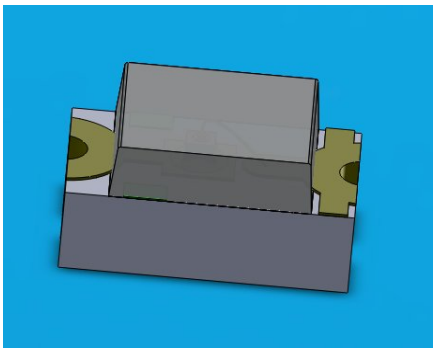
EVERLIGHT AMERICAS

DATASHEET

SMD ▪ B

EAST2012YA0-AM



Features

•RoHS compliant

•Chip LED package.

•Colorless clear resin.

•Wide viewing angle 140°.

•Brightness: 11.2 to 28 mcd at 20mA.

•Qualification according to AEC-Q101.

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

•Automotive reflow profile (IR reflow or wave soldering).

•Compliance with EU REACH.

•Compliance Halogen Free .(Br <900 ppm ,Cl <900 ppm , Br+Cl < 1500 ppm).

Applications

•Automotive backlighting or indicator: Dashboard, switch, audio and video equipments…etc.

•Backlight: LCD, switches, symbol, mobile phone and illuminated advertising.

•Display for indoor and outdoor application.

•Ideal for coupling into light guides.

•Substitution of traditional light.

•Optical indicator.

•General applications.

Device Selection Guide

Chip Materials	Emitted Color	Resin Color
AlGaInP	Brilliant Yellow	Water Clear

Absolute Maximum Ratings (Ta=25℃)

Parameter	Symbol	Rating	Unit
Reverse Voltage	V_R	12	V
Forward Current	I_F	30	mA
Peak Forward Current (Duty 1/10 @1KHz)	I_{FP}	60	mA
Power Dissipation	Pd	60	mW
Junction Temperature	T_j	125	℃
Operating Temperature	T_{opr}	-40 ~ +100	℃
Storage Temperature	Tstg	-40 ~ +110	℃
Thermal Resistance	Rth $_{J-A}$	800	K/W
	Rth $_{J-S}$	450	K/W
ESD (Classification acc. AEC Q101)	ESD_{HBM}	2000	V
	ESD_{MM}	200	V

Soldering Temperature	T_{sol}	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	11.2	-----	28.0	mcd	I_F=5mA
Viewing Angle	$2\theta_{1/2}$	-----	140	-----	deg	I_F=5mA
Peak Wavelength	λp	-----	591	-----	nm	I_F=5mA
Dominant Wavelength	λd	585.5	----	594.5	nm	I_F=5mA
Spectrum Radiation Bandwidth	Δλ	-----	15	-----	nm	I_F=5mA
Forward Voltage	V_F	1.70	----	2.20	V	I_F=5mA
Reverse Current	I_R	-----	-----	10	μA	V_R=12V
Temperature coefficient of λp	$TC_{\lambda p}$	-----	0.06	-----	nm/K	I_F=5mA
Temperature coefficient of λd	$TC_{\lambda d}$	-----	0.4	-----	nm/K	I_F=5mA
Temperature coefficient of V_F	TC_V	-----	-2.3	-----	mV/K	I_F=5mA

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
L1	11.2	14.0	mcd	I_F =5mA
L2	14.0	18.0		
M1	18.0	22.4		
M2	22.4	28.0		

Note:
Tolerance of Luminous Intensity: ±11%

Bin Range of Dominant Wavelength

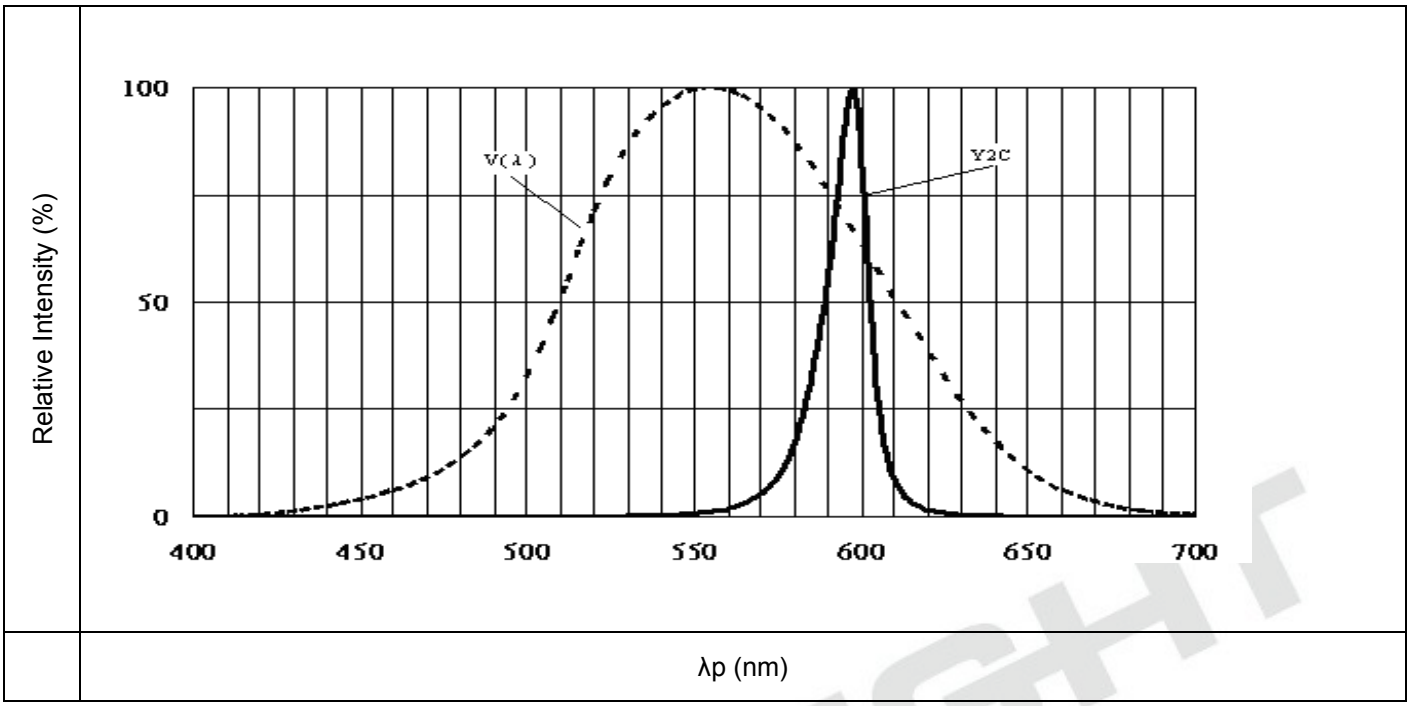
Bin Code	Min.	Max.	Unit	Condition

D3	585.5	588.5	nm	I_F =5mA
D4	588.5	591.5		
D5	591.5	594.5		

Note:
Tolerance of Dominant Wavelength: ±1nm

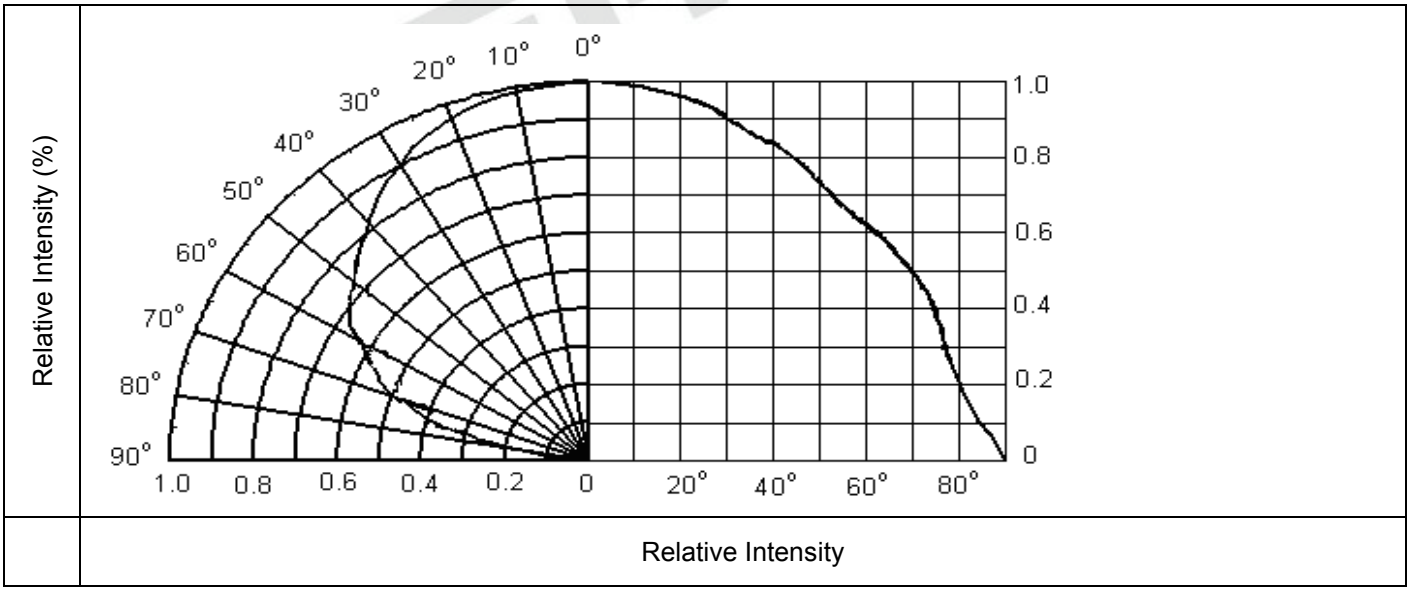
Typical Electro-Optical Characteristics Curves

Typical Curve of Spectral Distribution

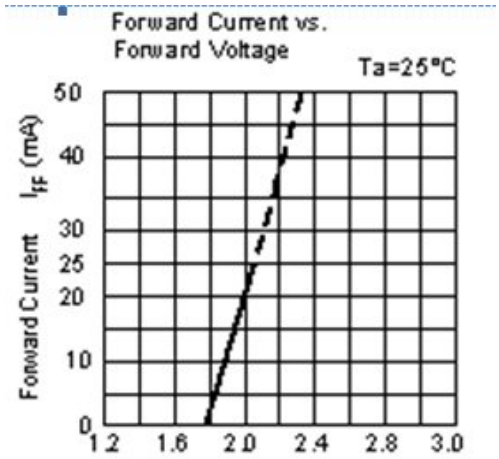


Note: V(λ)=Standard eye response curve; I_F =20mA

Diagram Characteristics of Radiation



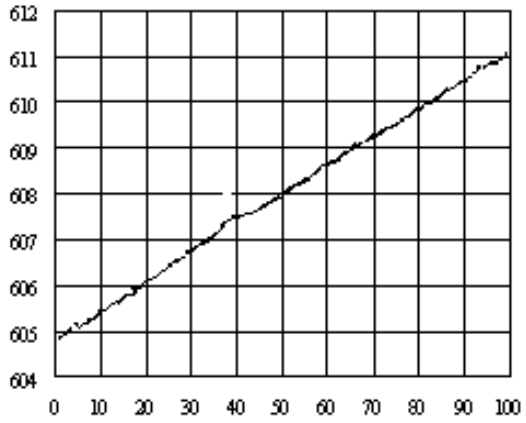
Forward Current vs. Forward Voltage (Ta=25℃)



Forward Current (mA)

Forward Voltage (V)

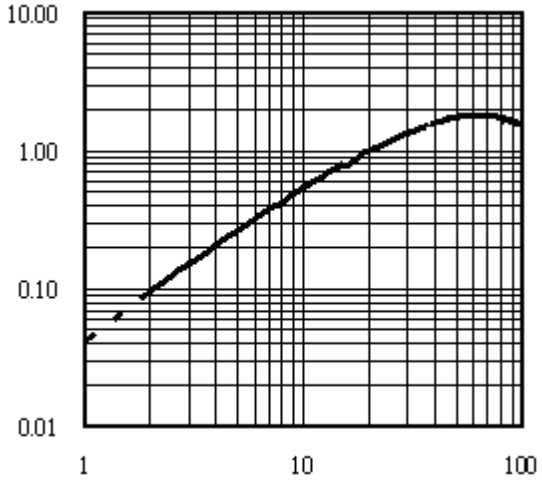
Dominant Wavelength vs. Forward Current (Ta=25℃)



Dominant Wavelength (nm)

Forward Current (mA)

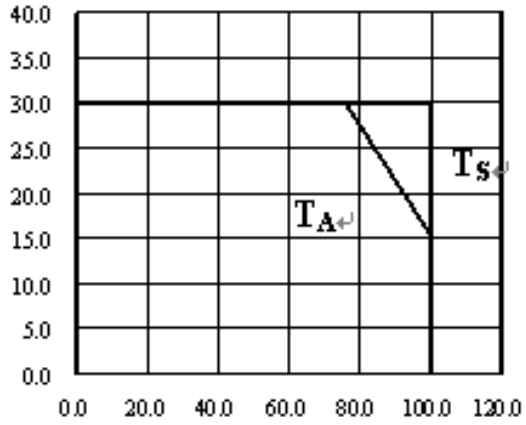
Relative Luminous Intensity vs. Forward Current (Ta=25℃)



Relative Luminous Intensity

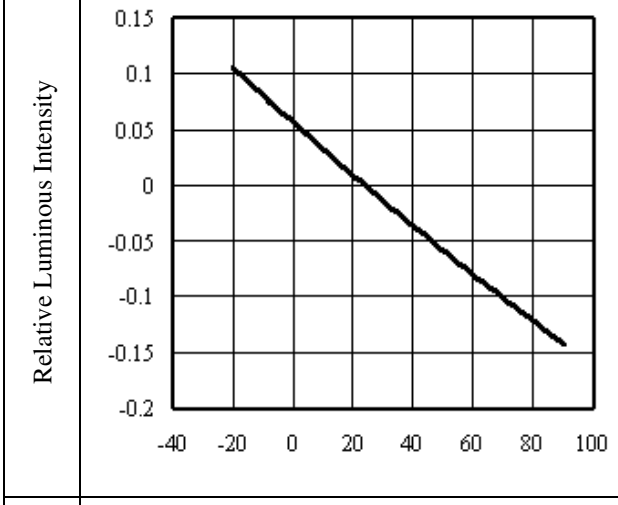
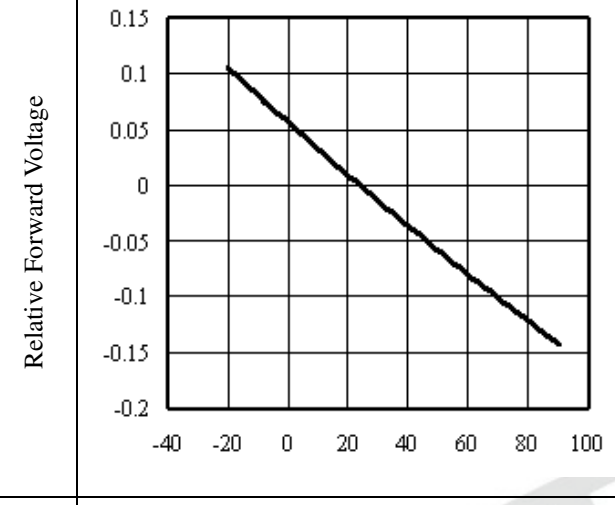
Forward Current (mA)

Max. Permissible Forward Current (Ta=25℃)

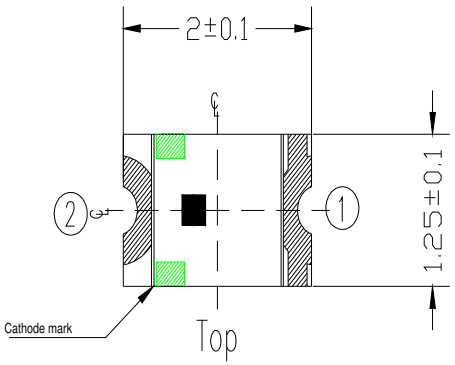


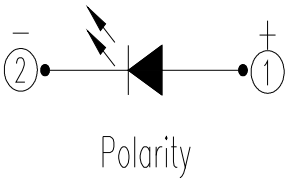
Forward Current (mA)

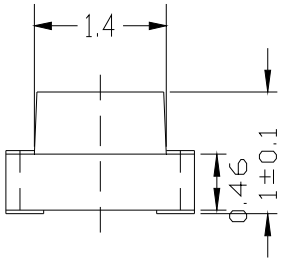
Temperature (℃)

Relative Luminous Intensity vs. Junction Temperature	**Relative Forward Voltage vs. Junction Temperature**
	
Note: f(Tj) = Iv / Iv(25℃); I_F =20mA	Note: $\Delta V_F = V_F - V_F(25\ ℃) = f(Tj)$; I_F =20mA

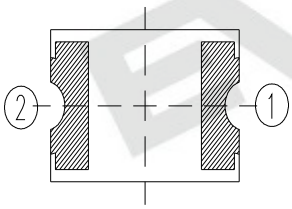
Package Dimension

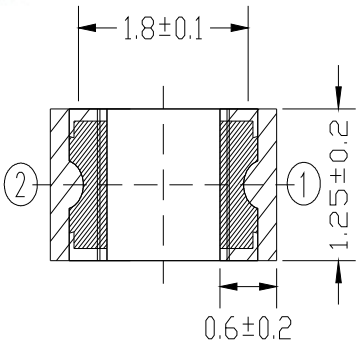






Recommend Sodering Pad



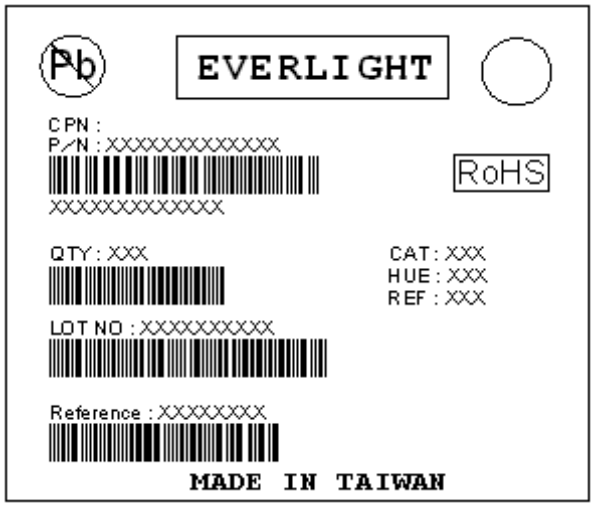


Suggested pad dimension is just for reference only.
Please modify the pad dimension based on individual need.

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

Moisture Resistant Packing Materials

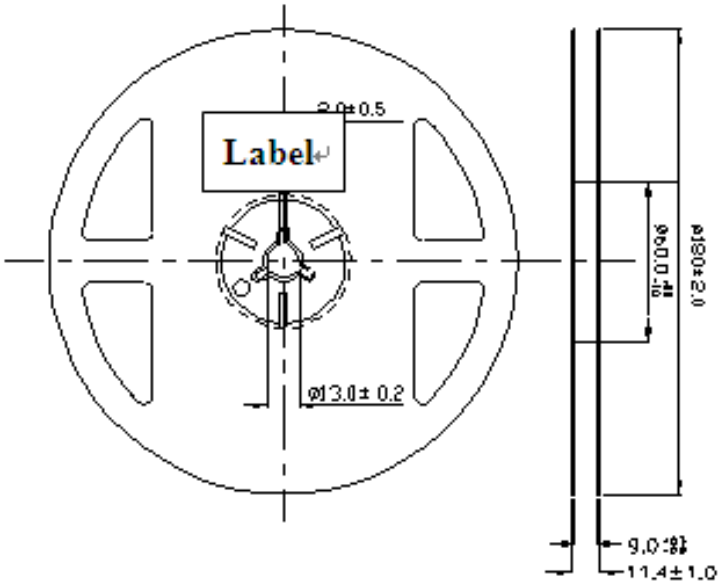
Label Explanation



Label Explanation

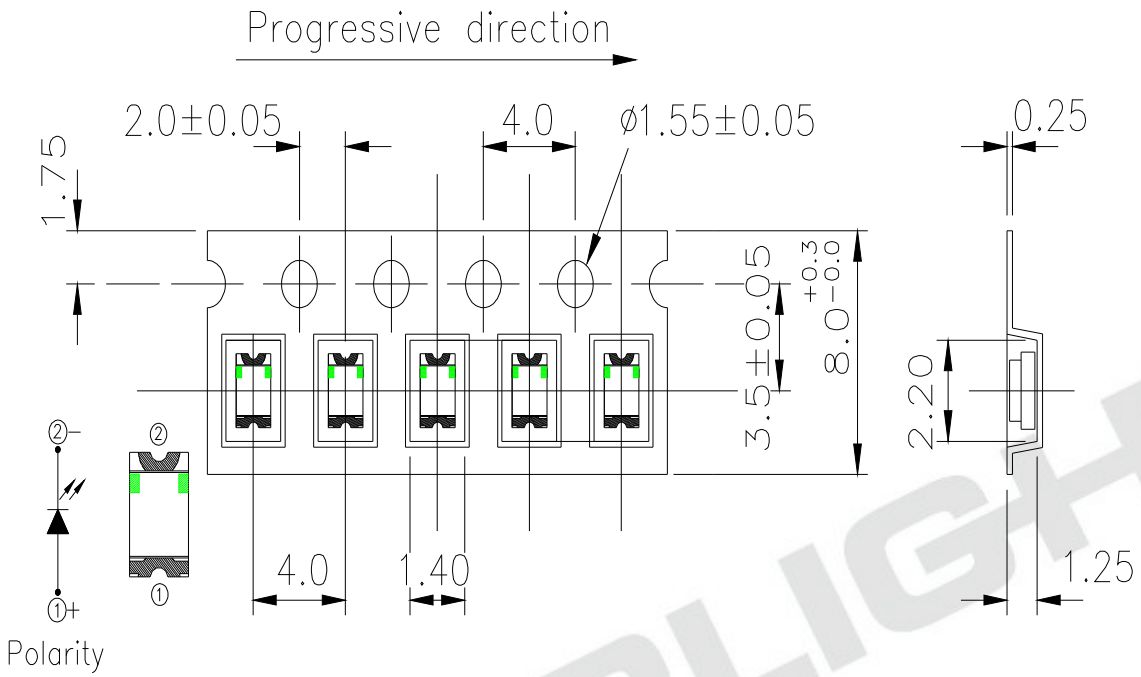
- **CPN: Customer's Product Number**
- **P/N: Product Number**
- **QTY: Packing Quantity**
- **CAT: Luminous Intensity Rank**
- **HUE: Dom. Wavelength Rank**
- **REF: Forward Voltage Rank**
- **LOT No: Lot Number**

Reel Dimensions



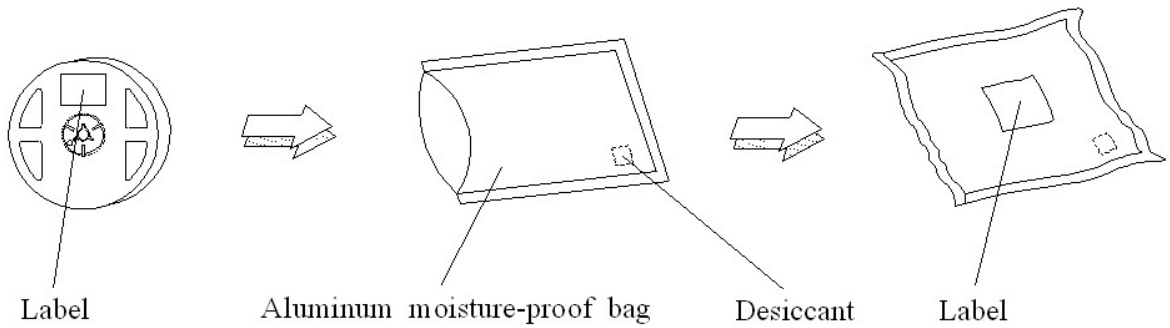
Note: The tolerances unless mentioned is ±0.1mm ,Unit = mm

Carrier Tape Dimensions: Loaded Quantity 3000 pcs Per Reel



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

Moisture Resistant Packing Process

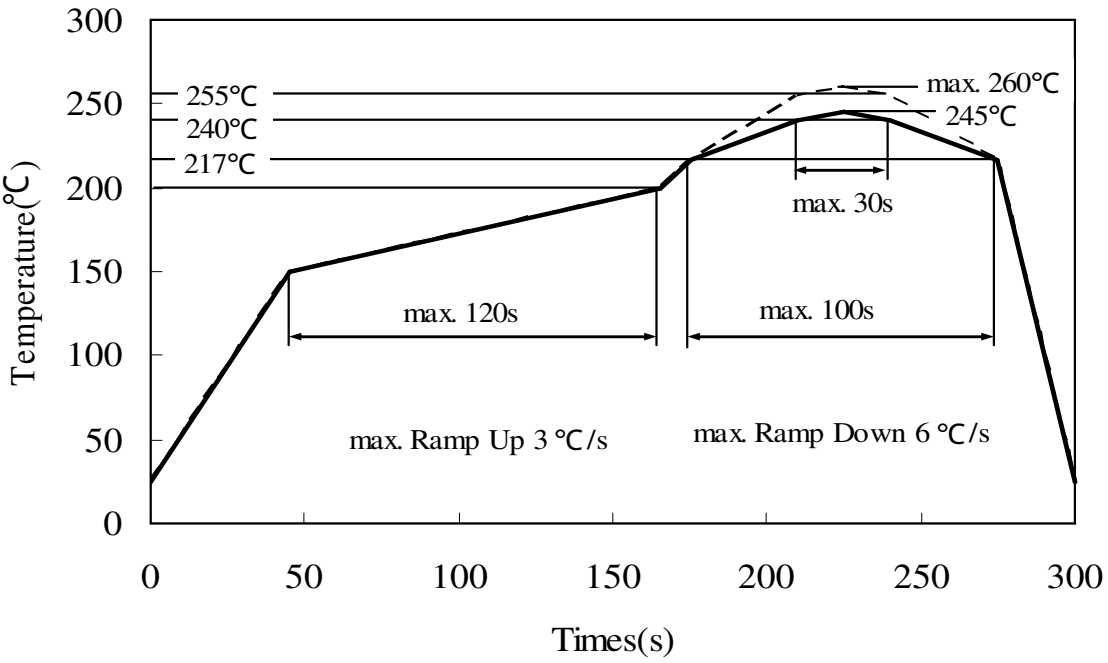


Note: Tolerances unless mentioned ±0.1mm. Unit = mm

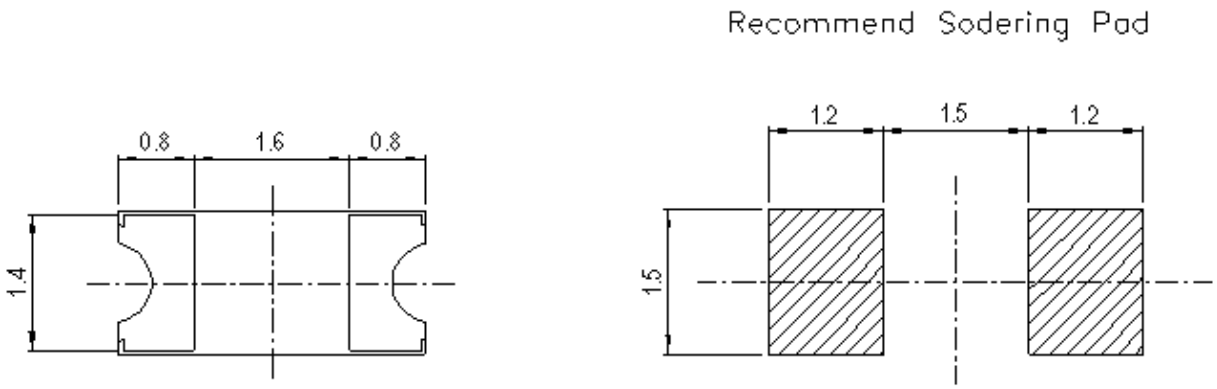
Precautions for Use

1. **Soldering Condition (Reference: IPC/JEDEC J-STD-020D)**

(A)IR reflow



(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 Do not open moisture proof bag before the products are ready to use.
   3.2 After opening the package: The LEDs should be kept at 30℃ or less and 60%RH or less.
   3.3 The LEDs should be used within 168 hours (7days) after opening the package .
   If unused LEDs remain, it should be stored in moisture proof packages.
   3.4 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.
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

1. 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 Americas 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.