EVERLIGHT AMERICAS

DATASHEET

Top View ▪ LED
EAPL2214BA0

Features

- White SMT package.
- Optical indicator.
- Wide viewing angle.
- Soldering methods: IR reflow soldering
- Available on tape and reel
- Pb-free.
- ESD protection.
- The product itself will remain within RoHS compliant version.

Descriptions

The EAPL2214BA0 series is available in soft orange, green, blue, and yellow. Due to the package design, the LED has wide viewing angle and optimized light coupling by inter reflector. Besides, LED is mounted top down and emits through the PCB. This feature makes the LED ideal for light pipe application.

Applications

- Optical indicators.
- Coupling into light guides.
- Backlighting (LCD, cellular phones, switches, keys, displays, illuminated advertising, general lighting).
- Coupling into light guides; Interior automotive lighting (e.g. dashboard backlighting, etc.).

Device Selection Guide

Chip		Lens Color
Material	**Emitted Color**	
InGaN	Blue	Water Clear

Absolute Maximum Ratings (Ta=25℃)

Parameter	Symbol	Rating	Unit
Reverse Voltage	V_R	5	V
Forward Current	I_F	25	mA
Peak Forward Current (Duty 1/10 @1KHz)	I_{FP}	100	mA
Power Dissipation	Pd	110	mW
Electrostatic Discharge(HBM)	ESD	2000	V
Operating Temperature	Topr	-40 ~ +100	℃
Storage Temperature	Tstg	-40~ +110	℃
Soldering Temperature	Tsol	Reflow Soldering : 260 ℃ for 10 sec. Hand Soldering : 350 ℃ for 3 sec.	

Electro-Optical Characteristics (Ta=25℃)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Luminous Intensity	Iv	112	-----	285	mcd	IF=20mA
Viewing Angle	2θ 1/2	-----	120	-----	deg	
Peak Wavelength	λp	-----	468	-----	nm	
Dominant Wavelength	λd	464.5	-----	476.5	nm	
Spectrum RadiationBandwidth	Δλ	-----	20	-----	nm	
Forward Voltage	VF	2.90	-----	3.60	V	
Reverse Current	IR	-----	-----	50	μA	VR=5V

Notes:

1.Tolerance of Luminous Intensity ±11%.
2.Tolerance of Forward Voltage ±0.1V.
3.Tolerance of dominant wavelength ±1nm.

Bin Range Of Dom. Wavelength

Group	Bin	Min	Max	Unit	Condition
A	A9	464.5	467.5	nm	I_F=20mA
	A10	467.5	470.5		
	A11	470.5	473.5		
	A12	473.5	476.5		

Bin Range Of Luminous Intensity

Bin	Min	Max	Unit	Condition
R1	112	140	mcd	I_F=20mA
R2	140	180		
S1	180	225		
S2	225	285		

Bin Range Of Forward Voltage

Group	Bin	Min	Max	Unit	Condition
B2	36	2.90	3.00	V	I_F=20mA
	37	3.00	3.10		
	38	3.10	3.20		
	39	3.20	3.30		
	40	3.30	3.40		
	41	3.40	3.50		
	42	3.50	3.60		

Notes:

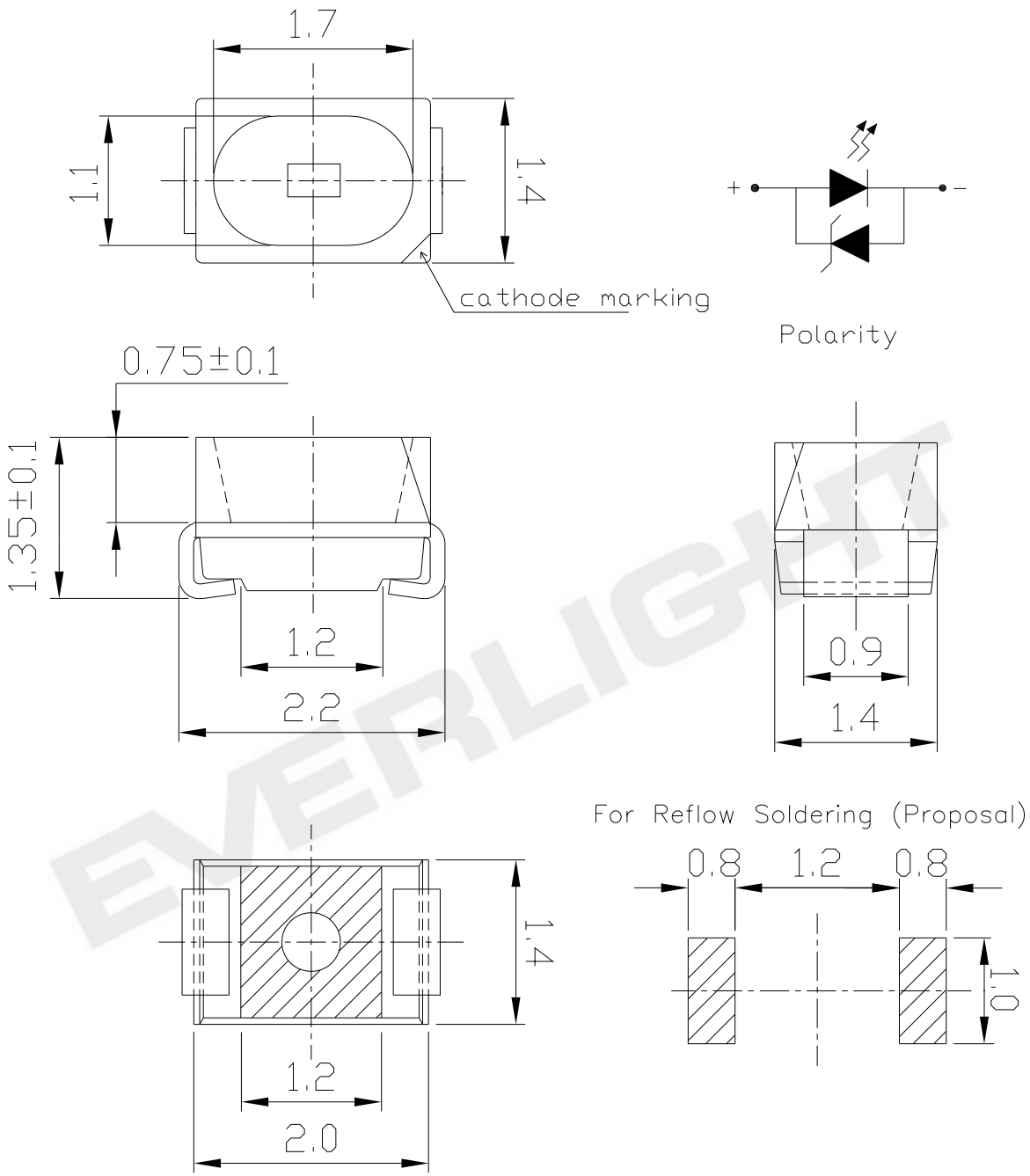
1.Tolerance of Luminous Intensity ±11%.
2.Tolerance of Forward Voltage ±0.1V.
3.Tolerance of dominant wavelength ±1nm.

Reliability Test Items And Conditions

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

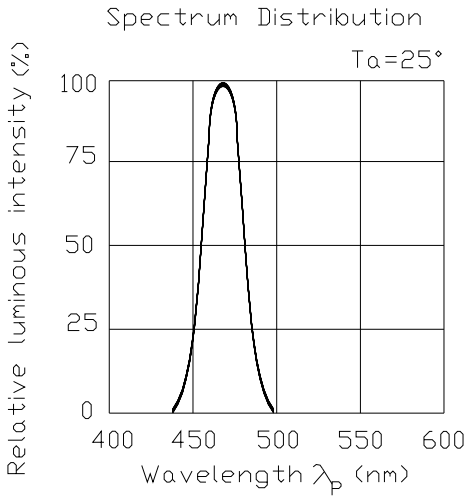
No.	Items	Test Condition	Test Hours/Cycles	Sample Size	Ac/Re
1	Reflow Soldering	Temp. : 260℃±5℃ Min.10sec.	6 Min.	22 PCS.	0/1
2	Temperature Cycle	H : +100℃ 15min ∫ 5 min L : -40℃ 15min	300 Cycles	22 PCS.	0/1
3	Thermal Shock	H : +100℃ 5min ∫ 10 sec L : -10℃ 5min	300 Cycles	22 PCS.	0/1
4	High Temperature Storage	Temp. : 100℃	1000 Hrs.	22 PCS.	0/1
5	Low Temperature Storage	Temp. : -40℃	1000 Hrs.	22 PCS.	0/1
6	DC Operating Life	I_F = 20 mA/25℃	1000 Hrs.	22 PCS.	0/1
7	High Temperature / High Humidity	85℃/ 85%RH	1000 Hrs.	22 PCS.	0/1

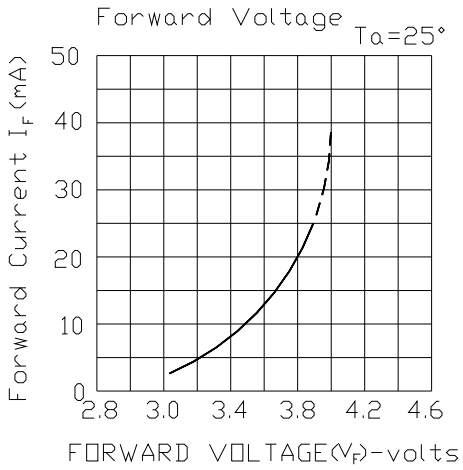
Package Outline Dimensions

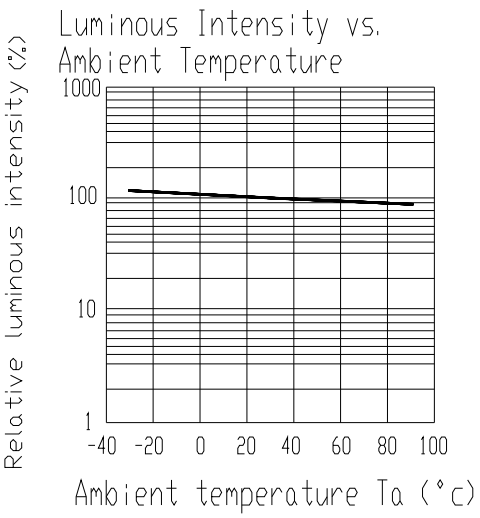


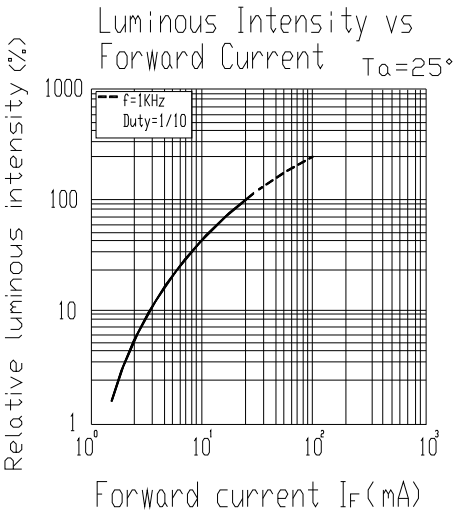
Note: The tolerances unless mentioned is ±0.1mm ,Unit = mm

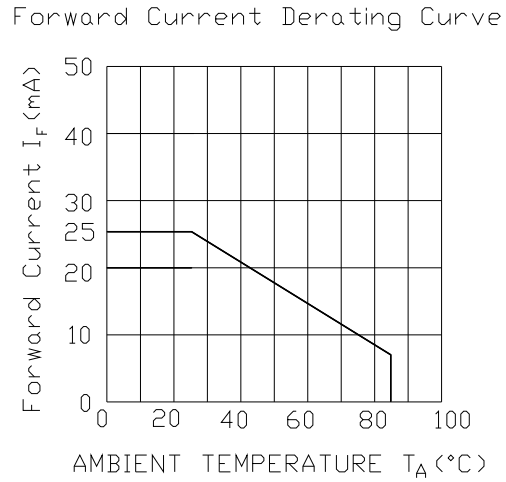
Typical Electro-Optical Characteristics Curves

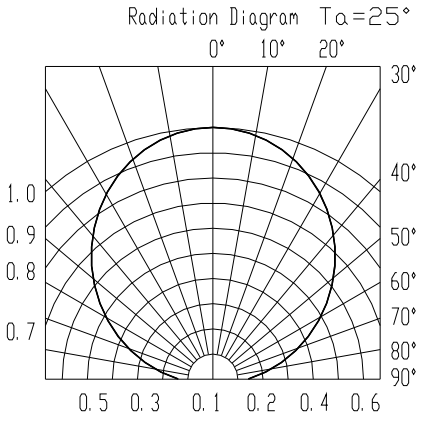










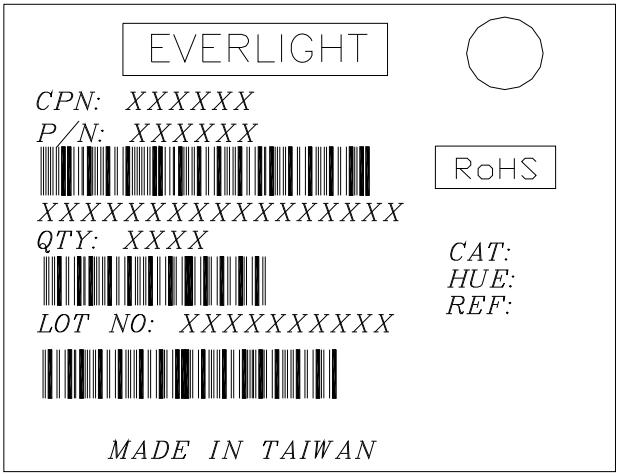


Label explanation

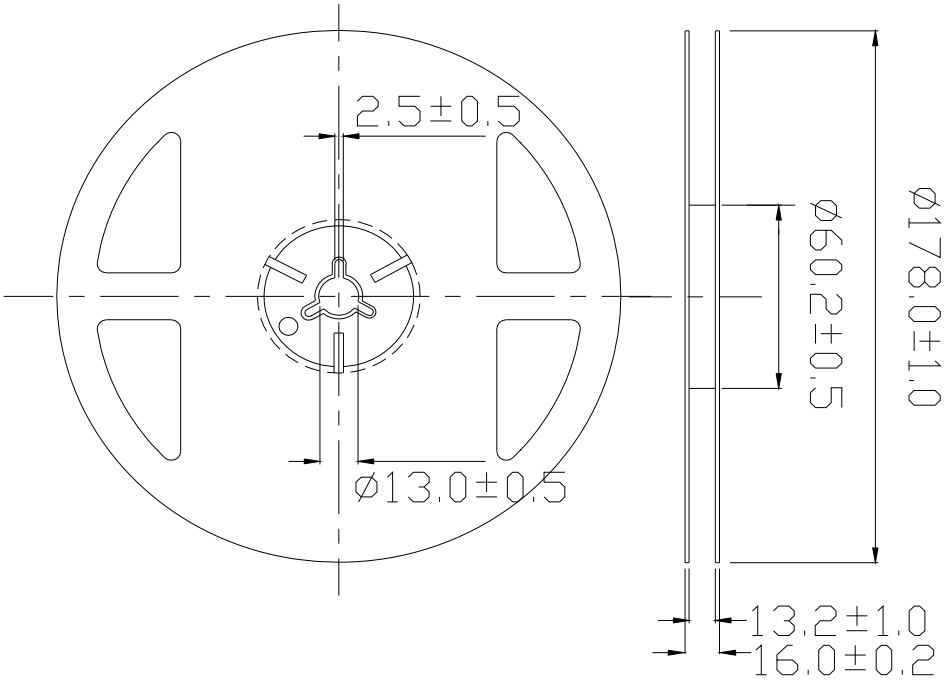
CAT: Luminous Intensity Rank

HUE: Chromaticity Coordinates

REF: Forward Voltage Rank

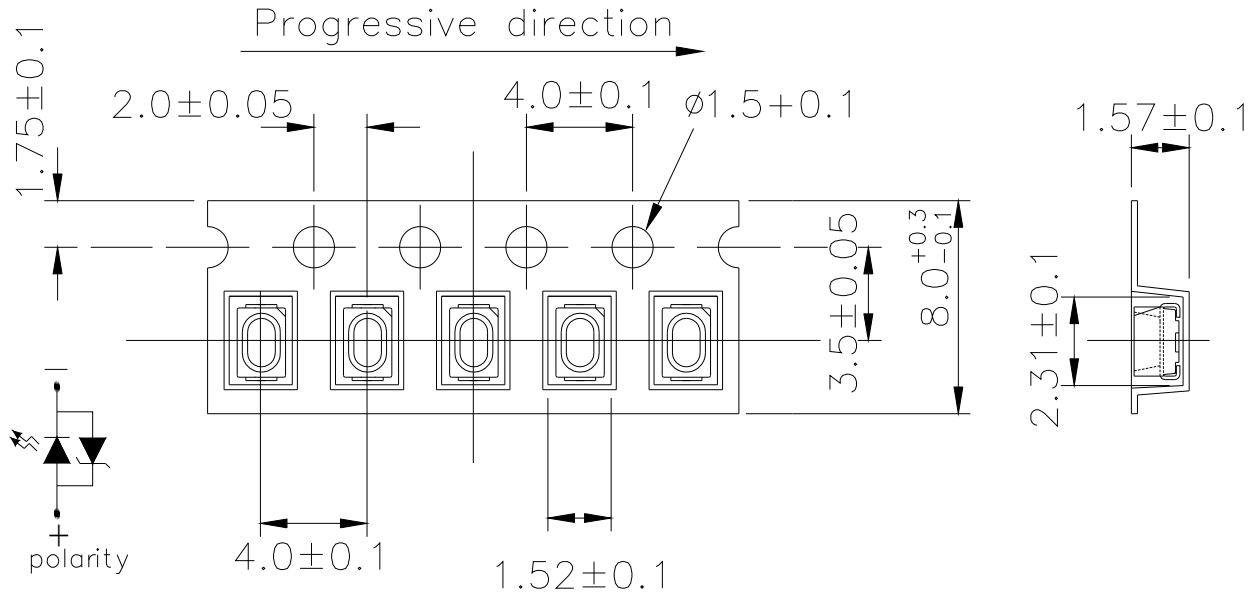


Reel Dimensions



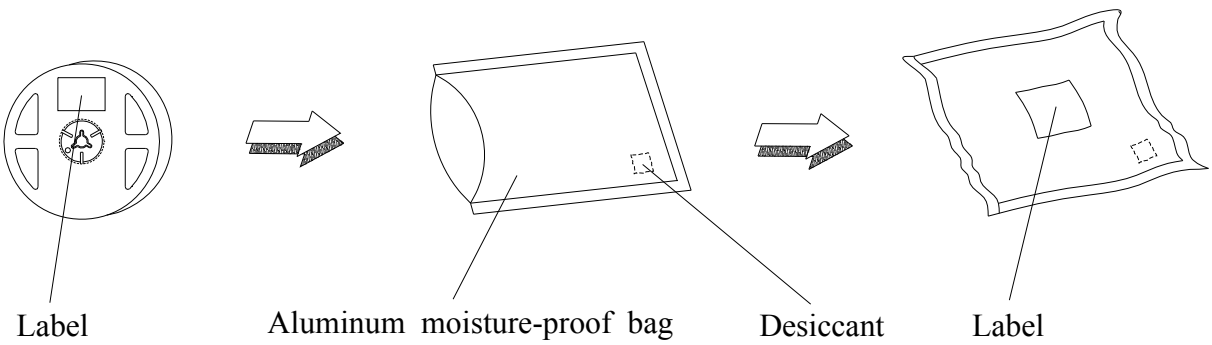
Note: The tolerances unless mentioned is ±0.1mm , Unit = mm

Carrier Tape Dimensions: Loaded quantity per reel 2000 PCS/reel



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

Moisture Resistant Packaging



Precautions For Use

1. Over-current-proof

Customer must apply resistors for protection, otherwise slight voltage shift will cause big current change (Burn out will happen).

2. Storage

2.1 Do not open moisture proof bag before the products are ready to use.

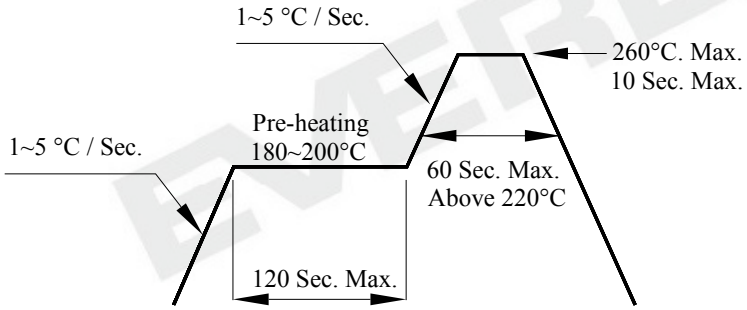
2.2 Before opening the package: The LEDs should be kept at 30℃ or less and 90%RH or less.

2.3 After opening the package: The LED's floor life is 1 year under 30℃ or less and 60% RH or less. If unused LEDs remain, it should be stored in moisture proof packages.

2.4 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.

3. Soldering Condition

3.1 Pb-free solder temperature profile



3.2 Reflow soldering should not be done more than two times.

3.3 When soldering, do not put stress on the LEDs during heating.

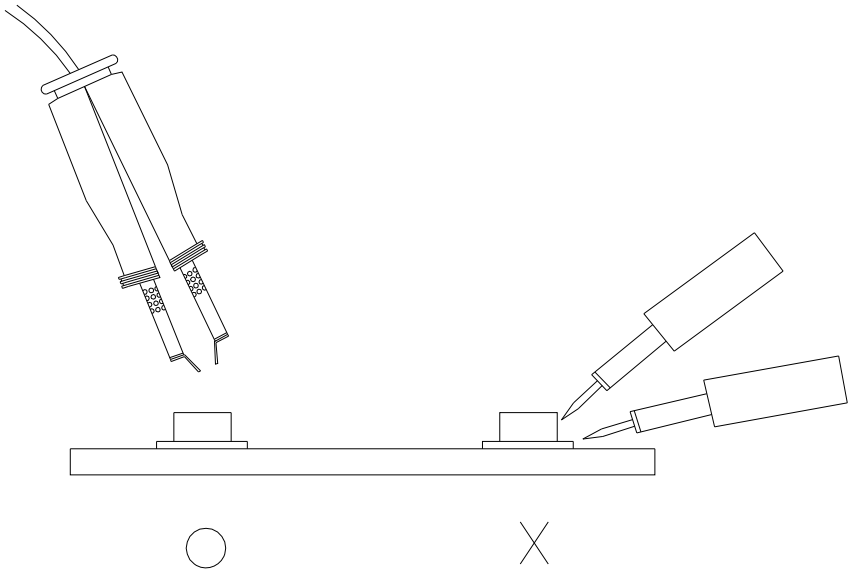
3.4 After soldering, do not warp the circuit board.

4.Soldering Iron

Each terminal is to go to the tip of soldering iron temperature less than 350℃ for 3 seconds within once in less than the soldering iron capacity 25W. Leave two seconds and more intervals, and do soldering of each terminal. Be careful because the damage of the product is often started at the time of the hand solder.

5.Repairing

Repair should not be done after the LEDs have been soldered. When repairing is unavoidable, a double-head soldering iron should be used (as below figure). It should be confirmed beforehand whether the characteristics of the LEDs will or will not be damaged by repairing.



DISCLAIMER

1. EVERLIGHT reserves the right(s) on the adjustment of product material mix for the specification.
2. The product meets EVERLIGHT published specification for a period of twelve (12) months from date of shipment.
3. The graphs shown in this datasheet are representing typical data only and do not show guaranteed values.
4. When using this product, please observe the absolute maximum ratings and the instructions for using outlined in these specification sheets. EVERLIGHT assumes no responsibility for any damage resulting from the use of the product which does not comply with the absolute maximum ratings and the instructions included in these specification sheets.
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