EVERLIGHT

DATASHEET

SMD ▪ B
17-215-Y2C-P9Q2S1B0E-3T-AM

Features

- RoHS compliant
- Chip LED package.
- Colorless clear resin.
- Wide viewing angle 130°.
- Brightness: 90 to 224 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)

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.

Release Date :May.28.2013. Issue No: DSE-0005984 Rev.2

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	25	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	90	-----	224	mcd	I_F=20mA
Viewing Angle	$2\theta_{1/2}$	-----	130	-----	deg	I_F=20mA
Peak Wavelength	λp	-----	591	-----	nm	I_F=20mA
Dominant Wavelength	λd	584	----	596	nm	I_F=20mA
Spectrum Radiation Bandwidth	Δλ	-----	15	-----	nm	I_F=20mA
Forward Voltage	V_F	1.75	----	2.35	V	I_F=20mA
Reverse Current	I_R	-----	-----	10	μA	V_R=12V
Temperature coefficient of λp	$TC_{\lambda p}$	-----	0.06	-----	nm/K	I_F=20mA
Temperature coefficient of λd	$TC_{\lambda d}$	-----	0.4	-----	nm/K	I_F=20mA
Temperature coefficient of V_F	TC_V	-----	-2.3	-----	mV/K	I_F=20mA

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
Q2	90	112	mcd	I_F =20mA
R1	112	140		
R2	140	180		
S1	180	224		

Note:
Tolerance of Luminous Intensity: ±11%

Bin Range of Dominant Wavelength

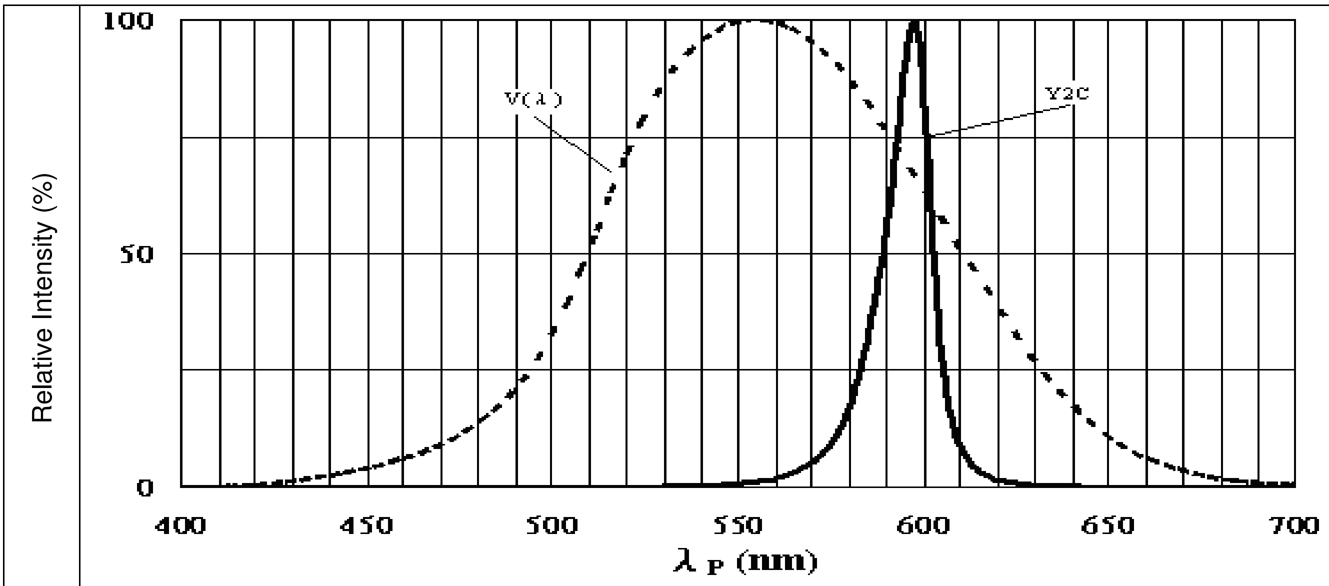
Bin Code	Min.	Max.	Unit	Condition
1	584	588	nm	I_F =20mA
2	588	592		
3	592	596		

Note:
Tolerance of Dominant Wavelength: ±1nm

C

Typical Electro-Optical Characteristics Curves

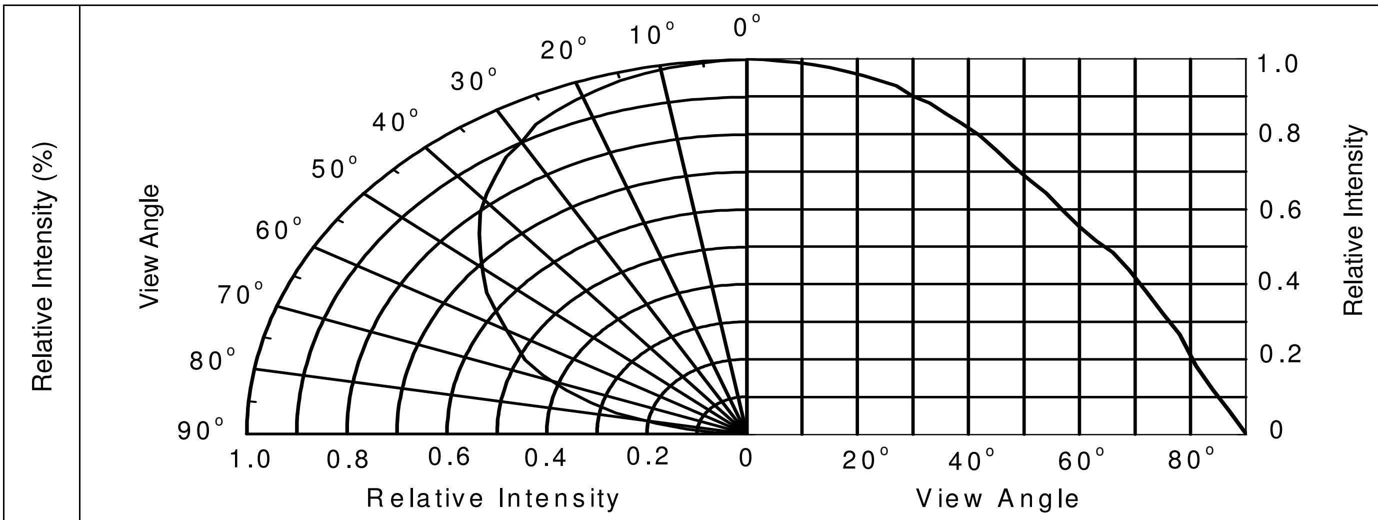
Typical Curve of Spectral Distribution



λp (nm)

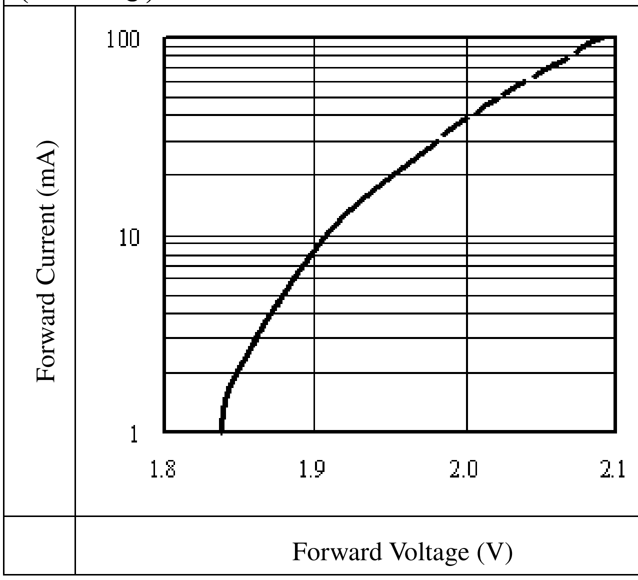
Note: V(λ)=Standard eye response curve; I_F =20mA

Diagram Characteristics of Radiation

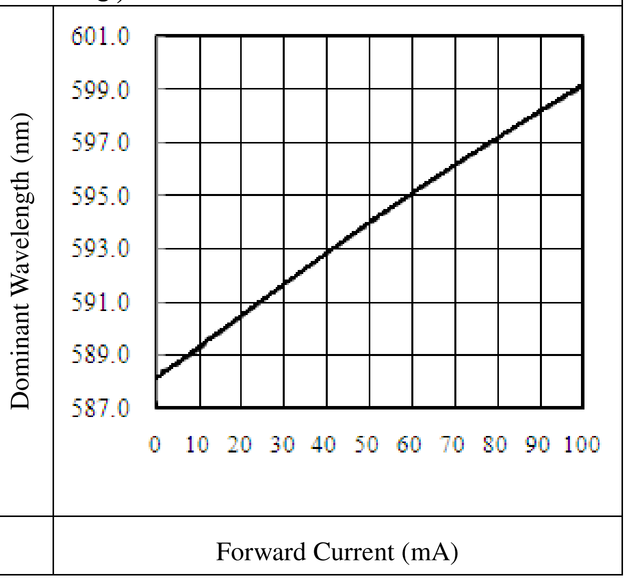


Relative Intensity

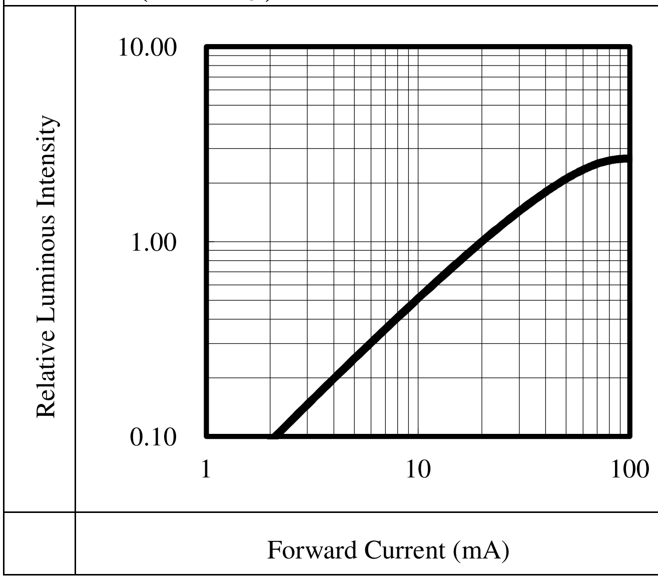
Forward Current vs. Forward Voltage (Ta=25℃)



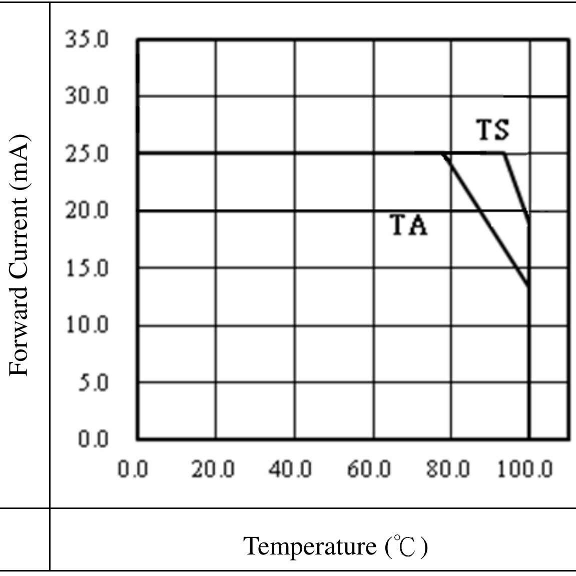
Dominant Wavelength vs. Forward Current (Ta=25℃)

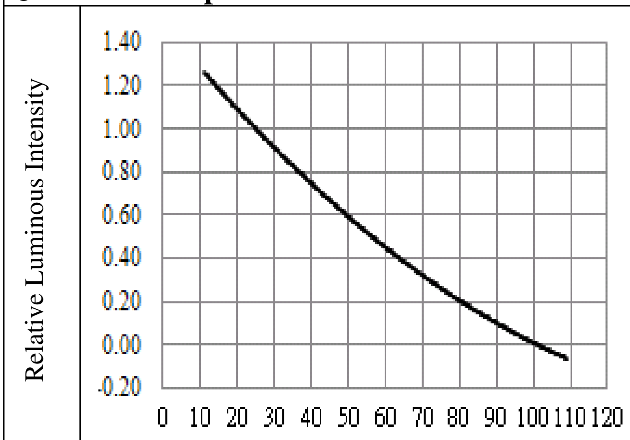
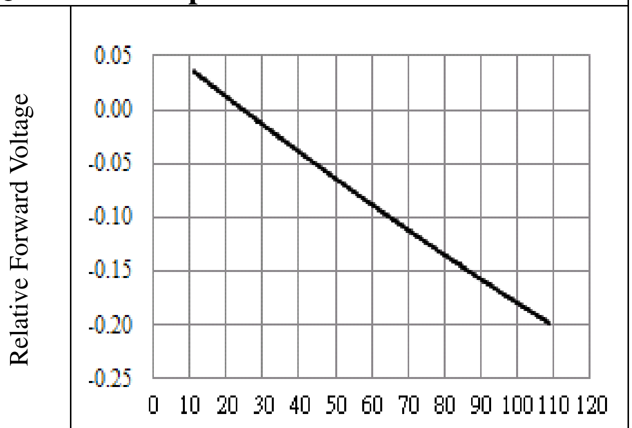


Relative Luminous Intensity vs. Forward Current (Ta=25℃)

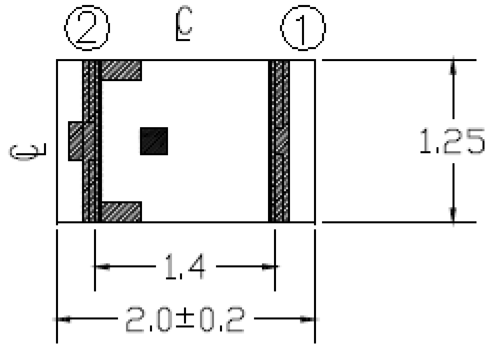


Max. Permissible Forward Current (Ta=25℃)

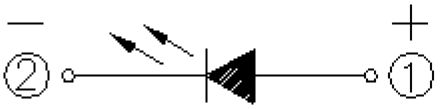


Relative Luminous Intensity vs. Junction Temperature	**Relative Forward Voltage vs. Junction Temperature**
	
Junction Temperature (℃)	Junction Temperature (℃)
Note: $f(Tj) = Iv / Iv(25℃)$; I_F =20mA	Note: $\Delta V_F = V_F - V_F(25\ ℃) = f(Tj)$; I_F =20mA

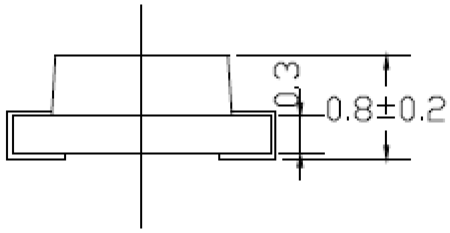
Package Dimension



Top

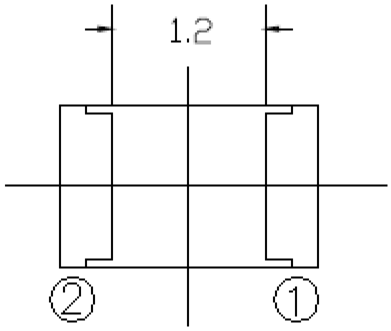


Polarity

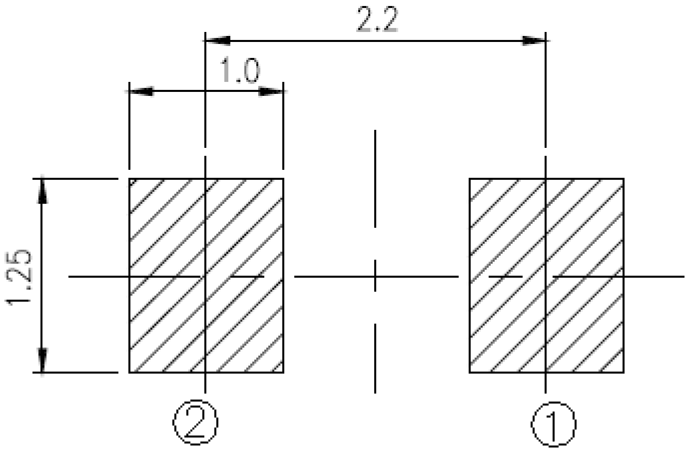


Side

For reflow soldering (propose)



Bottom

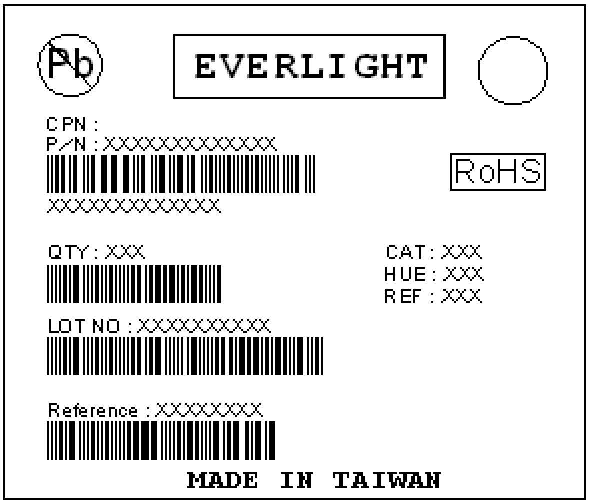


Suggested pad dimension is just for reference only.
Please modify the pad dimension based on individual need.

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

Moisture Resistant Packing Materials

Label Explanation



Pb

EVERLIGHT

CPN :
P/N : XXXXXXXXXXXXXX
XXXXXXXXXXXXX

RoHS

QTY : XXX
CAT : XXX
HUE : XXX
REF : XXX

LOT NO : XXXXXXXXXX

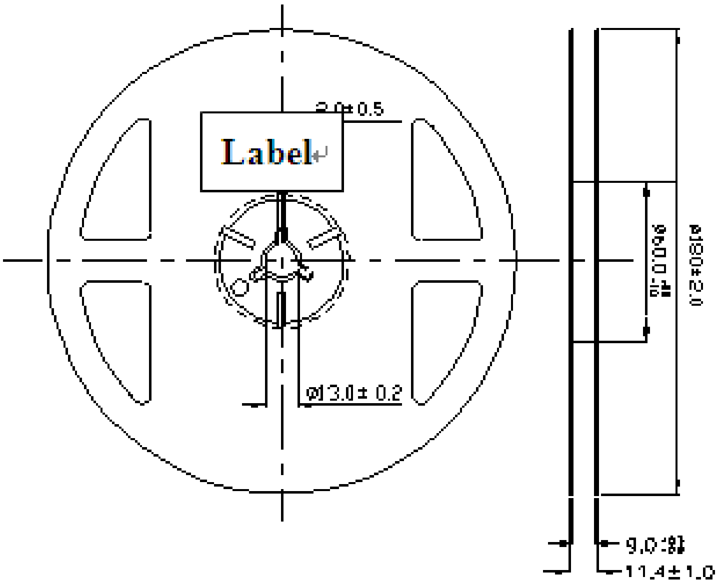
Reference : XXXXXXXX

MADE IN TAIWAN

Label Explanation

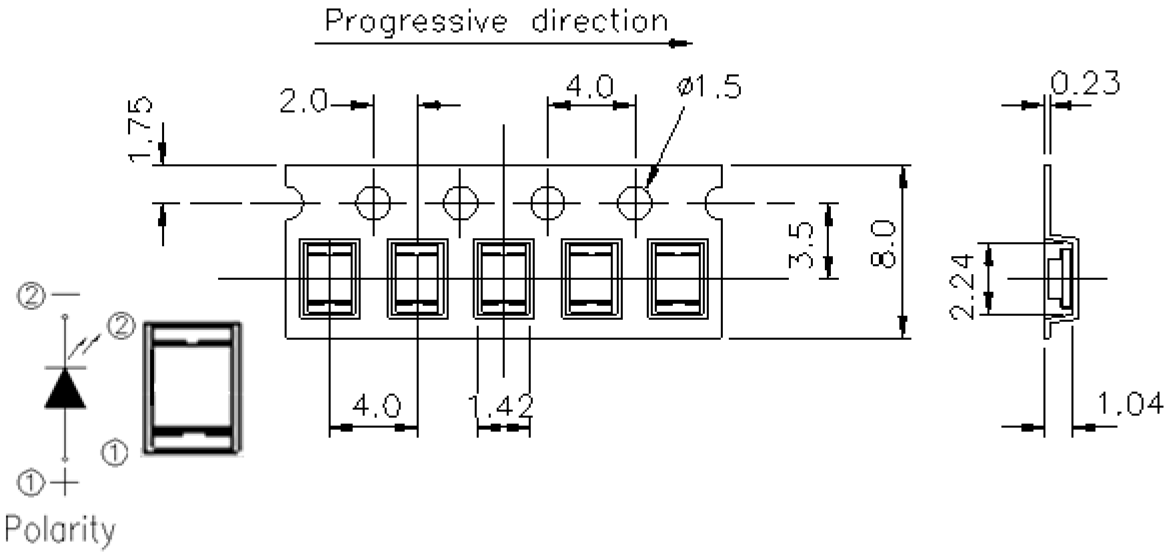
- **CPN: Customer's Product Number**
- **P/N: Product Number**
- **QTY: Packing Quantity**
- **CAT: Luminous Intensity Rank**
- **HUE: Dom. Wavelength Rank**
- **REF: Forward Voltage Rank**
- **LOT No: Lot Number**

Reel Dimensions



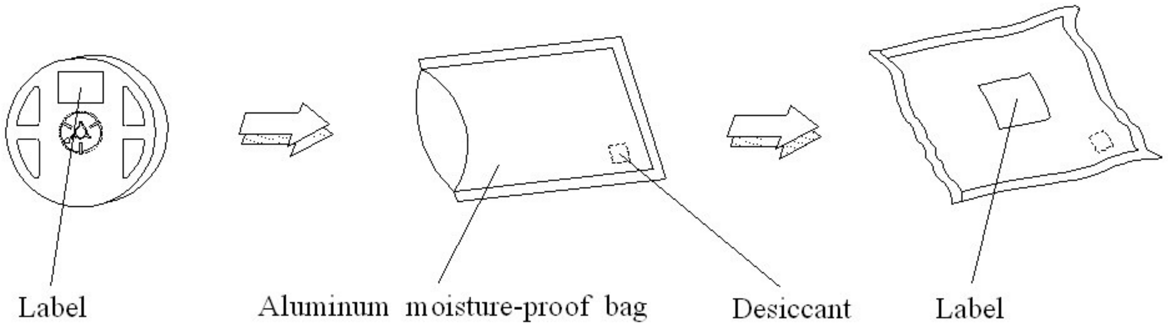
Note: The tolerances unless mentioned is ±0.1mm ,Unit = mm

Carrier Tape Dimensions: Loaded Quantity 3000 pcs Per Reel



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

Moisture Resistant Packing Process

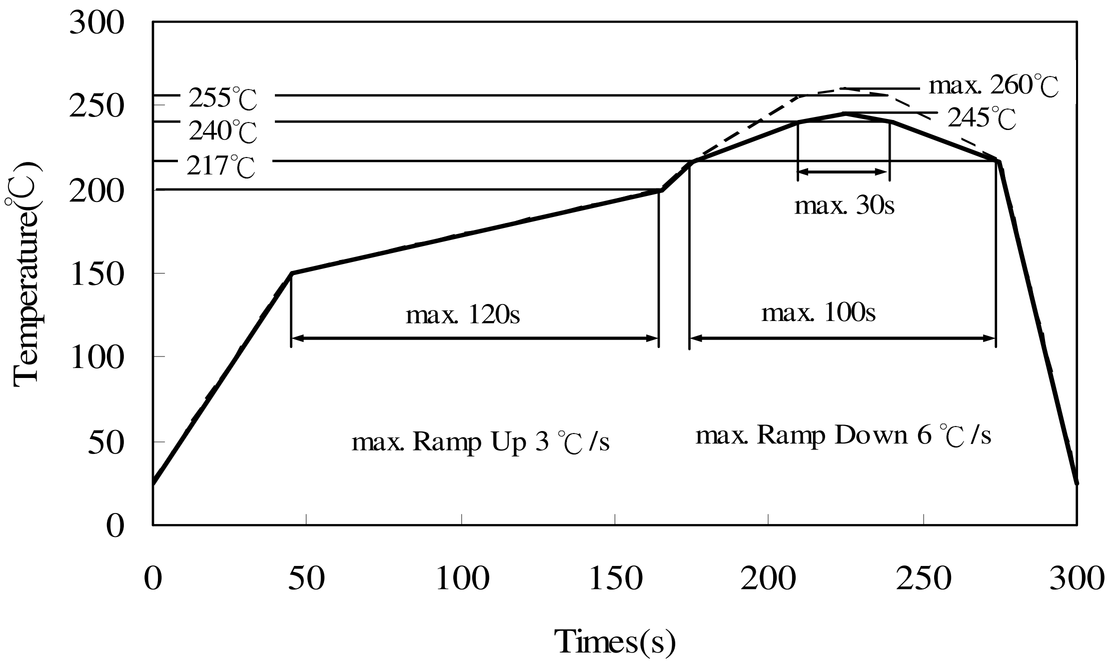


Note: Tolerances unless mentioned ±0.1mm. Unit = mm

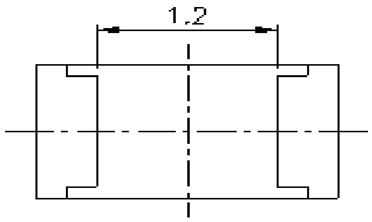
Precautions for Use

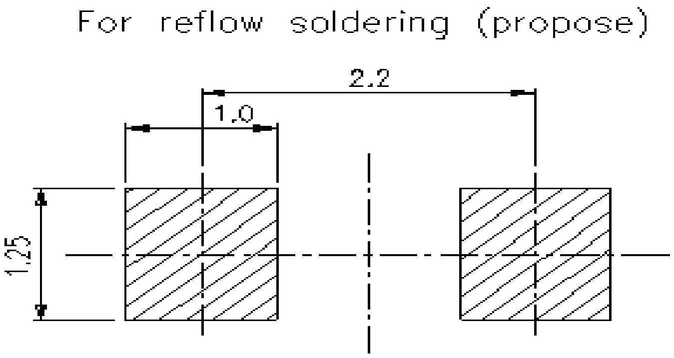
1. **Soldering Condition (Reference: IPC/JEDEC J-STD-020D)**

(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 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

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 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	2011/11/8	New Spec
2	2013/5/28	Change Release