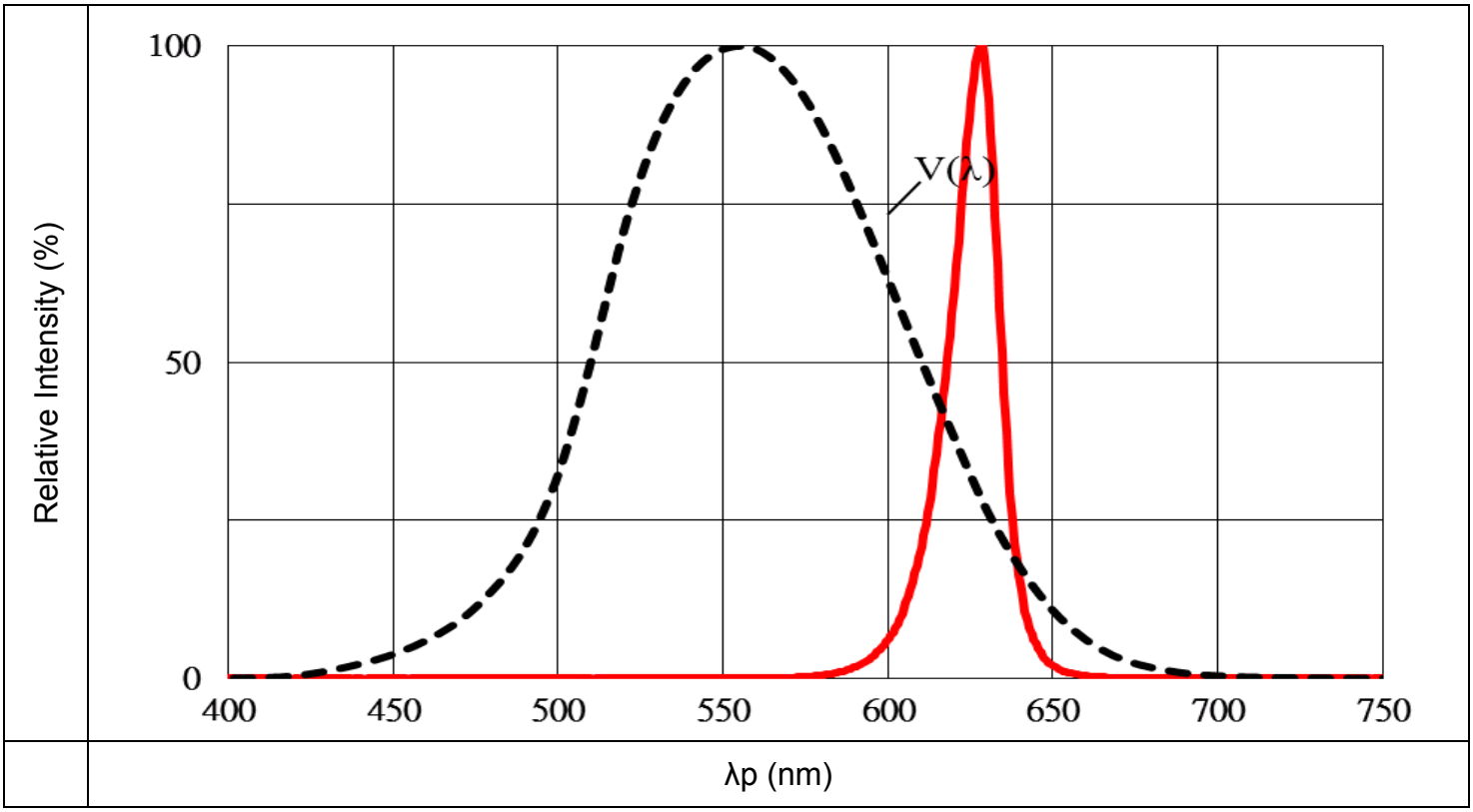
Bin Code	Min.	Max.	Unit	Condition
KJ-1	612	615	nm	I_F = 20mA
KJ-2	615	618		
KJ-3	618	621		
KJ-4	621	624		

Bin Range of Forward Voltage

Bin Code	Min.	Max.	Unit	Condition
G3-1	1.80	2.00	V	I_F =20mA
G3-2	2.00	2.20		
G3-3	2.20	2.40		
G3-4	2.40	2.60		
G3-5	2.60	2.80		

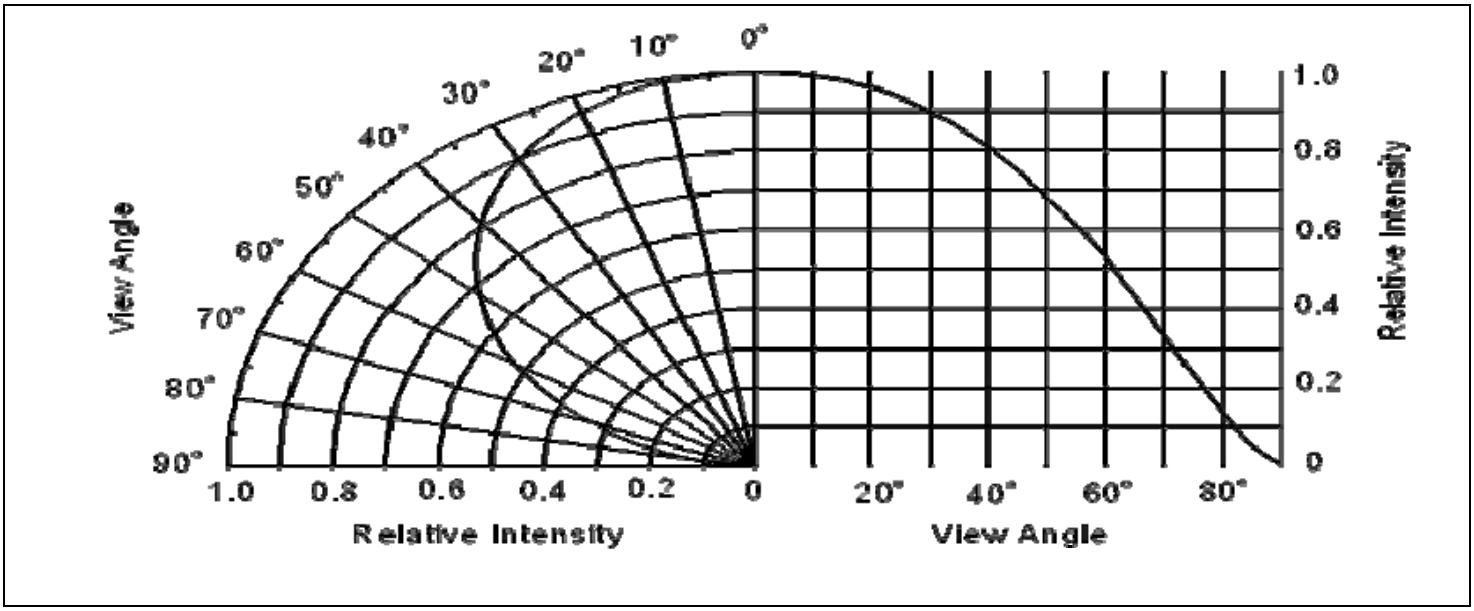
Typical Electro-Optical Characteristics Curves(Ta=25℃)

Typical Curve of Spectral Distribution

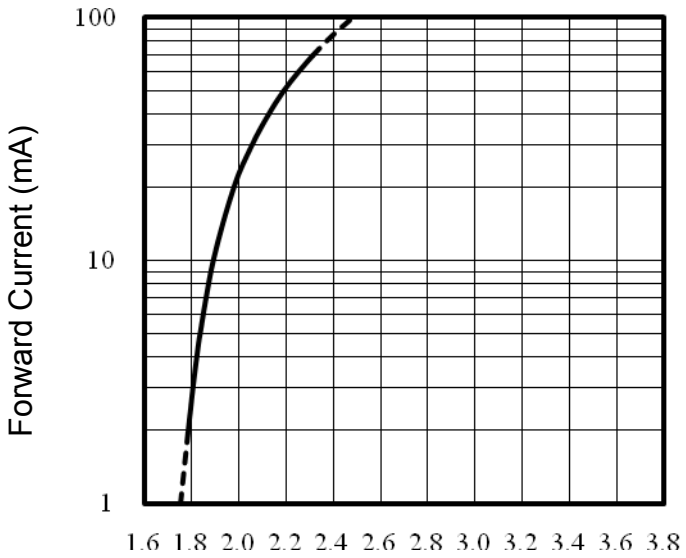


Note: V(λ)=Standard eye response curve;

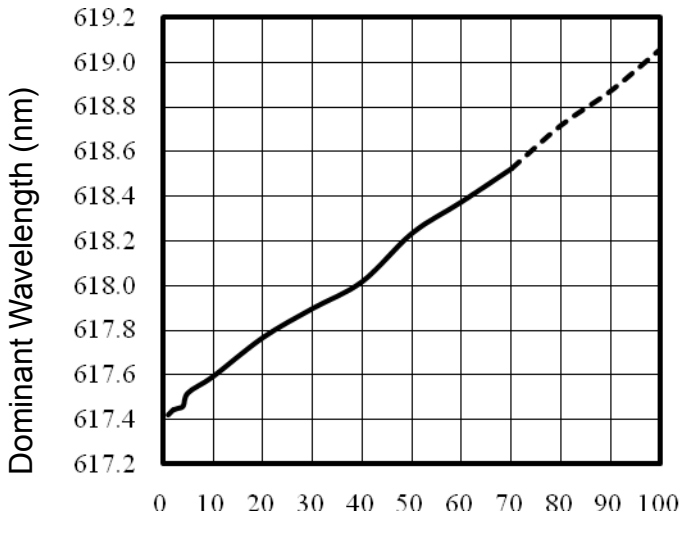
Diagram Characteristics of Radiation



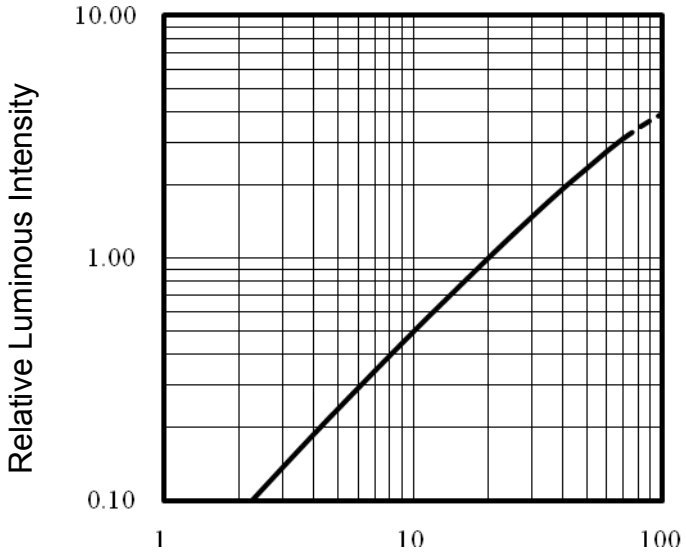
Forward Current vs. Forward Voltage (Ta=25℃)



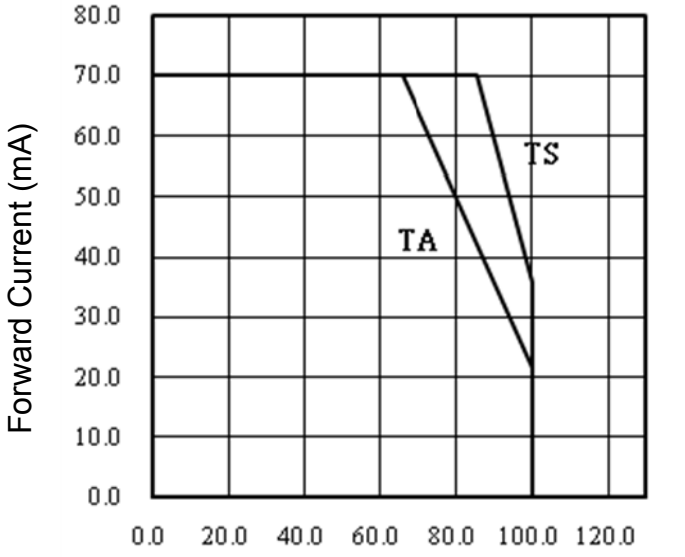
Dominant Wavelength vs. Forward Current (Ta=25℃)



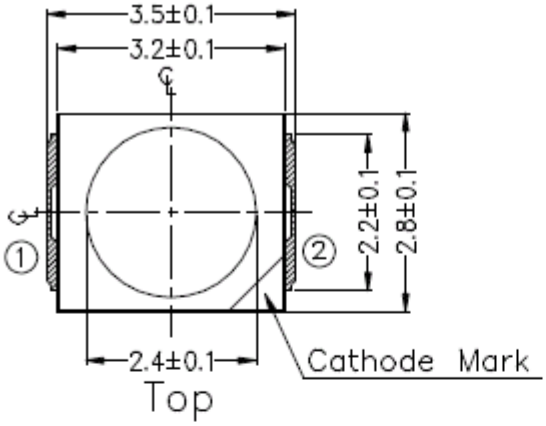
Relative Luminous Intensity vs. Forward Current (Ta=25℃)

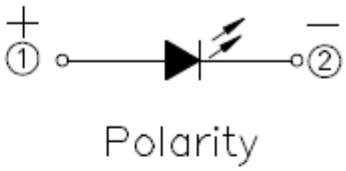


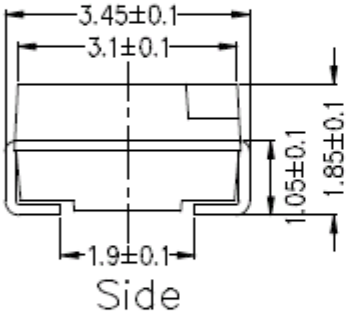
Forward current vs. Ambient and Solder Temperature

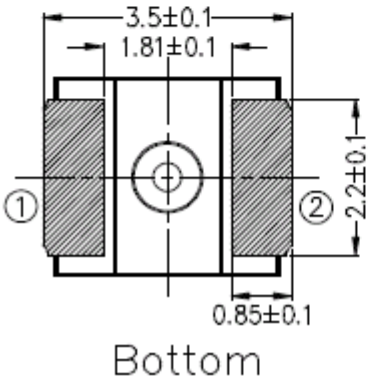


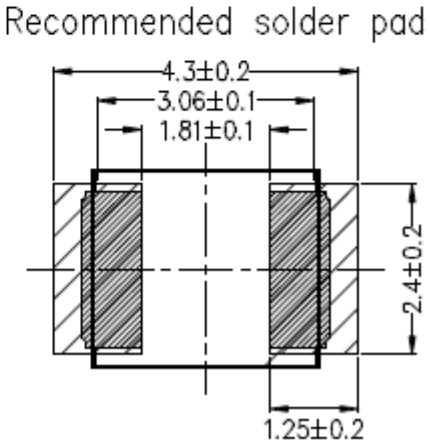
Package Dimension







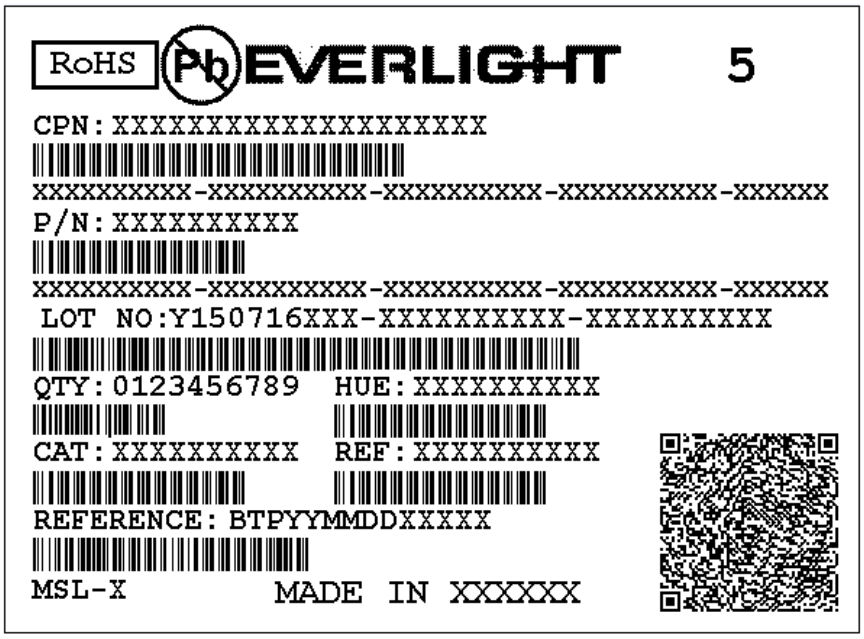




Note: Tolerances unless mentioned ±0.1mm. Unit = mm

Moisture Resistant Packing Materials

Label Explanation

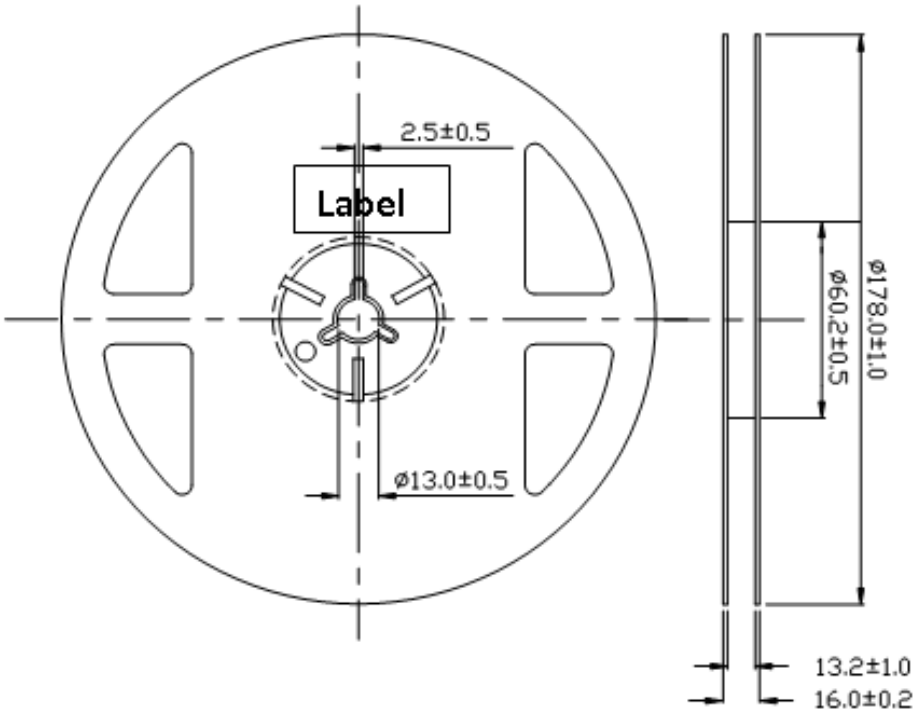


CAT: Luminous Intensity Rank

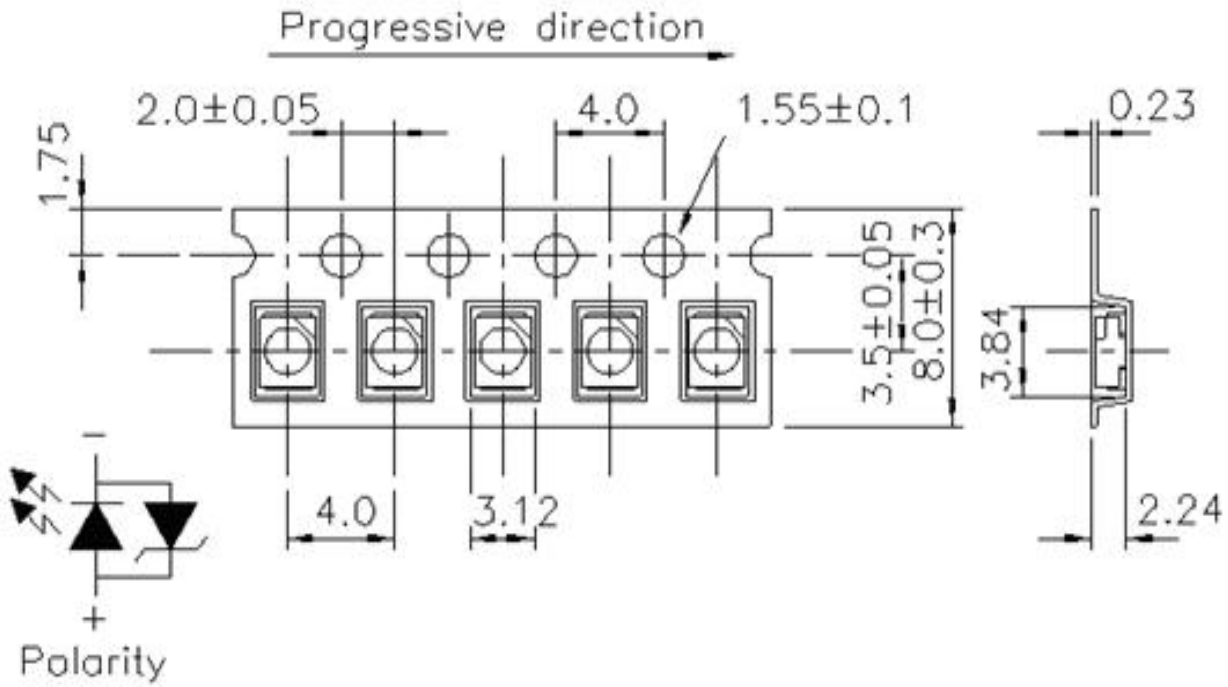
HUE: Dom. Wavelength Rank

REF: Forward Voltage Rank

Reel Dimensions

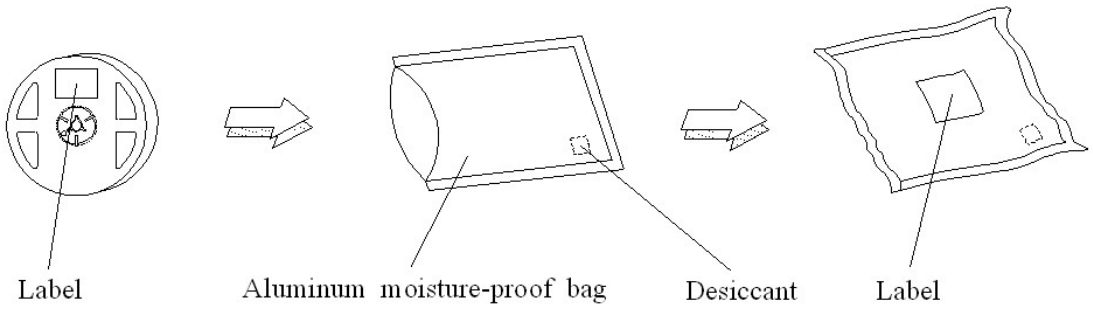


Carrier Tape Dimensions: Loaded Quantity 2000 pcs Per Reel



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

Moisture Resistant Packing Process

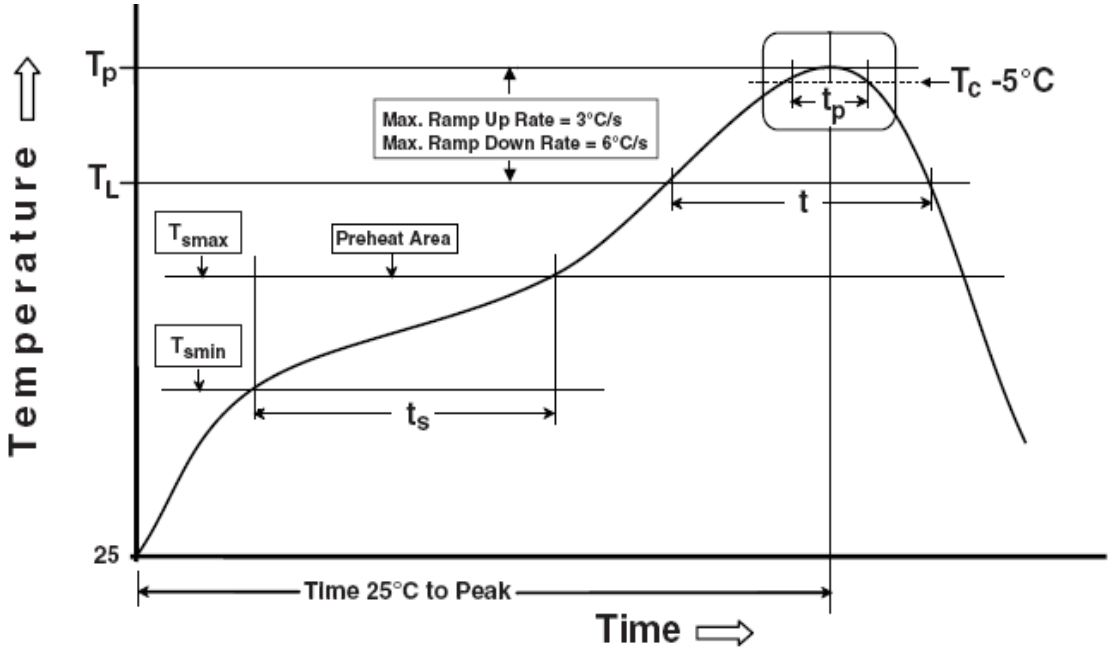


Note: Tolerances unless mentioned ±0.1mm. Unit = mm

Precautions for Use

1. Soldering Condition

1.1 (A) Maximum Body Case Temperature Profile for evaluation of Reflow Profile



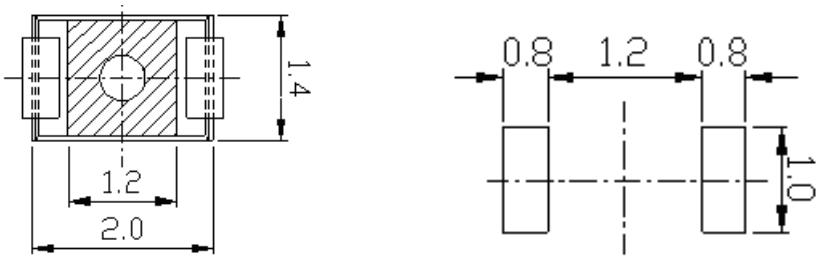
Note: Reference: IPC/JEDEC J-STD-020D

Preheat	
Temperature min (T_{smin})	150 °C
Temperature max (T_{smax})	200°C
Time (T_{smin} to T_{smax}) (t_s)	60-120 seconds
Average ramp-up rate (T_{smax} to T_p)	3 °C/second max.
Other	
Liquidus Temperature (T_L)	217 °C
Time above Liquidus Temperature (t_L)	60-150 sec
Peak Temperature (T_P)	260°C
Time within 5 °C of Actual Peak Temperature: T_P - 5°C	30 s
Ramp- Down Rate from Peak Temperature	6°C /second max.

Time 25°C to peak temperature 8 minutes max.

All parameters are maximum body case temperature values and cannot be considered as a soldering profile. The body temperature was measured by soldering a thermal couple to the soldering point of LEDs.

(B) Recommend soldering pad



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

2. Current limiting

A resistor should be used to limit current spikes that can be caused by voltage fluctuations. Otherwise damage could occur.

3. Storage

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

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

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

3.4 If the moisture sensitivity card indicates higher than acceptable moisture, the component should be baked at min. 60deg +/-5deg for 24 hours.

4. Iron Soldering

Hand soldering is not recommended for regular production. These guidelines are for rework only. Soldering iron tip should contact each terminal no more than 3 sec at 350℃, using soldering iron with nominal power less than 25W. Allow min. 2 sec. between soldering intervals.

5. Usage

Do not exceed the values given in this specification.

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	2015/12/22	New Spec
2	2016/01/06	Approved