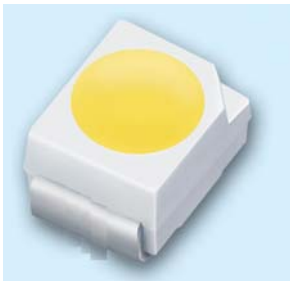
DATASHEET

SMD ▪ REFLECTOR
EAPL3527BA1-AM



Features

- P-LCC-2 package.
- Colored diffused resin.
- Wide viewing angle 120°.
- Inner reflector and white package.
- Brightness: 1400 to 2200 mcd at 20mA.
- Precondition: Bases on JEDEC J-STD 020D Level 2.
- 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 Materials	Emitted Color	Resin Color
InGaN	White	Yellowish

Absolute Maximum Ratings (Ta=25℃)

Parameter	Symbol	Rating	Unit
Reverse Voltage	V_R	5	V
Forward Current	I_F	30	mA
Peak Forward Current (Duty 1/10 @1KHz)	I_{FP}	100	mA
Power Dissipation	Pd	117	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.	Units	Condition
Luminous Intensity	I_V	1400	------	2200	mcd	I_F=20mA
Viewing Angle	$2\theta_{1/2}$	--	120	--	deg	I_F=20mA
Forward Voltage	V_F	2.70	-----	3.90	V	I_F=20mA
Reverse Current	I_R	--	--	50	μA	V_R=5V

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
1	1400	1600	mcd	I_F=20mA
2	1600	1800		
3	1800	2000		
4	2000	2200		

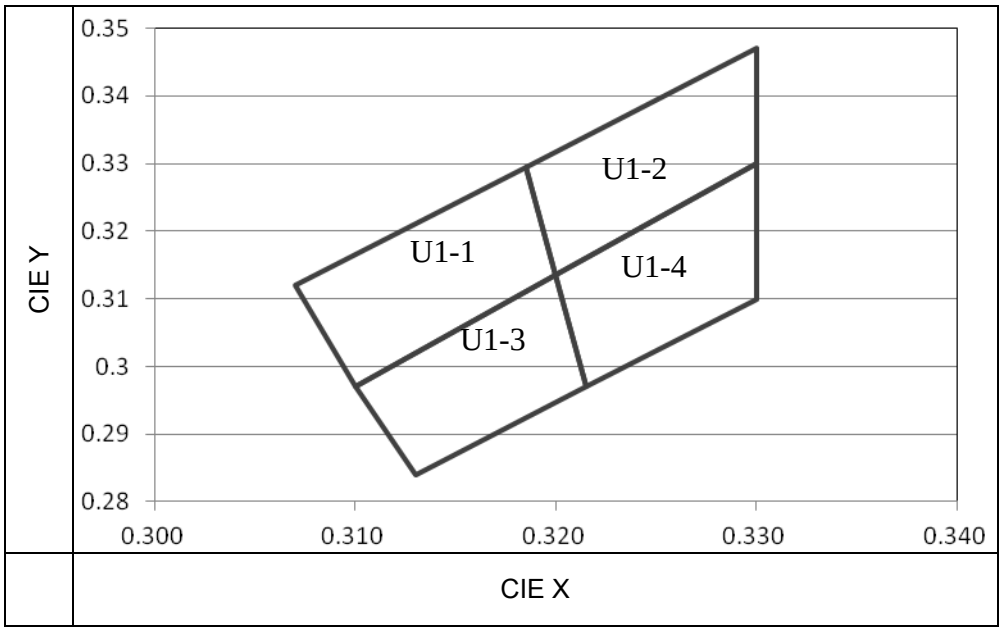
Note:
Tolerance of Luminous Intensity: ±11%

Bin Range of Chromaticity Coordinates

Group	Bin Code	CIE_x	CIE_y	Bin Code	CIE_x	CIE_y
U1	U1-1	0.3070	0.3120	U1-3	0.3100	0.2970
		0.3185	0.3295		0.3200	0.3135
		0.3200	0.3135		0.3215	0.2970
		0.3100	0.2970		0.3130	0.2840
	U1-2	0.3185	0.3295	U1-4	0.3200	0.3135
		0.3300	0.3470		0.3300	0.3300
		0.3300	0.3300		0.3300	0.3100
		0.3200	0.3135		0.3215	0.2970

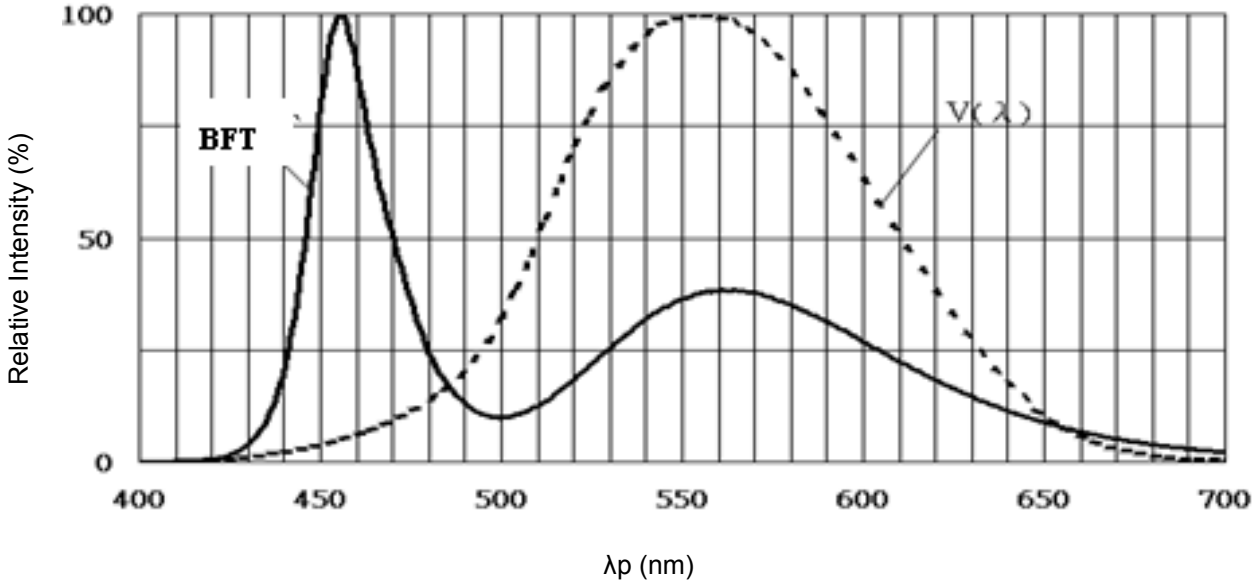
Note:
Tolerance of Chromaticity Coordinates: ±0.01

The C.I.E. 1931 chromaticity diagram.



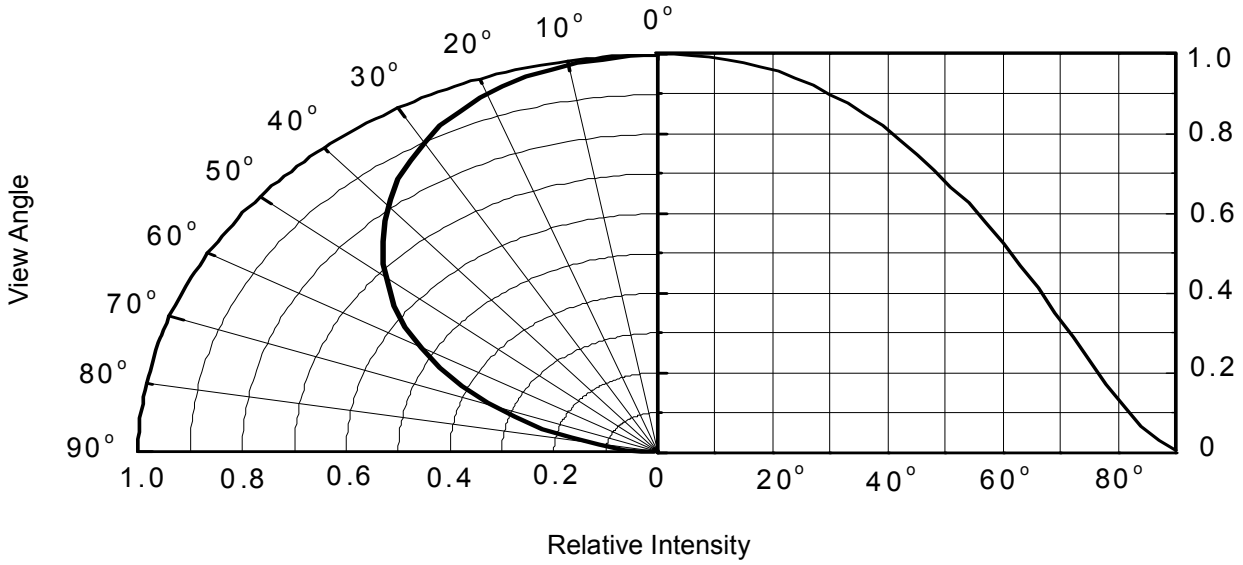
Typical Electro-Optical Characteristics Curves

Typical Curve of Spectral Distribution

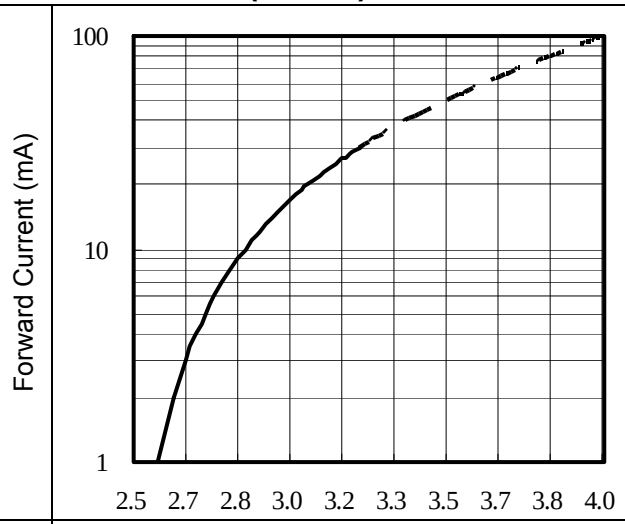


Note: V(λ)=Standard eye response curve

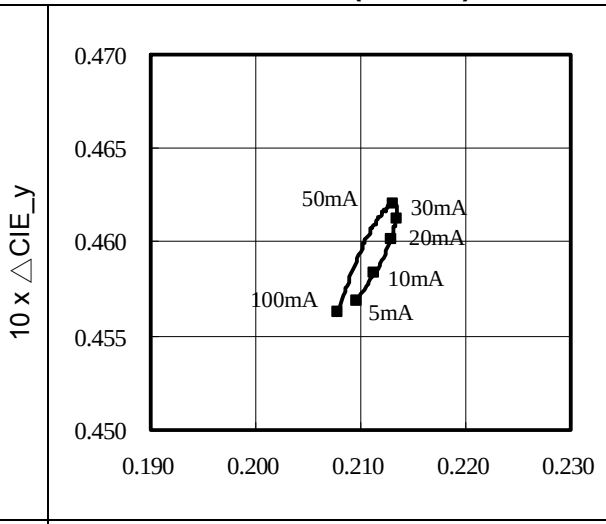
Diagram Characteristics of Radiation



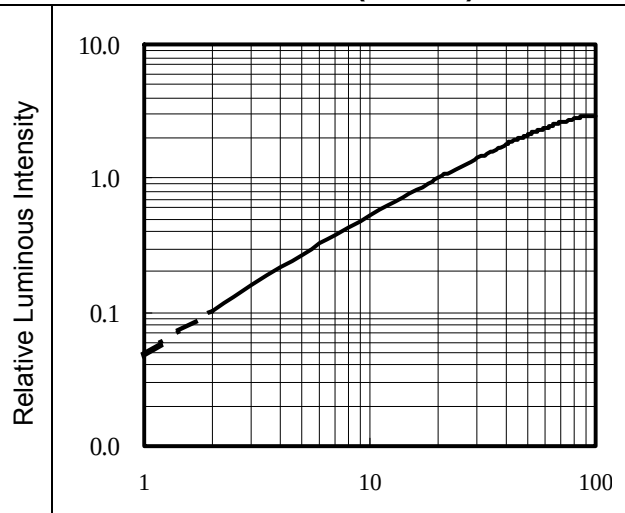
Forward Current vs. Forward Voltage (Ta=25℃)



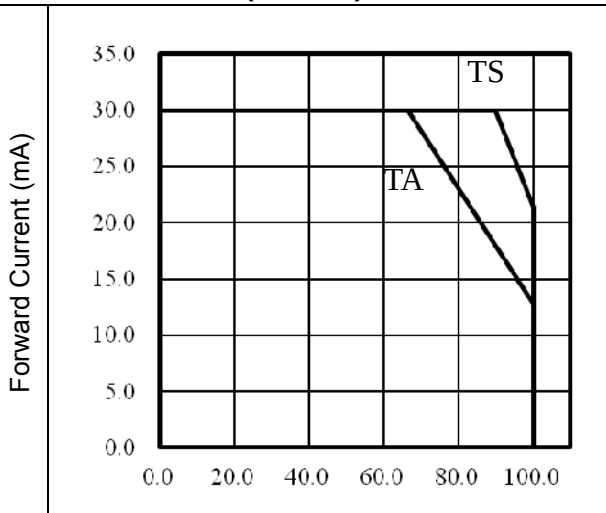
Chromaticity Coordinates vs. Forward Current (Ta=25℃)



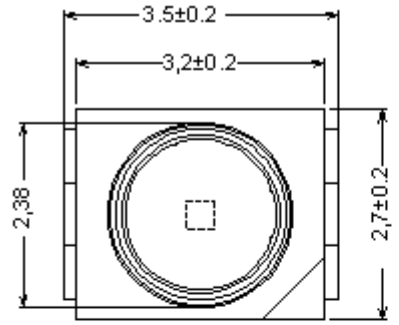
Relative Luminous Intensity vs. Forward Current (Ta=25℃)



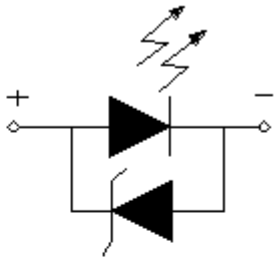
Max. Permissible Forwarded Current (Ta=25℃)



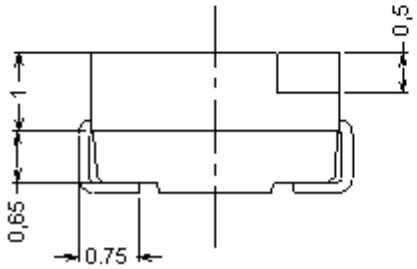
Package Dimension

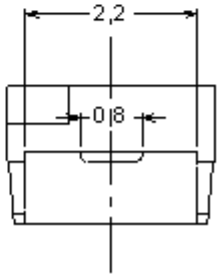


Chip position



Polarity

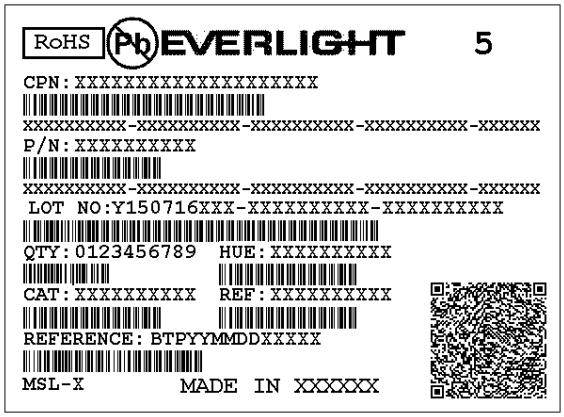




Note: Tolerances unless mentioned ±0.1mm. Unit = mm

Moisture Resistant Packing Materials

Label Explanation

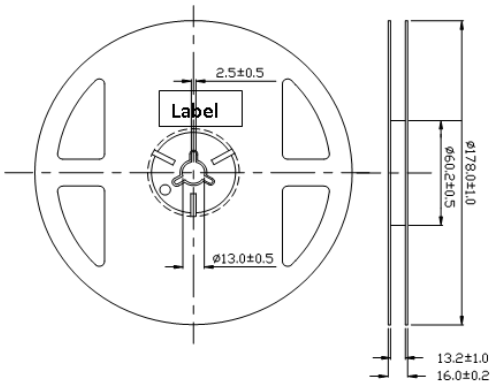


CAT: Luminous Intensity Rank

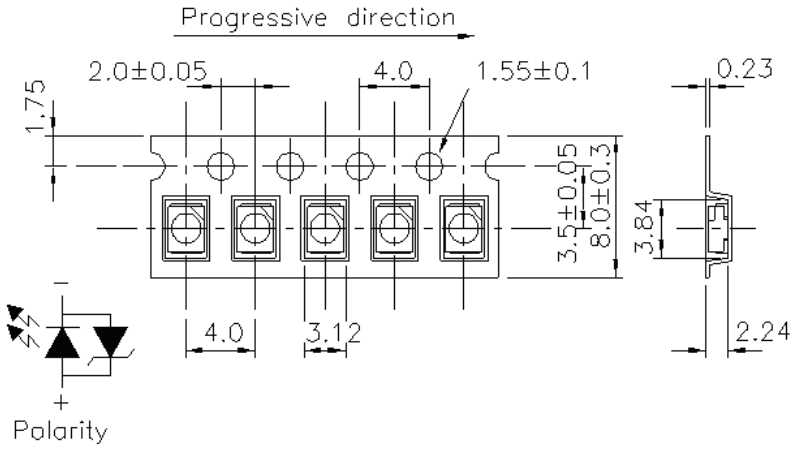
HUE: Dom. Wavelength Rank

REF: Forward Voltage Rank

Reel Dimensions

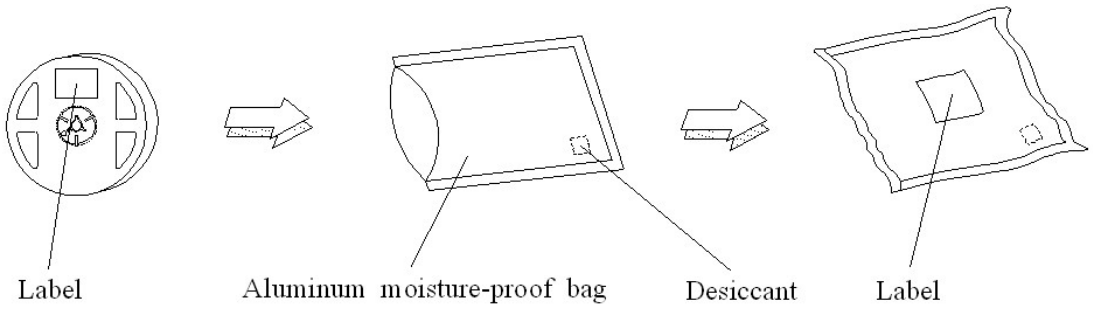


Carrier Tape Dimensions: Loaded Quantity 2000 pcs Per Reel



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

Moisture Resistant Packing Process

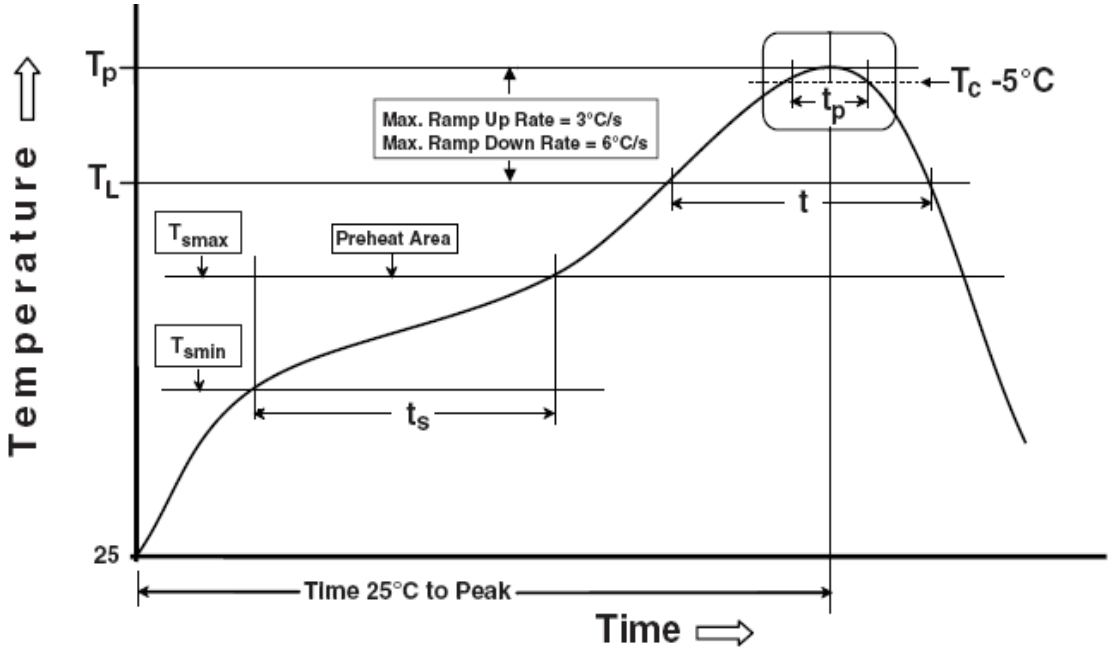


Note: Tolerances unless mentioned ±0.1mm. Unit = mm

Precautions for Use

1. Soldering Condition

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



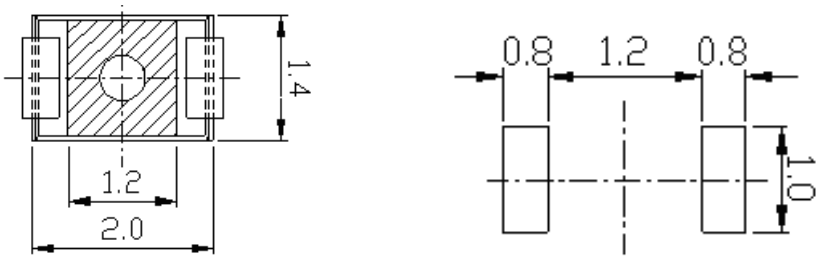
Note: Reference: IPC/JEDEC J-STD-020D

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	2015/09/17	New Spec
2	2015/09/30	Approved