Part Number: SML-LX2731SYC-ATR

Lead (Pb) Free Product - RoHS Compliant

Feature

- P-LCC-2 package.
- Colorless clear resin.
- Wide viewing angle 120°.
- Inner reflector and white package.
- Brightness: 180 to 355 mcd at 20mA.
- Precondition: Bases on JEDEC J-STD 020D Level 3.
- Qualification according to AEC-Q101 rev C.
- Automotive reflow profile (IR reflow or wave soldering)

Applications

- Automotive backlighting or indicator: Interior and exterior lighting, Dashboard, switch, reading lamp, 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 Material	Emitted Color	Resin Color
AlGaInP	Brilliant Yellow	Water Clear

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Part Number: SML-LX2731SYC-ATR

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}	100	mA
Power Dissipation	Pd	120	mW
Junction Temperature	T_j	125	℃
Operating Temperature	T_{opr}	-40 ~ +100	℃
Storage Temperature	T_{stg}	-40 ~ +110	℃
Thermal resistance	Rth $_{J-A}$	500	K/W
	Rth $_{J-S}$	300	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.	

Part Number: SML-LX2731SYC-ATR

Electro-Optical Characteristics (Ta=25℃)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Luminous Intensity	Iv	180	-----	355	mcd	I_F =20mA
Viewing Angle	$2\theta_{1/2}$	-----	120	-----	deg	I_F =20mA
Peak Wavelength	λp	-----	591	-----	nm	I_F =20mA
Dominant Wavelength	λd	583	------	589	nm	I_F =20mA
Spectrum Radiation Bandwidth	Δλ	-----	15	-----	nm	I_F =20mA
Forward Voltage	V_F	1.7	-----	2.4	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

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Bin Range of Luminous Intensity

Bin Code	Min.	Max.	Unit	Condition
S1	180	224	mcd	I_F =20mA
S2	224	280		
T1	280	355		

Notes：Tolerance of Luminous Intensity：±11%

Bin Range of Dominant Wavelength

Bin Code	Min.	Max.	Unit	Condition
1	583	586	nm	I_F =20mA
2	586	589		

Notes：Tolerance of Dominant Wavelength：±1nm

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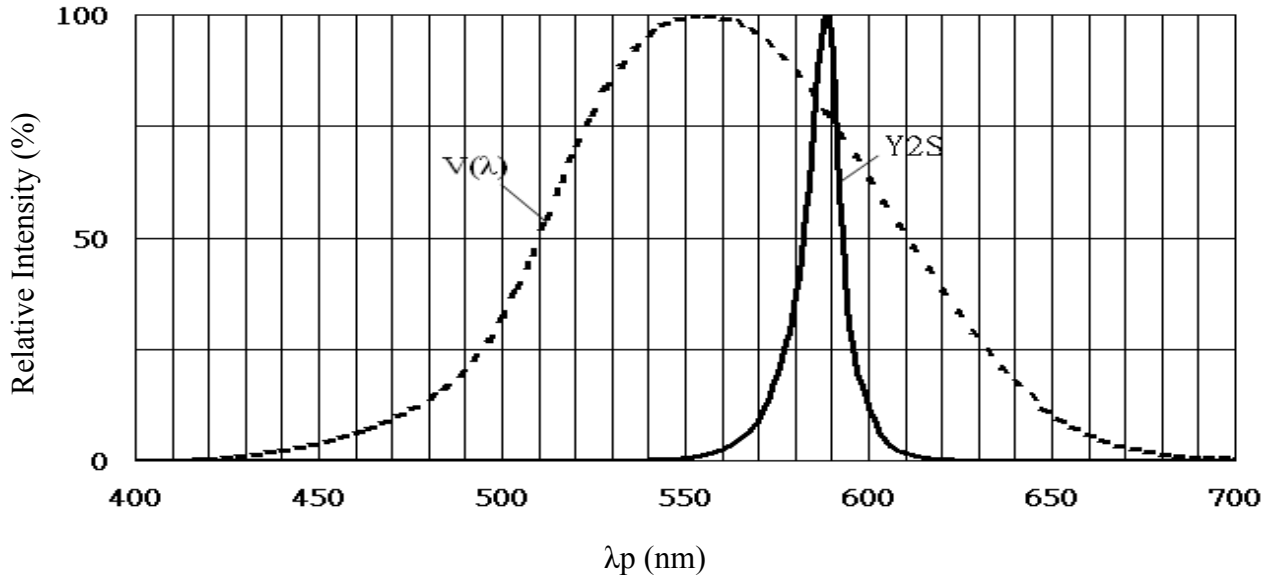
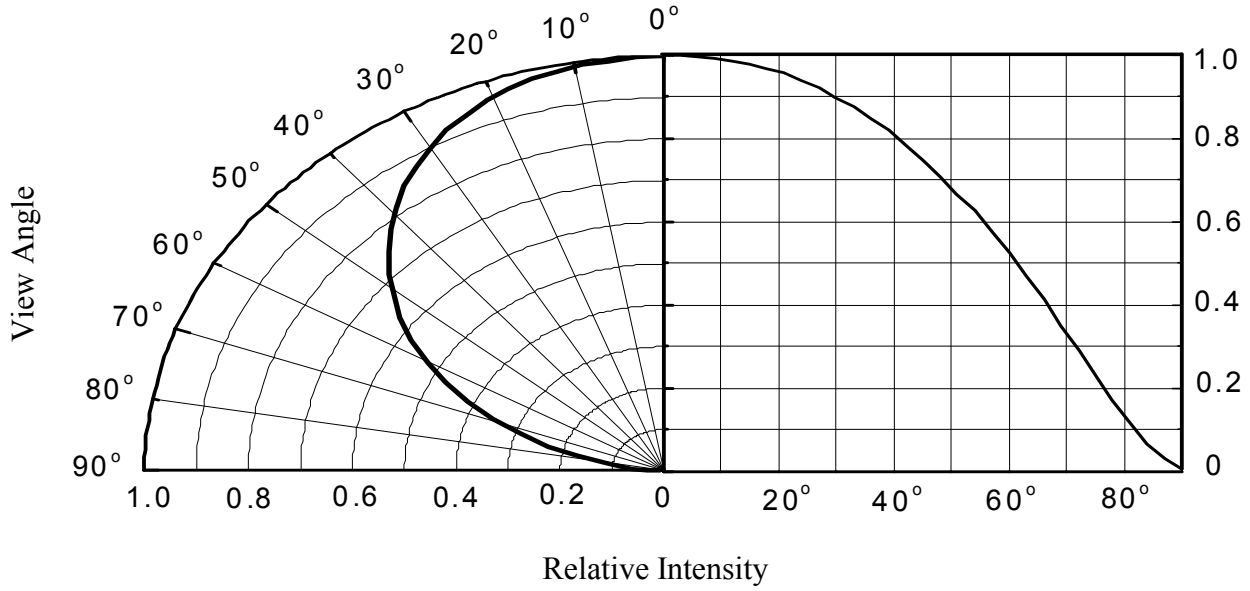
Typical Electro-Optical Characteristics Curves

Typical Curve of Spectral Distribution



Note: V(λ)=Standard eye response curve

Diagram Characteristics of Radiation



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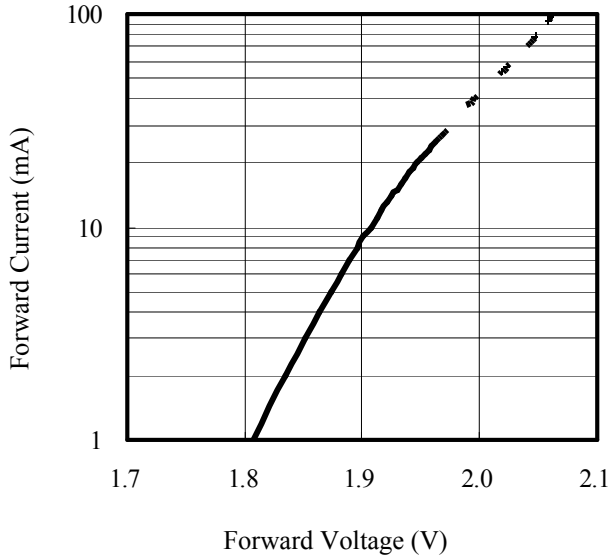
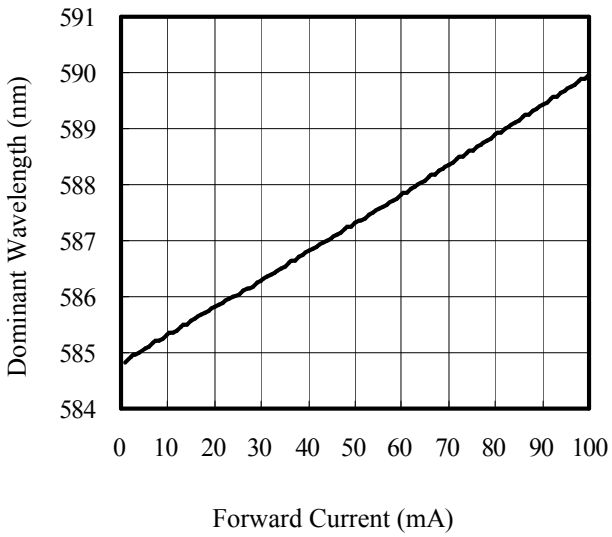
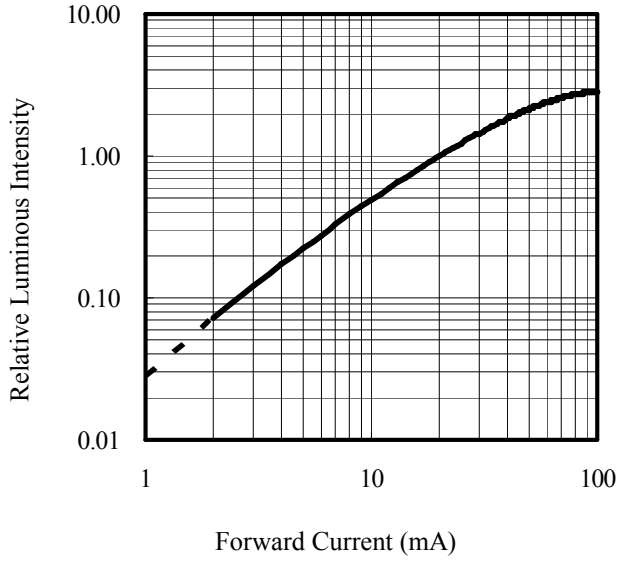
Forward Current vs. Forward Voltage (Ta=25℃)



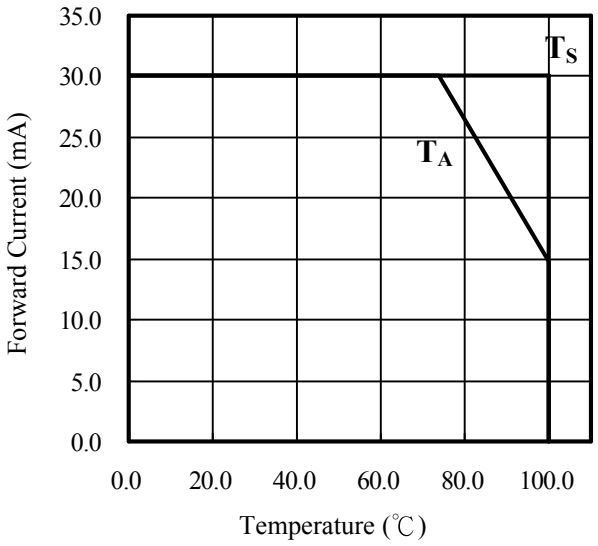
Dominant Wavelength vs. Forward Current (Ta=25℃)



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



Forward current vs. Ambient and Solder Temperature



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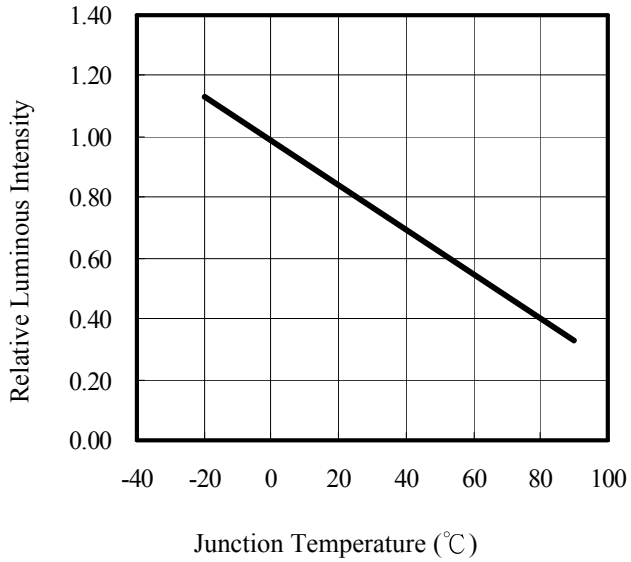
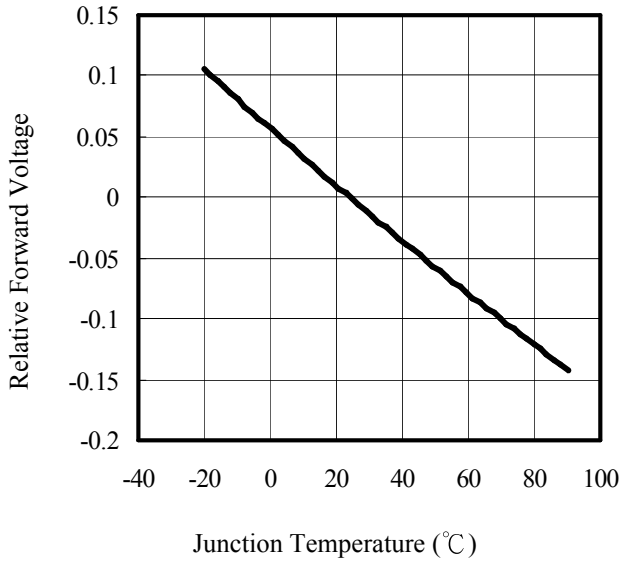
Relative Luminous Intensity vs. Junction Temperature



Note: f(Tj) = Iv / Iv(25℃); I_F =20mA

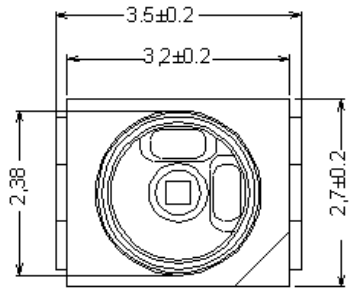
Relative Forward Voltage vs. Junction Temperature

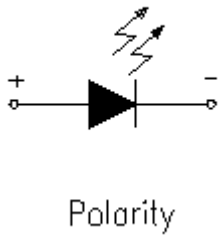


Note: $\triangle V_F = V_F - V_F(25\ ℃) = f(Tj)$; I_F =20mA

Part Number: SML-LX2731SYC-ATR

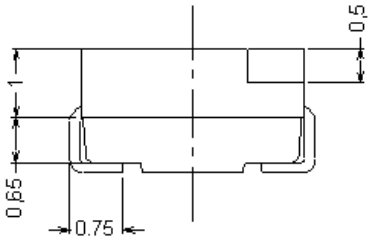
Package Dimension

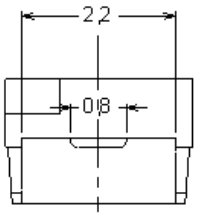




Polarity

Chip position

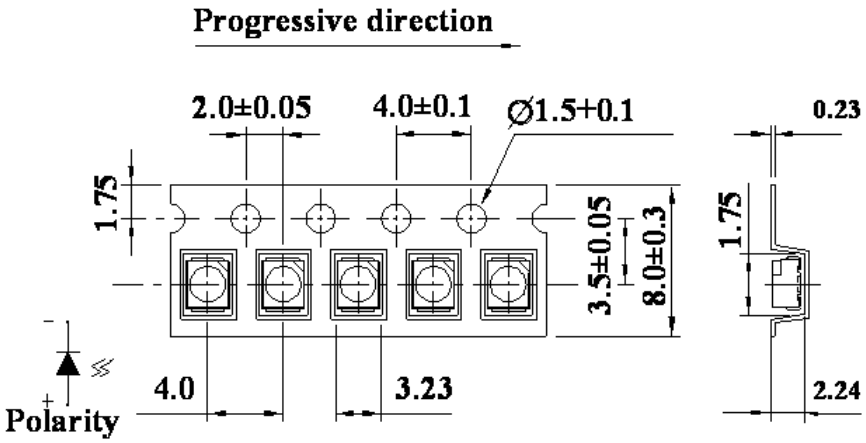




Note: Tolerances unless mentioned ±0.1mm. Unit = mm

Part Number: SML-LX2731SYC-ATR

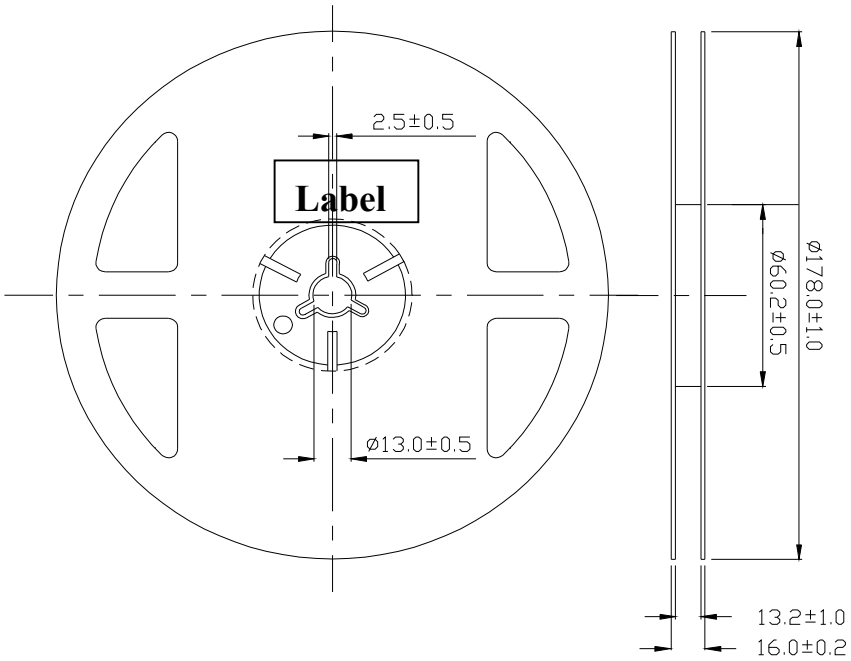
Carrier Tape Dimensions: Loaded Quantity 2000 pcs Per Reel



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

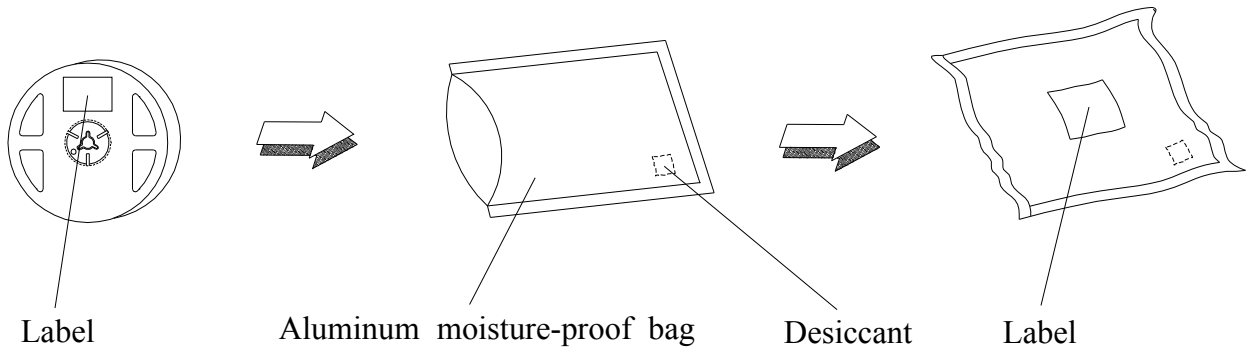
Part Number: SML-LX2731SYC-ATR

Reel Dimensions



Note: Unit = mm

Moisture Resistant Packing Process

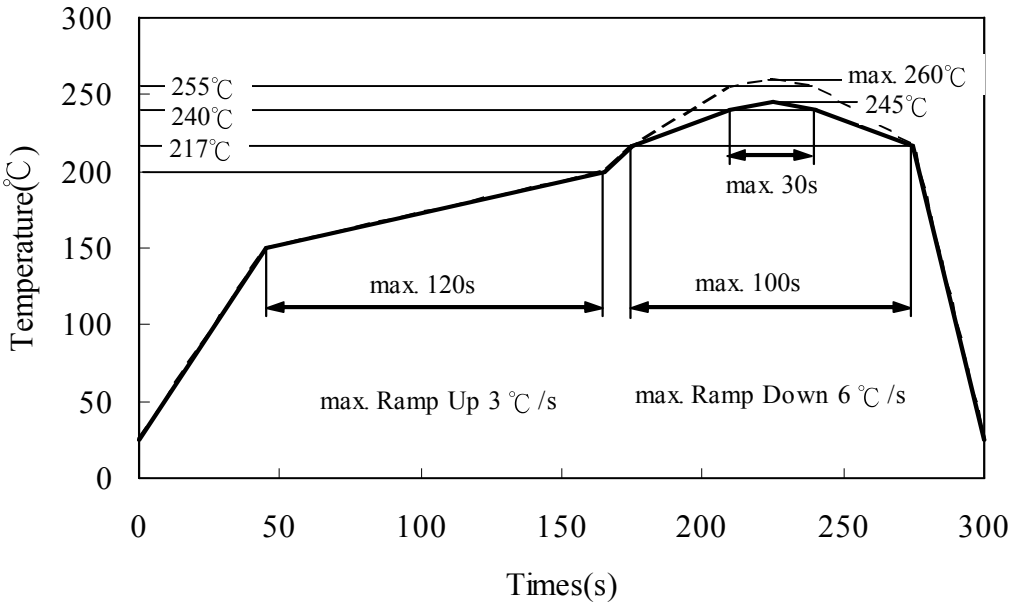


Part Number: SML-LX2731SYC-ATR

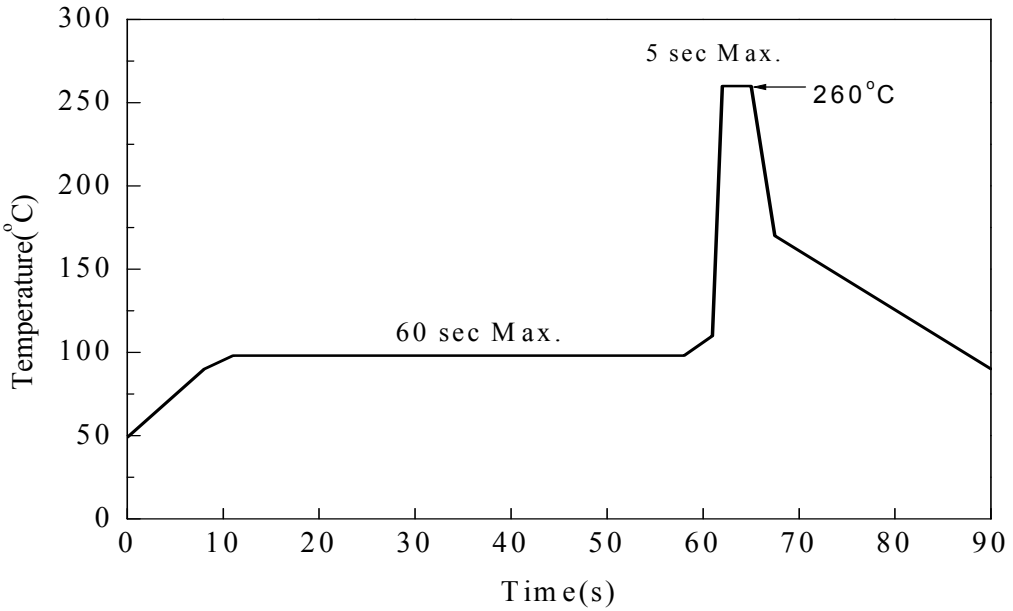
Precautions for Use

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

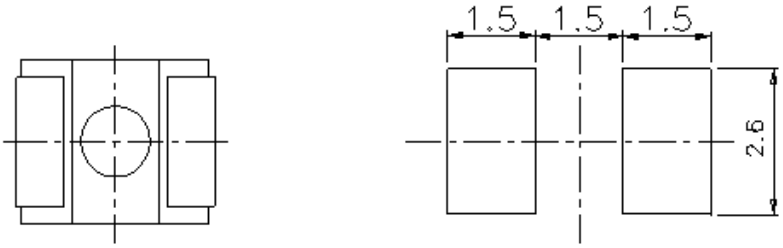
a. IR reflow



b. Wave soldering 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

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 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.