

### SMD ■ Top View LEDs 67-01UYC/S530-A5/S137/TR8



#### Features

- P-LCC-2 package.
- White package with black surface.
- Optical indicator.
- Colorless clear window.
- Wide viewing angle.
- Suitable for vapor-phase reflow.
- Computable with automatic placement equipment.
- Available on tape and reel (8mm Tape).
- Pb-free.
- The product itself will remain within RoHS compliant version.
- Precondition: Bases on JEDEC J-STD 020D Level 4.

#### 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	Brilliant Yellow	Water Clear

### Absolute Maximum Ratings (Ta=25℃)

Parameter	Symbol	Rating	Unit
Reverse Voltage	V <sub>R</sub>	12	V
Forward Current	I <sub>F</sub>	25	mA
Peak Forward Current (Duty 1/10 @1KHz)	I <sub>FP</sub>	60	mA
Power Dissipation	P <sub>d</sub>	60	mW
Electrostatic Discharge(HBM)	ESD	2000	V
Operating Temperature	T <sub>opr</sub>	-40 ~ +85	℃
Storage Temperature	T <sub>stg</sub>	-40 ~ +90	℃
Soldering Temperature	T <sub>sol</sub>	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	I <sub>v</sub>	72	-----	285	mcd	I <sub>F</sub> =20mA
Viewing Angle	2θ <sub>1/2</sub>	-----	120	-----	deg	I <sub>F</sub> =20mA
Peak Wavelength	λ <sub>p</sub>	-----	591	-----	nm	I <sub>F</sub> =20mA
Dominant Wavelength	λ <sub>d</sub>	584.0	-----	594.0	nm	I <sub>F</sub> =20mA
Spectrum Radiation Bandwidth	Δλ	-----	15		nm	I <sub>F</sub> =20mA
Forward Voltage	V <sub>F</sub>	1.5	----	2.5	V	I <sub>F</sub> =20mA
Reverse Current	I <sub>R</sub>	-----	-----	10	μA	V <sub>R</sub> =12V

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
Q	72.0	112.0	mcd	I <sub>F</sub> =20mA
R	112.0	180.0		
S	180.0	285.0		

Note:

Tolerance of Luminous Intensity: ±11%

### Bin Range of Dominant Wavelength

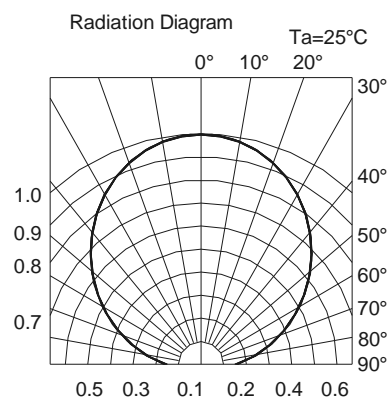
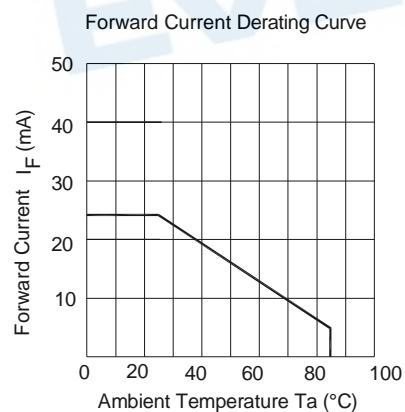
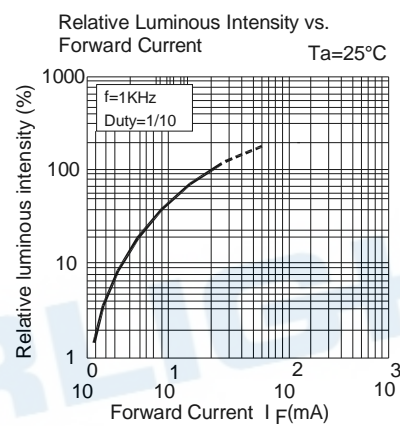
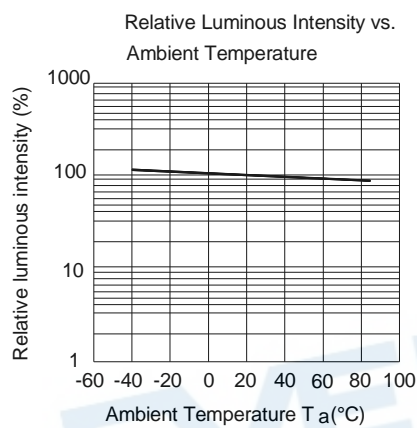
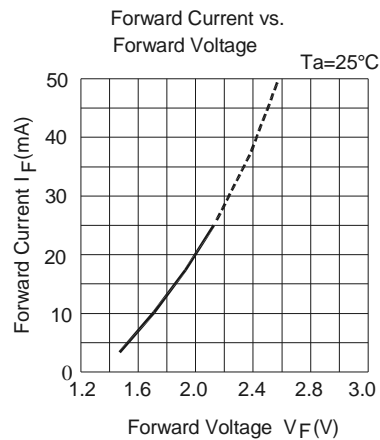
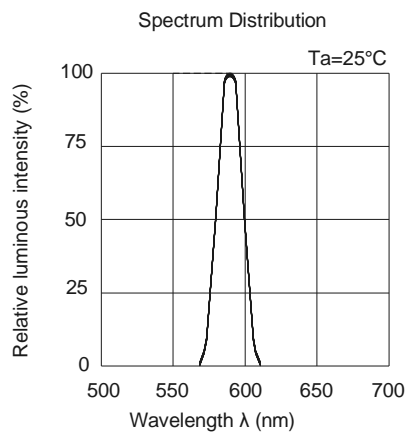
Bin Code	Min.	Max.	Unit	Condition
3	584.0	586.5	nm	I <sub>F</sub> =20mA
4	586.5	589.0		
5	589.0	591.5		
6	591.5	594.0		

Note:

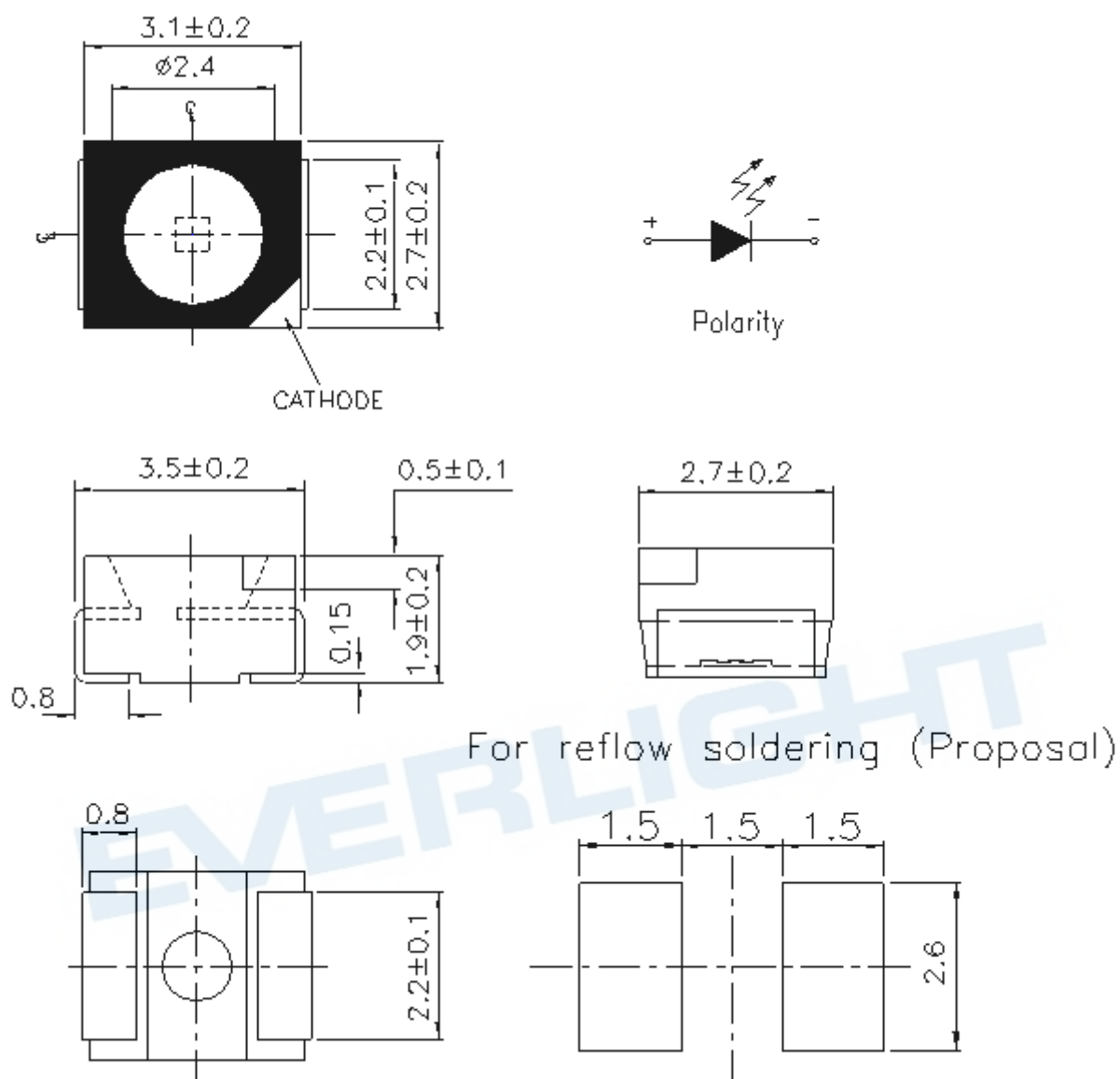
Tolerance of Dominant Wavelength : ±1nm

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## Typical Electro-Optical Characteristics Curves



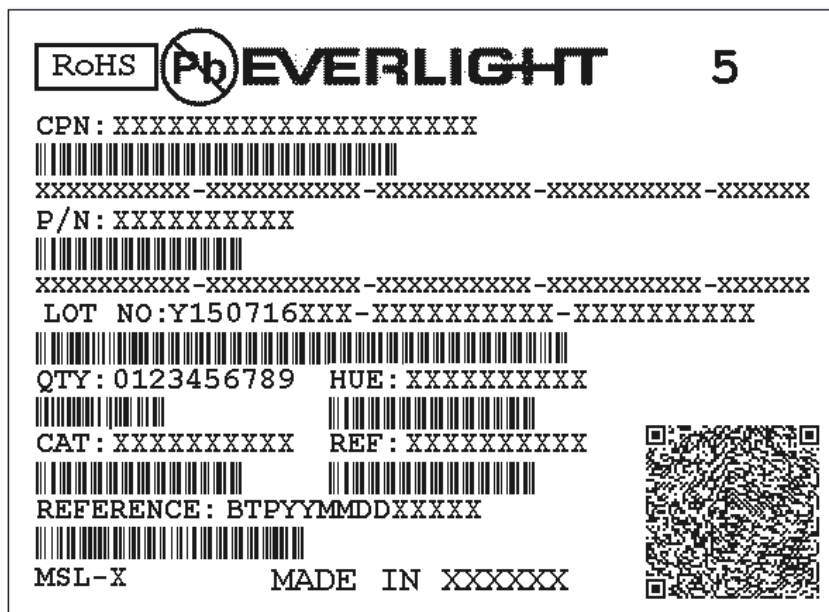
## Package Dimension



Note: Tolerances unless mentioned  $\pm 0.1$  mm. Unit = mm

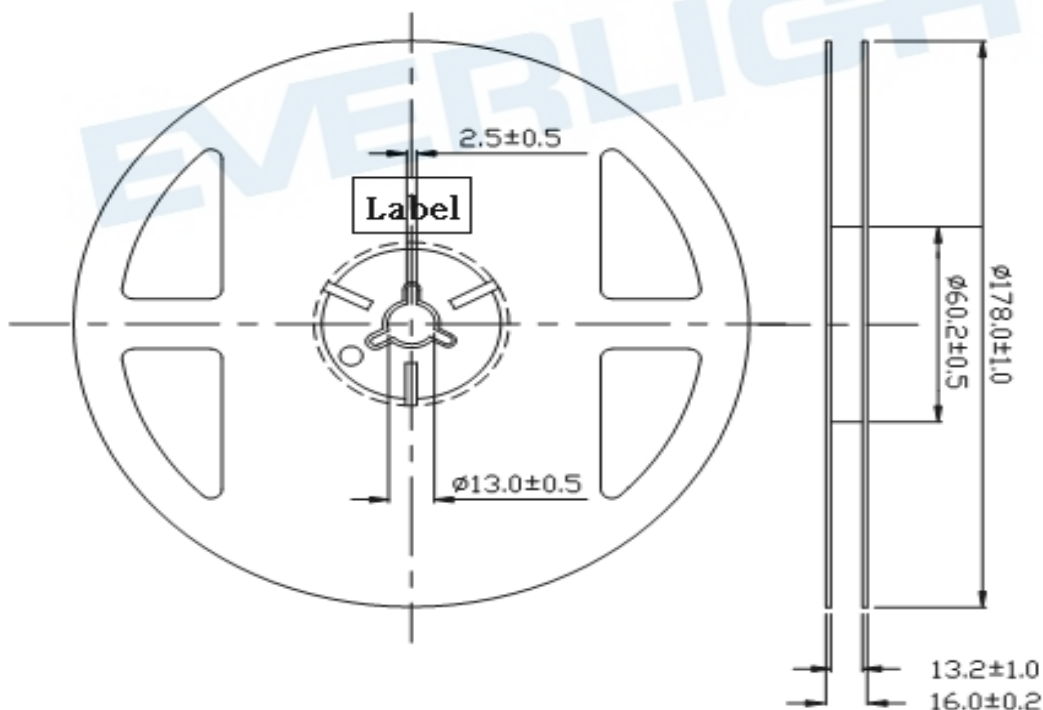
## Moisture Resistant Packing Materials

### Label Explanation

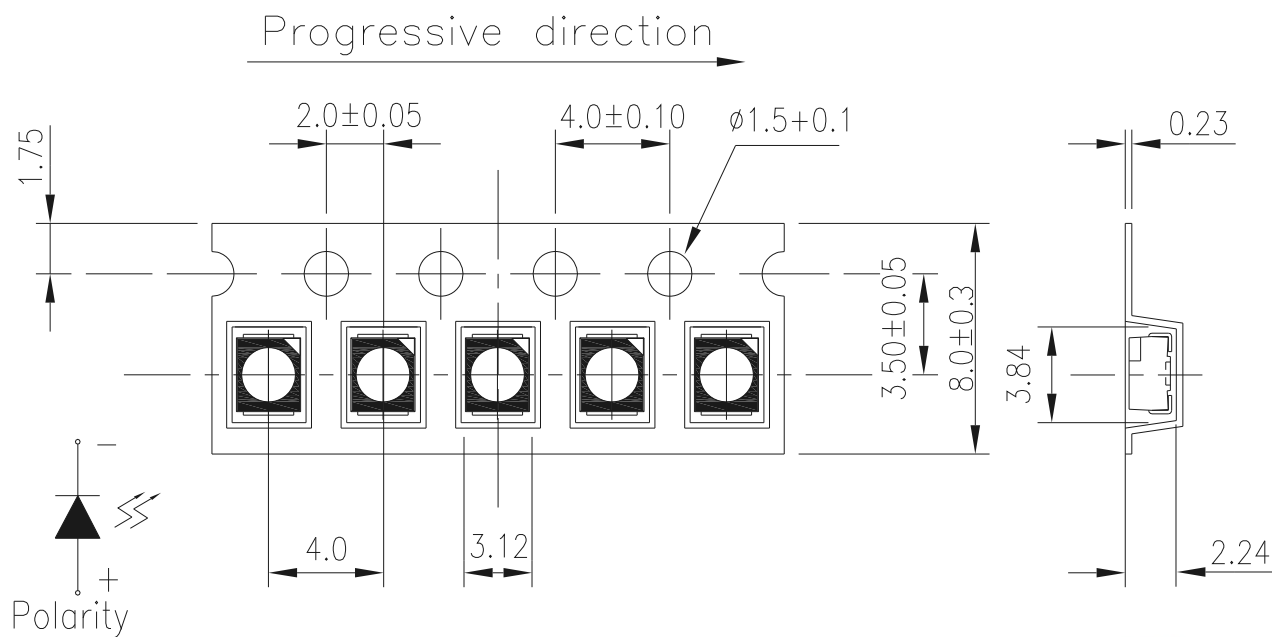


- CPN: Customer's Product Number
- P/N: Product Number
- QTY: Packing Quantity
- CAT: Luminous Intensity Rank
- HUE: Dom. Wavelength Rank
- REF: Forward Voltage Rank
- LOT No: Lot Number

### Reel Dimensions

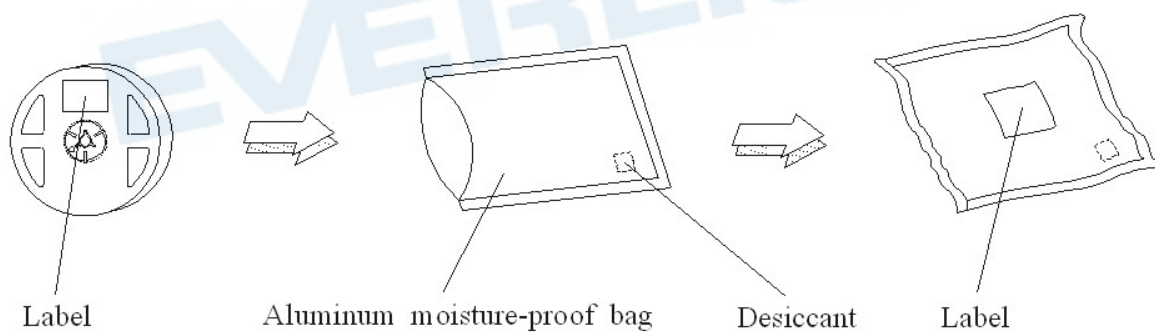


Carrier Tape Dimensions: Loaded Quantity 2000 pcs Per Reel



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

### Moisture Resistant Packing Process



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

## 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°C ±5°C 5sec.	6 min	22 PCS.	0/1
2	Temperature Cycle	H : +100°C 15min └ 5 min L : -40°C 15min	300 Cycles	22 PCS.	0/1
3	Thermal Shock	H : +100°C 5min └ 10 sec L : -10°C 5min	300 Cycles	22 PCS.	0/1
4	High Temperature Storage	Temp. : 100°C	1000 Hrs.	22 PCS.	0/1
5	Low Temperature Storage	Temp. : -40°C	1000 Hrs.	22 PCS.	0/1
6	DC Operating Life	I <sub>F</sub> = 20 mA / 25°C	1000 Hrs.	22 PCS.	0/1
7	High Temperature / High Humidity	85°C/85%RH	1000 Hrs.	22 PCS.	0/1



## 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°C or less and 90%RH or less.

2.3 After opening the package: The LED's floor life is 1 year under 30°C or less and 60% RH or less.

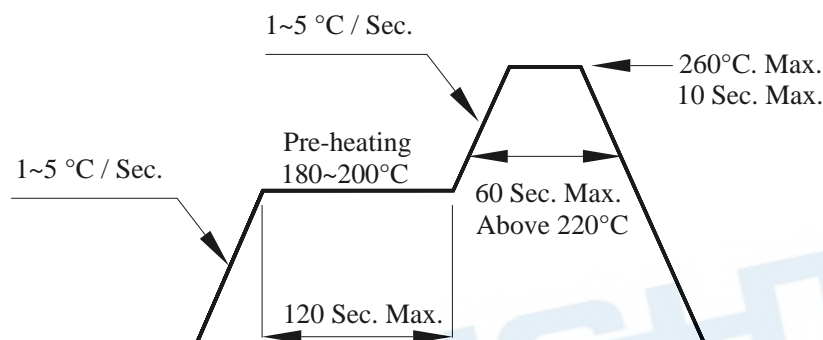
If unused LEDs remain, it should be stored in moisture proof packages.

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°C 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.

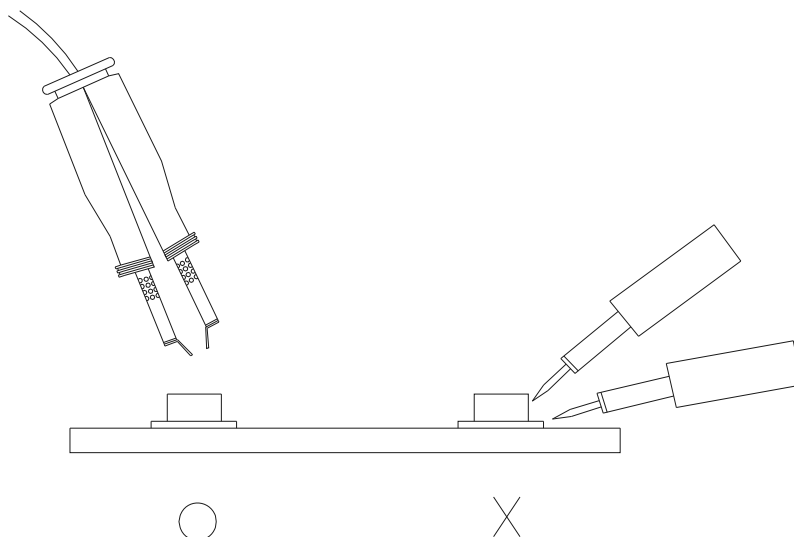
3.4 After soldering, do not warp the circuit board.

### 4. Soldering Iron

Each terminal is to go to the tip of soldering iron temperature less than 350°C 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.



## 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.

## DISCLAIMER

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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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