DATASHEET

Top View LEDs
BLA-4014PZ1EHSC-82B3E3238D2630(SB)

Features

Lead (Pb) Free Product - RoHS Compliant

- RoHS compliant.
- PLCC-2 package.
- Wide viewing angle 120º.
- Inner reflector and white package.
- Qualification according to AEC-Q102.
- Precondition: Bases on JEDEC J-STD 020D Level 2.
- Automotive reflow profile (Reflow or wave soldering)
- The product itself will remain within RoHS compliant version.
- 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
InGaN	White	Yellowish

Absolute Maximum Ratings (Ta=25℃)

Parameter	Symbol	Rating	Unit
Forward Current	I_F	180	mA
Peak Forward Current (Duty 1/10 @100Hz)	I_{FP}	270	mA
Power Dissipation	Pd	558	mW
Junction Temperature	T_j	120	℃
Operating Temperature	T_{opr}	-40 ~ +100	℃
Storage Temperature	Tstg	-40 ~ +110	℃
Thermal Resistance	Rth $_{J-S}$	18	K/W
Electrostatic Discharge(HBM)	ESD	5000`	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	32		40	lm	I_F= 120mA
Viewing Angle	$2\theta_{1/2}$	---	120	---	deg	
Forward Voltage	V_F	2.6		3.1	V	

Note:
1. Tolerance of Luminous Intensity: ±5%
2. Tolerance of Chromaticity Coordinates is ±0.005
3. Tolerance of Forward Voltage: ±0.05V

Bin Range of Luminous Intensity

Bin Code	Min.	Max.	Unit	Condition
E32	32	34	lm	I_F = 120mA
E34	34	36		
E36	36	38		
E38	38	40		

Note:
Tolerance of Luminous Intensity: ±5%

Bin Range of Forward Voltage

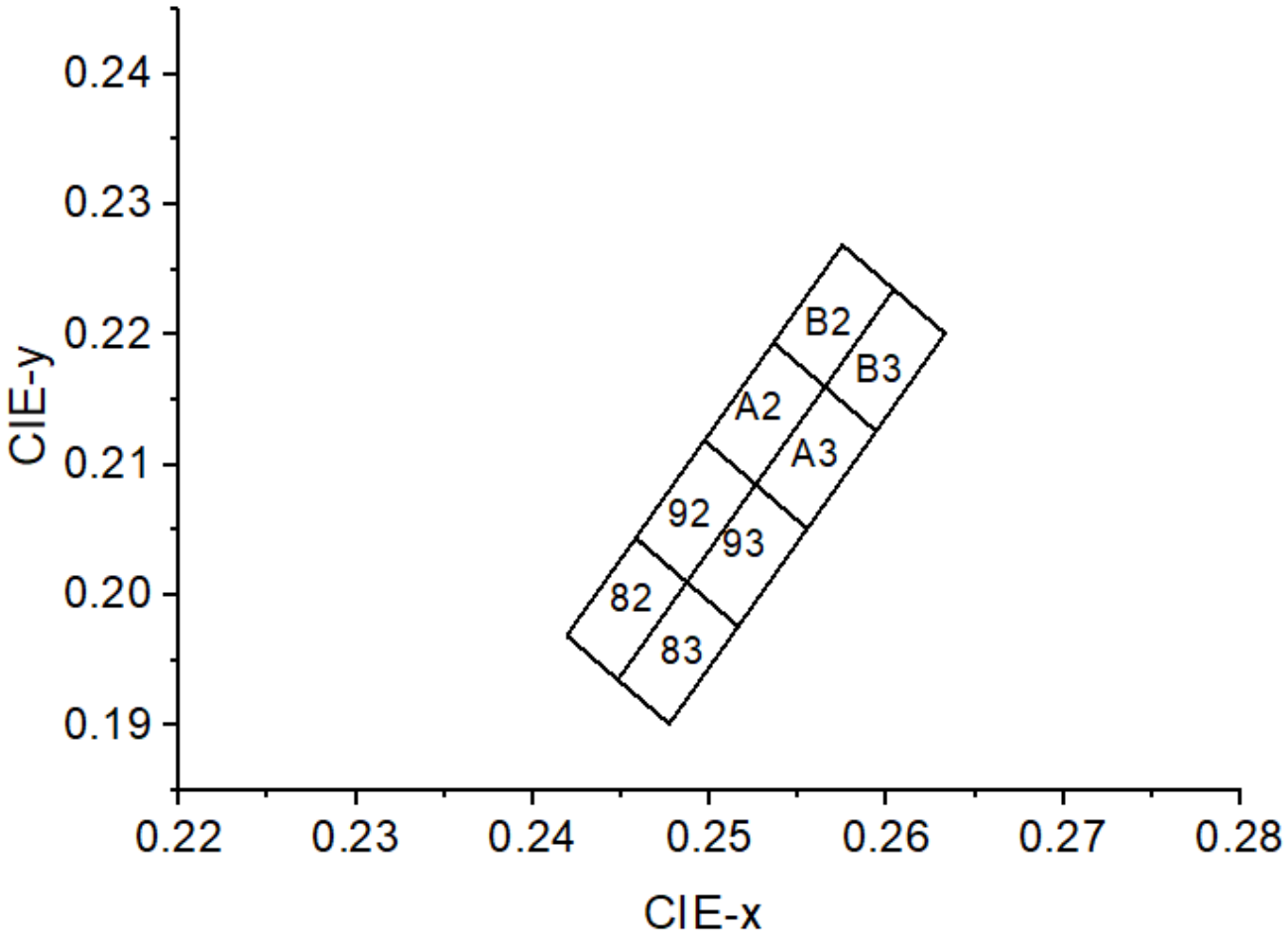
Bin Code	Min.	Max.	Unit	Condition
D26	2.6	2.7	V	I_F = 120mA
D27	2.7	2.8		
D28	2.8	2.9		
D29	2.9	3.0		
D30	3.0	3.1		

Note： Tolerance of Forward Voltage: ±0.05V

Bin Range of Chromaticity Coordinates

Bin Code	CIE_x	CIE_y	Bin Code	CIE_x	CIE_y
82	0.2458	0.2044	83	0.2477	0.1901
	0.2419	0.1969		0.2448	0.1935
	0.2448	0.1935		0.2487	0.2010
	0.2487	0.2010		0.2516	0.1976
92	0.2497	0.2119	93	0.2516	0.1976
	0.2458	0.2044		0.2487	0.2010
	0.2487	0.2010		0.2526	0.2085
	0.2526	0.2085		0.2555	0.2051
A2	0.2536	0.2194	A3	0.2555	0.2051
	0.2497	0.2119		0.2526	0.2085
	0.2526	0.2085		0.2565	0.2160
	0.2565	0.2160		0.2594	0.2126
B2	0.2575	0.2269	B3	0.2594	0.2126
	0.2536	0.2194		0.2565	0.2160
	0.2565	0.2160		0.2604	0.2235
	0.2604	0.2235		0.2633	0.2201

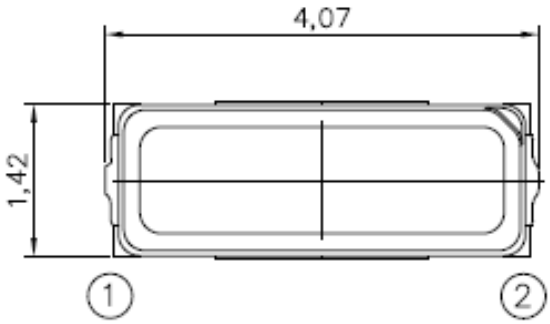
The C.I.E. 1931 Chromaticity Diagram

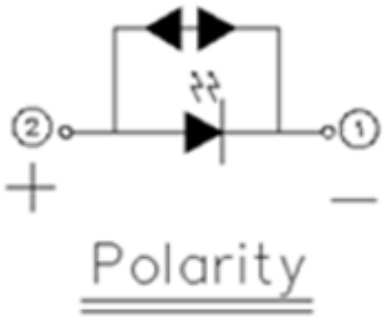


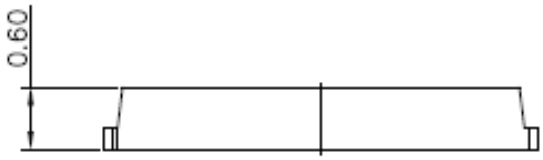
Note:

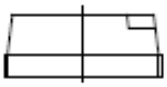
1. The value is based on driving current by 120mA.
2. Tolerance of Chromaticity Coordinates: ±0.005.

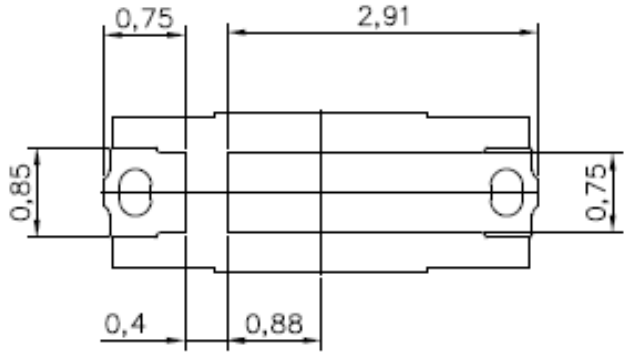
Package Dimension



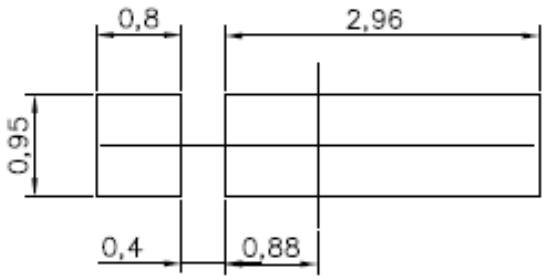








Bot. view



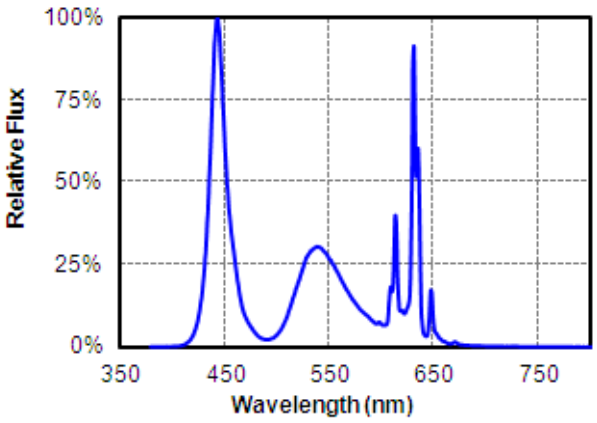
Soldering patterns

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

Typical Electro-Optical-Thermal Characteristics Curves

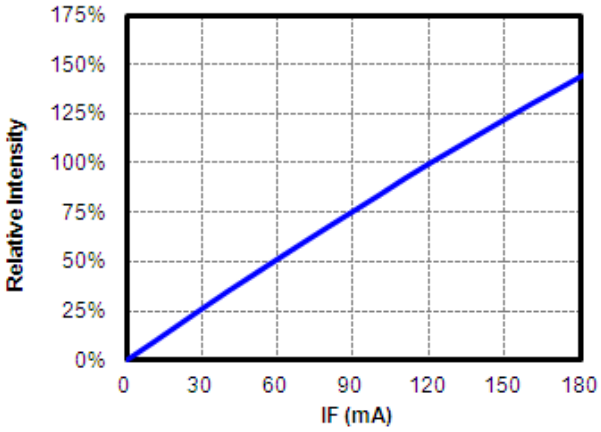
1. Spectrum Distribution

(Ta=25℃, I_F=120mA)



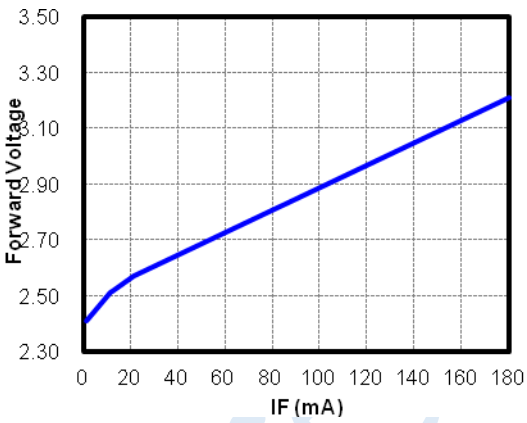
2. Relative Luminous Flux vs. Forward Current

(Ta=25℃)



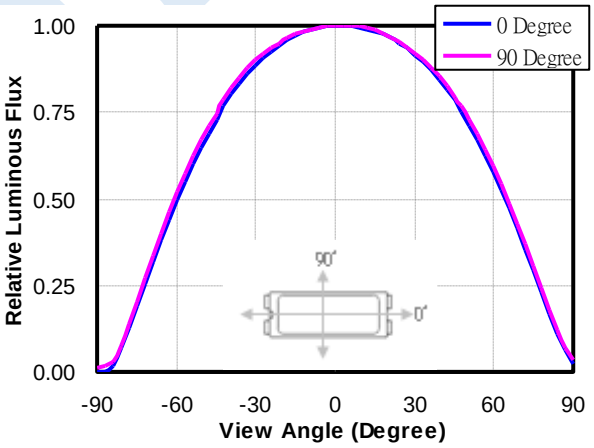
3. Relative Forward Voltage vs. Forward Current

(Ta=25℃)



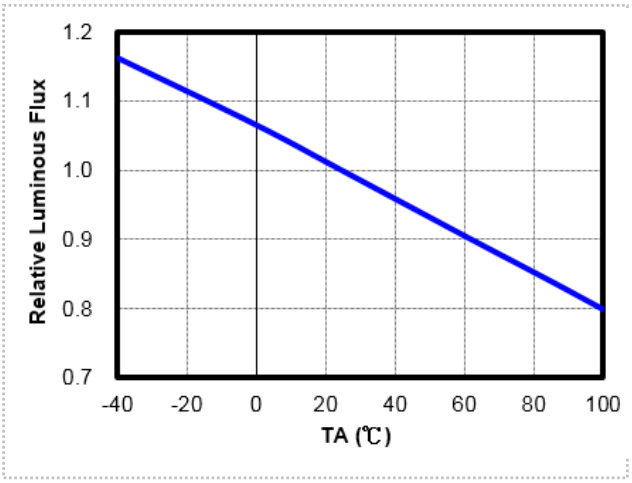
4. Radiation Diagram

(Ta=25℃, I_F=120mA)

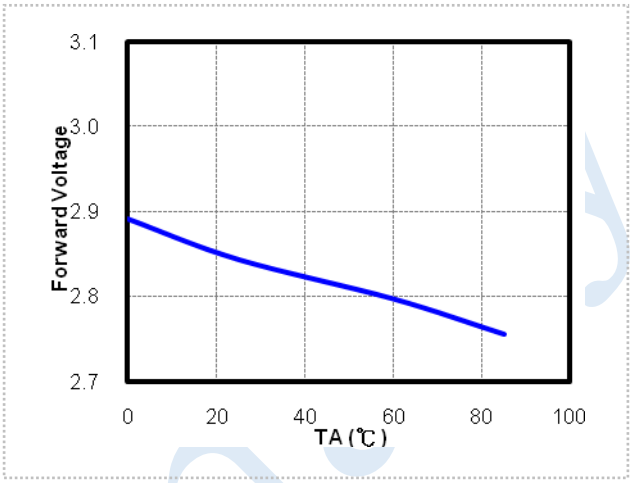


Typical Electro-Optical-Thermal Characteristics Curves

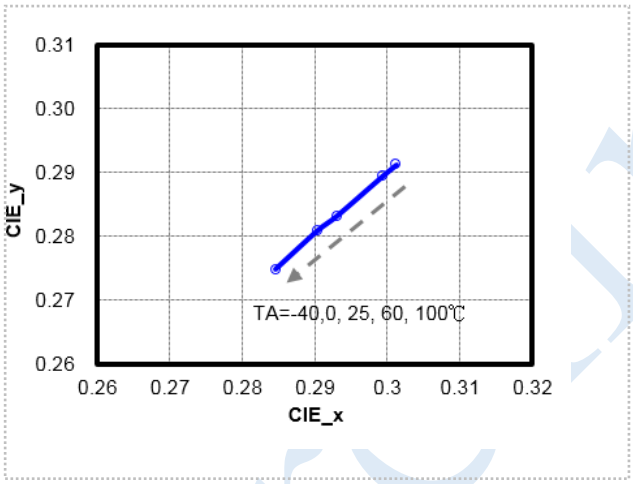
5. Relative Luminous Flux vs. Ambient Temperature (I_F=120mA)



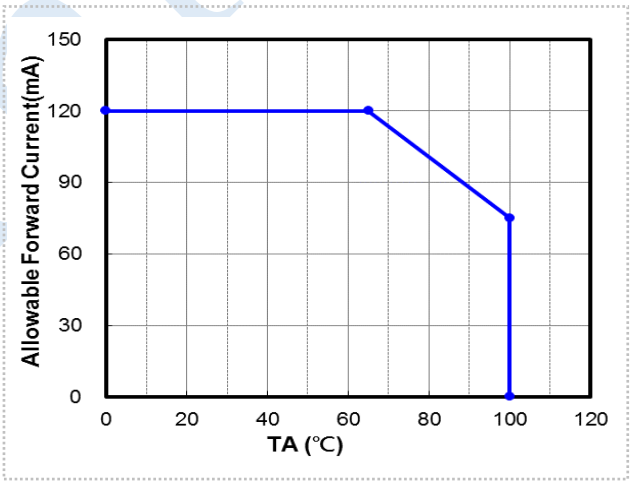
6. Forward Voltage vs. Ambient Temperature (I_F=120mA)



7. Chromaticity Coordinates vs. Ambient Temperature (I_F=120mA)



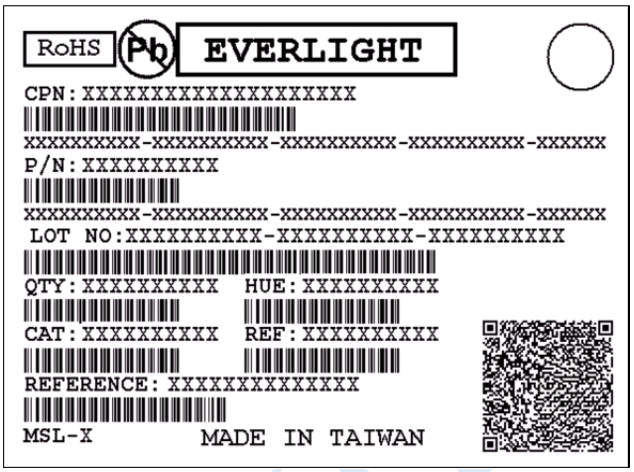
8. Forward Current De-rating Curve



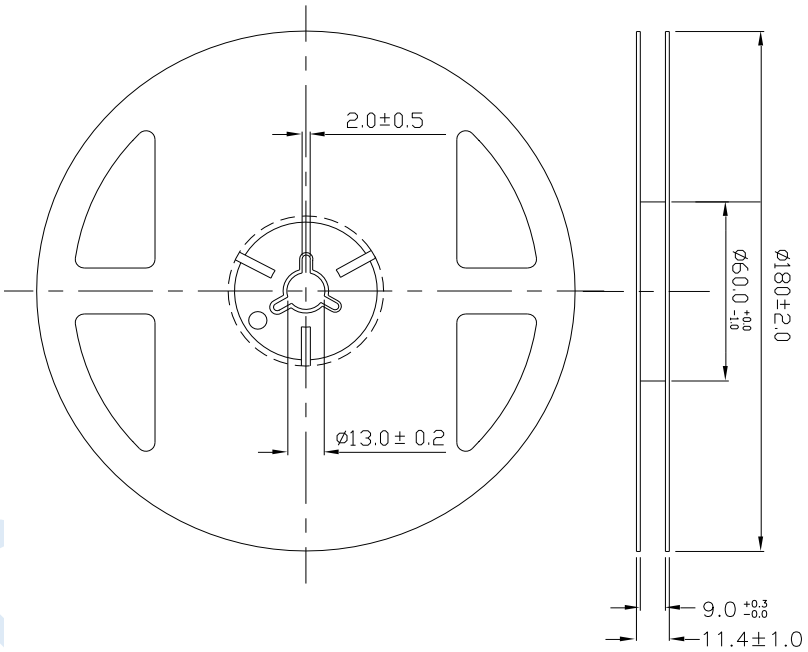
Moisture Resistant Packing Materials

Label Explanation

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

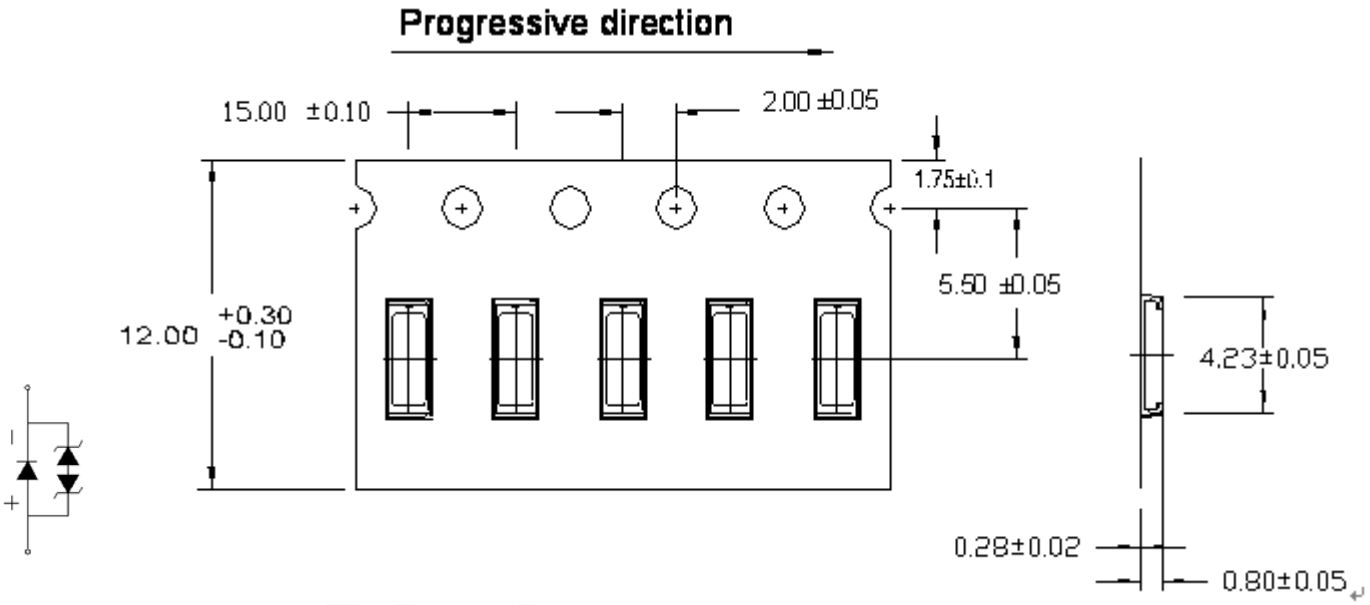


Reel Dimensions



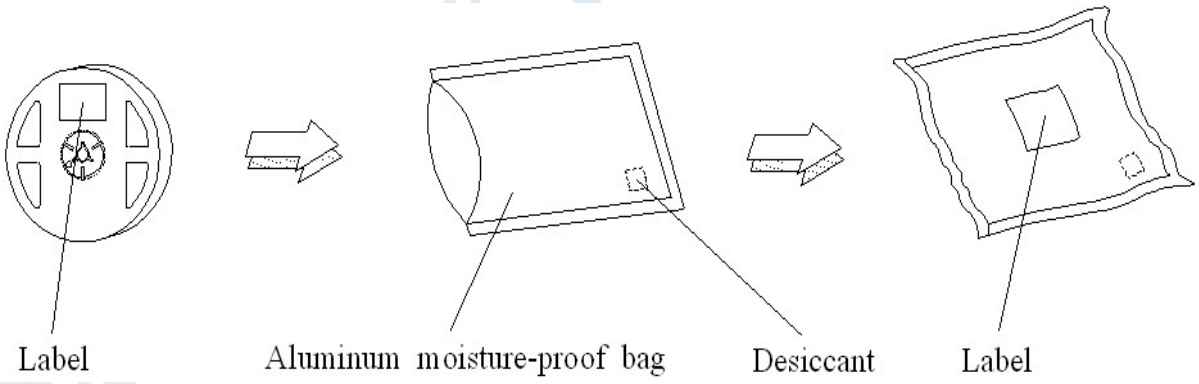
Note: Tolerances unless mentioned ±0.1mm. Unit = mm

Carrier Tape Dimensions: Loaded Quantity 500/1000/1500/2000 pcs Per Reel



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

Moisture Resistant Packing Process



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

Reliability Test Items and Conditions

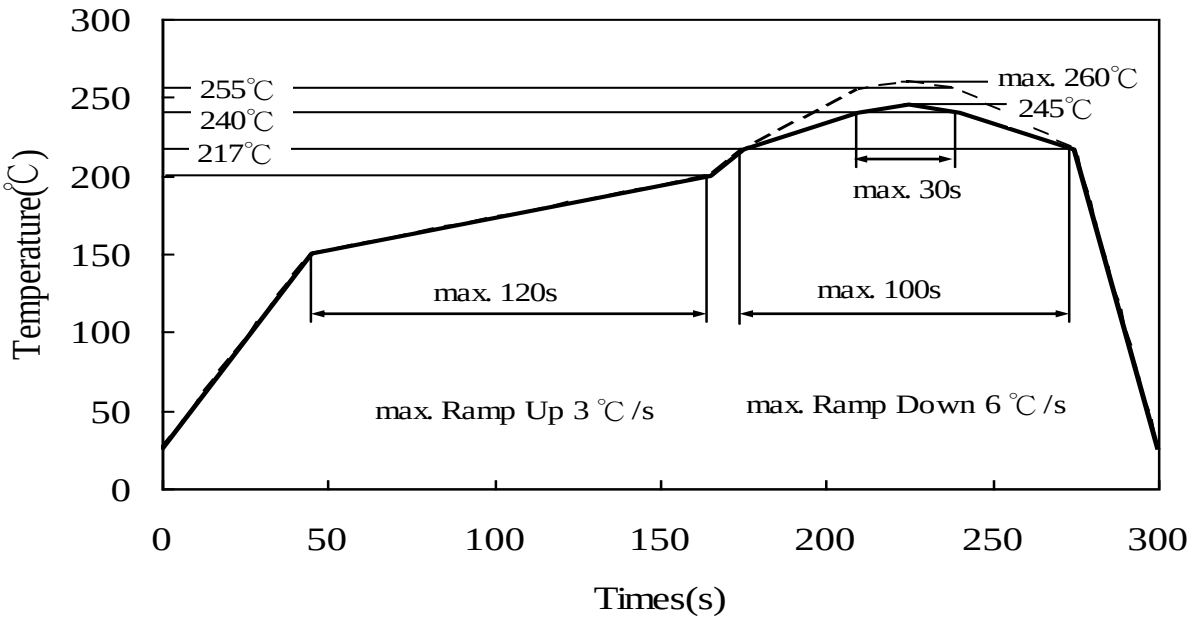
The reliability of products shall be satisfied with items listed below.
Confidence level：90%
LTPD：10%

No.	Items	Test Condition		Test Hours/Cycles	Criteria (at std. IF)
		Temp./ Humidity	IF (mA)		
1	Reflow Soldering	Temp. : 260℃±5℃/30sec.	N/A	3 times	△Iv < ±10% △VF < ±10%
2	Temperature Cycle	-40℃ ~ 85℃ 15min. (15min.) 15min.	N/A	1000 cycles	Iv > 70%, VF ± 10%,
3	Steady State Operating Life of High Temperature	TA=85℃	75	1000 hrs	
4	Steady State Operating Life of High Humidity Heat	TA=85℃/ 85%RH ON 30min / OFF 30min	120	1000 hrs	
5	Pulse Temperature Cycle (PTC)	-40℃ ~ 85℃ 10min. (20min.) 10min. 5min ON/OFF	120	1000 cycles	

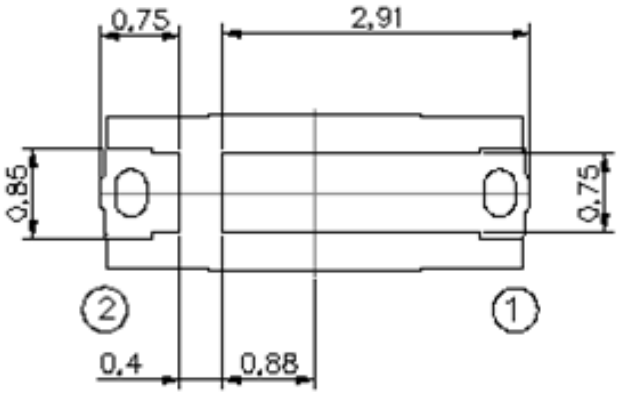
Precautions for Use

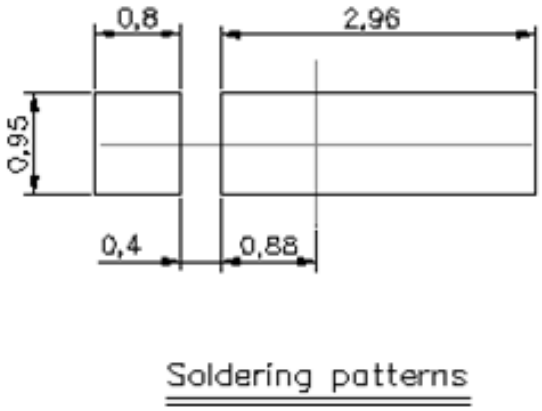
1. Soldering Condition (Reference: IPC/JEDEC J-STD-020D)

(A) 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 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.

