DATASHEET

SMD ▪ Side View LEDs (Height 0.8mm)
99-213/RQC-C0U1V1G3E/2C-CS

Features

•Side view LED.

•Lead frame package with individual 2 pins.

•Wide viewing angle.

•Soldering methods: IR reflow soldering.

•Precondition: Bases on JEDEC J-STD 020D Level 3

•Pb-free.

•The product itself will remain within RoHS compliant version.

•Compliance with EU REACH.

•Compliance Halogen Free .(Br<900ppm,CI<900ppm,Br+CI<1500ppm).

Descriptions

The 99-213 series is available in soft orange, green, blue and yellow. Due to the package design,the LED has wide viewing angle , low power consumption . This feature makes the LED ideal for light guide application.

Applications

. LCD Back Light.
. Mobile phones.
. Indicators.
. Illuminations.
. Switch Lights.

Device Selection Guide

Chip Materials	Emitted Color	Resin Color
AlGaInP	Brilliant Red	Water Clear

Absolute Maximum Ratings (Ta=25℃)

Parameter	Symbol	Rating	Unit
Reverse Voltage	V_R	12	V
Forward Current	I_F	50	mA
Peak Forward Current (Duty 1/10 @1KHz)	I_{FP}	100	mA
Power Dissipation	Pd	140	mW
Junction Temperature	T_j	125	℃
Operating Temperature	T_{opr}	-40 ~ +85	℃
Storage Temperature	Tstg	-40 ~ +90	℃
ESD	ESD_{HBM}	2000	V
Soldering Temperature	T_{sol}	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	450	-----	900	mcd	I_F=20mA
Viewing Angle	$2\theta_{1/2}$	-----	110	-----	deg	I_F=20mA
Peak Wavelength	λp	-----	632	-----	nm	I_F=20mA
Dominant Wavelength	λd	619	----	628	nm	I_F=20mA
Spectrum Radiation Bandwidth	Δλ	-----	20	-----	nm	I_F=20mA
Forward Voltage	V_F	1.8	----	2.8	V	I_F=20mA
Reverse Current	I_R	-----	-----	10	μA	V_R=12V

Notes:
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
U1	450	560	mcd	I_F =20mA
U2	560	710		
V1	710	900		

Note:
Tolerance of Luminous Intensity: ±11%

Bin Range of Dominant Wavelength

Bin Code	Min.	Max.	Unit	Condition
C2	619	622	nm	IF =20mA
C3	622	625		
C4	625	628		

Note:
Tolerance of Dominant Wavelength: ±1nm

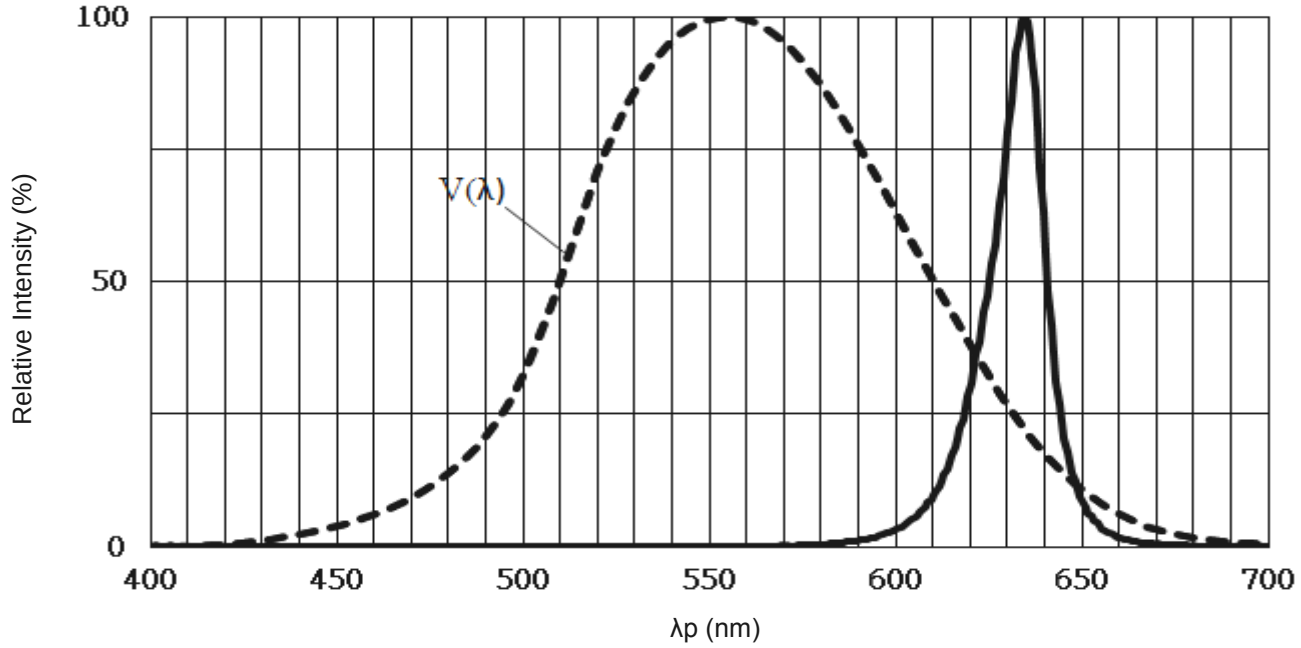
Bin Range of Forward Voltage

Bin Code	Min.	Max.	Unit	Condition
H0	1.75	1.95	V	IF =20mA
H1	1.95	2.15		
H2	2.15	2.35		
H3	2.35	2.55		
H4	2.55	2.75		

Note:
Tolerance of Forward Voltage: ±0.1V

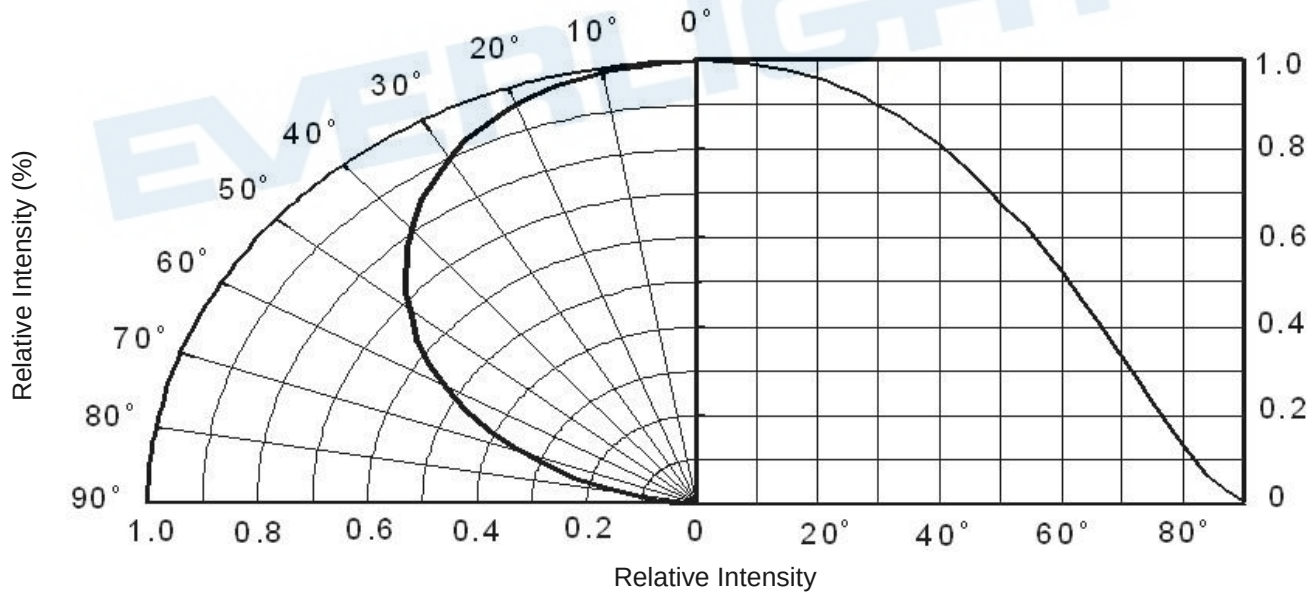
Typical Electro-Optical Characteristics Curves

Typical Curve of Spectral Distribution



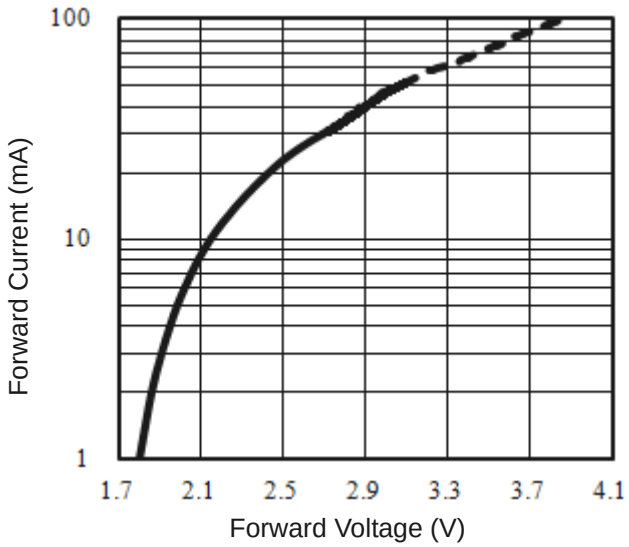
Note: V(λ)=Standard eye response curve; I_F =20mA

Diagram Characteristics of Radiation

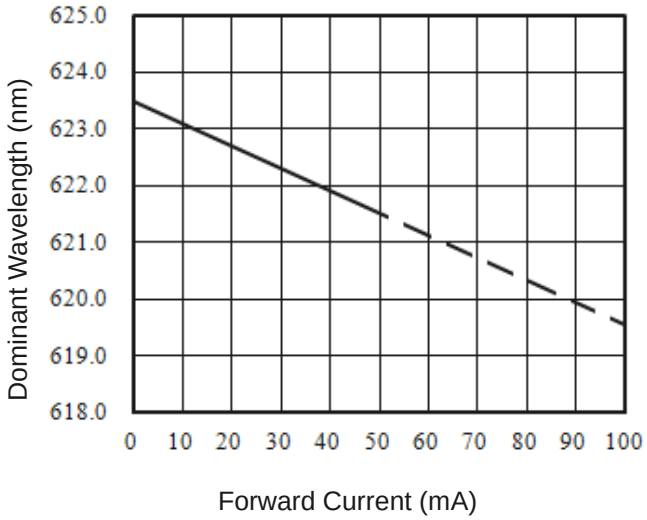


Typical Electro-Optical Characteristics Curves

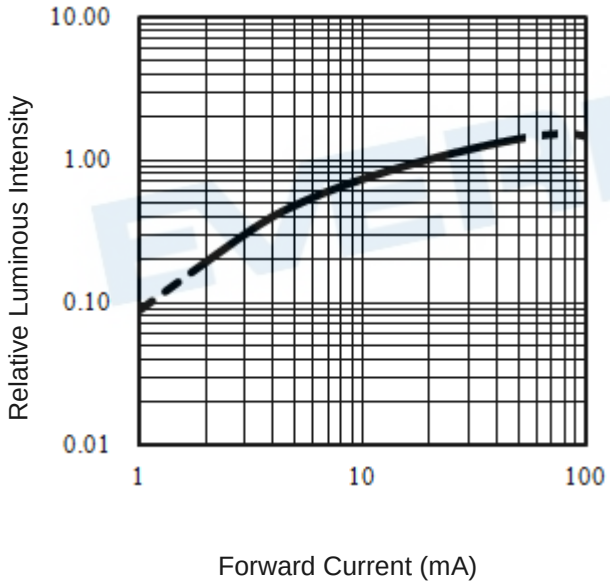
Forward Current vs. Forward Voltage (Ta=25℃)



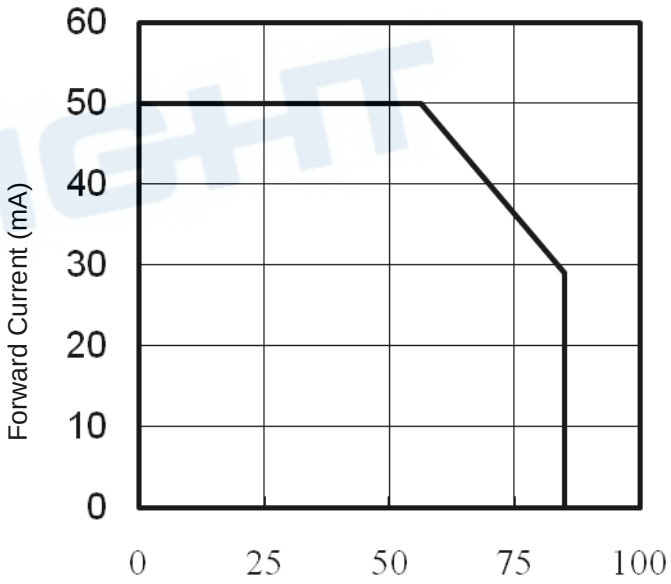
Dominant Wavelength vs. Forward Current (Ta=25℃)



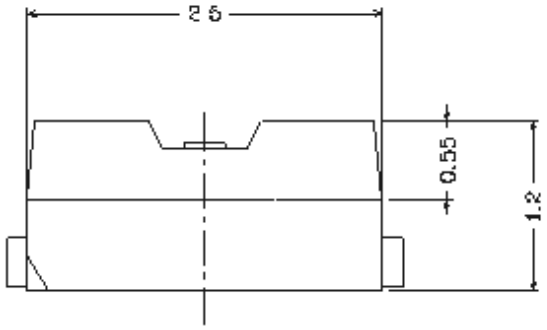
Relative Luminous Intensity vs. Forward Current (Ta=25℃)

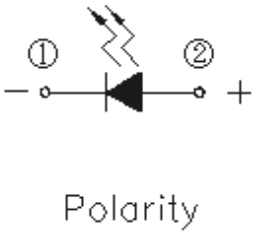


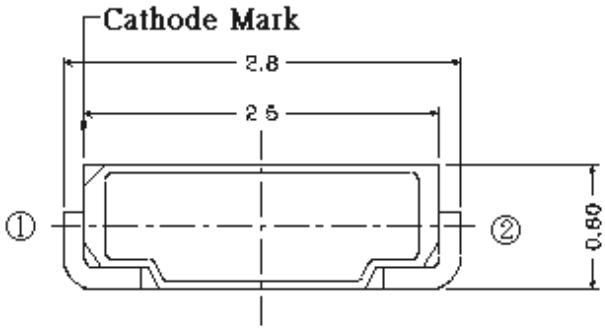
Max. Permissible Forwarded Current (Ta=25℃)

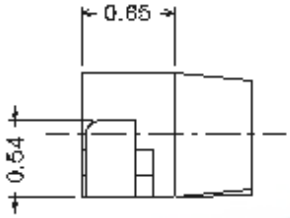


Package Dimension

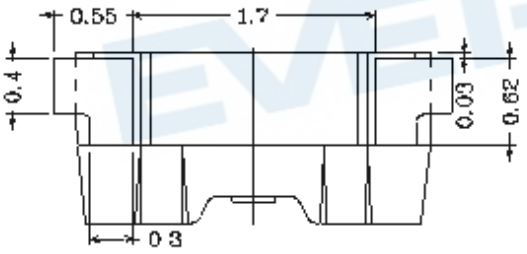


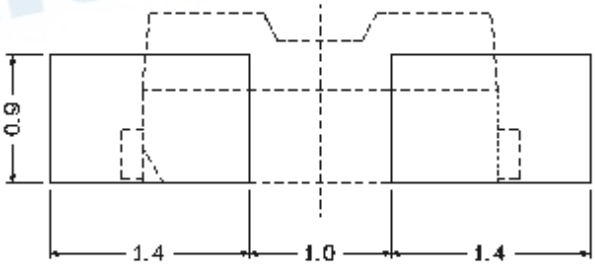






Recommended soldering pad design

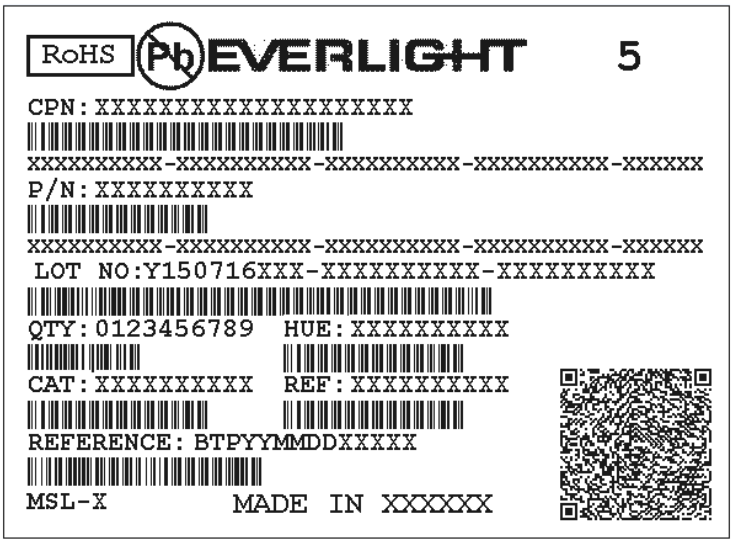




Note: Tolerances unless mentioned ±0.1mm. Unit = mm

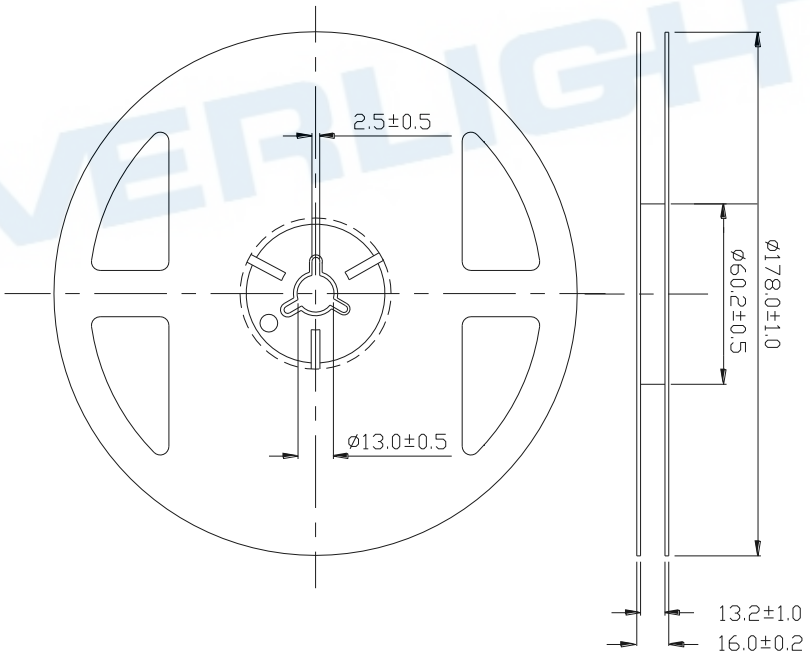
Moisture Resistant Packing Materials

Label Explanation

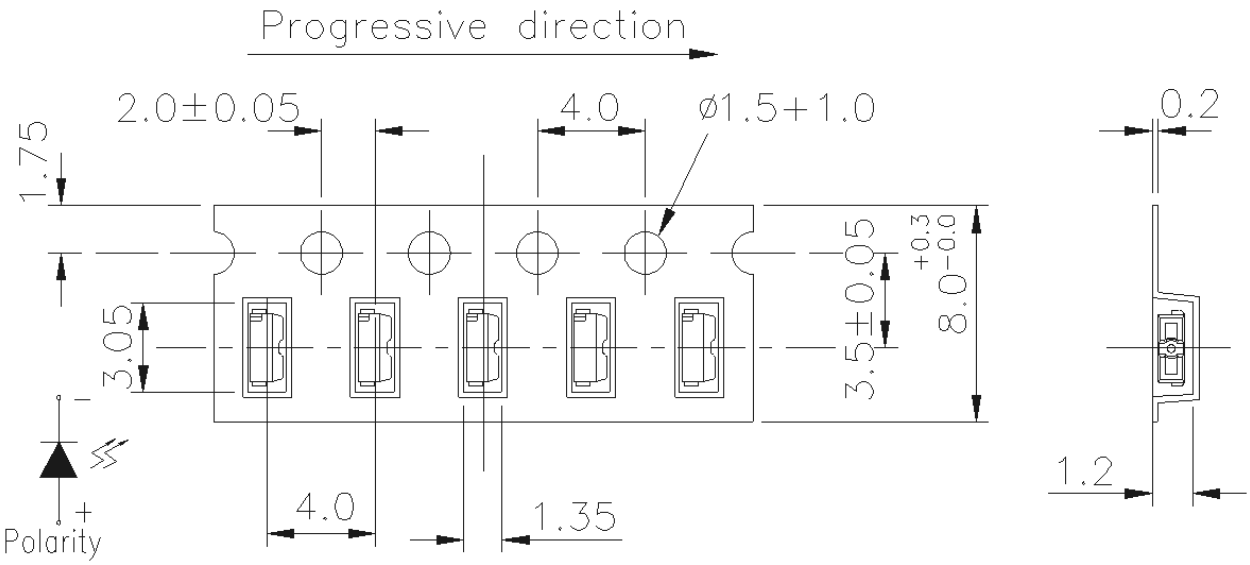


- CPN: Customer's Product Number
- P/N: Product Number
- QTY: Packing Quantity
- CAT: Luminous Intensity Rank
- HUE: Dom. Wavelength Rank
- REF: Forward Voltage Rank
- LOT No: Lot Number

Reel Dimensions

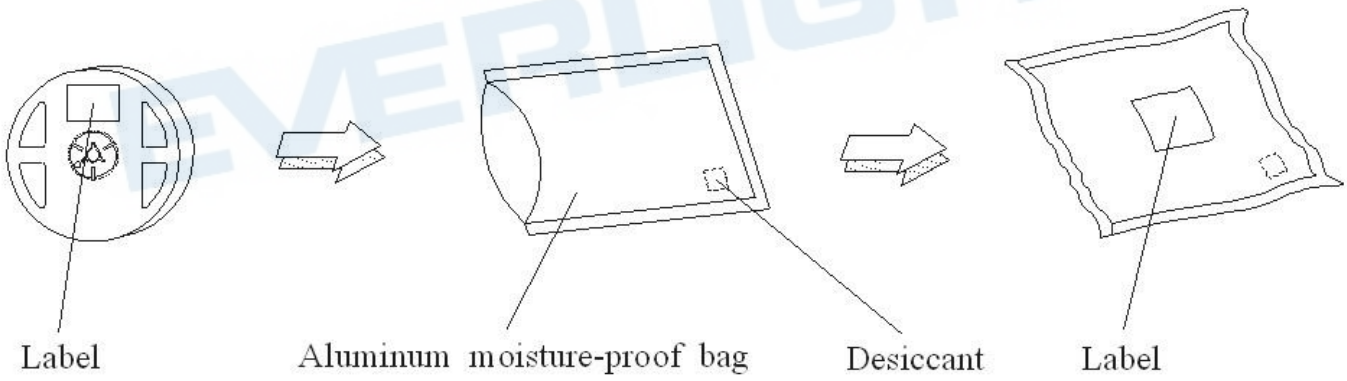


Carrier Tape Dimensions: Loaded Quantity 2000 pcs Per Reel



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

Moisture Resistant Packing Process

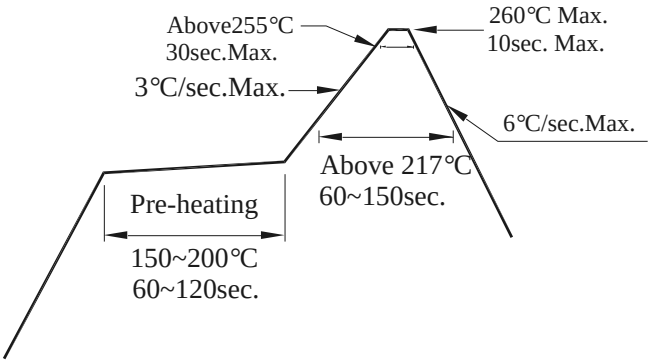


Note: Tolerances unless mentioned ±0.1mm. Unit = mm

Precautions for Use

1. Over-current-proof

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



2. Storage

   2.1 Moisture proof bag should only be opened immediately prior to usage.

   2.2 Environment should be less than 30℃ and 60% RH when moisture proof bag is opened.

   2.3 After opening the package MSL Conditions stated on page 1 of this spec should not be exceeded.

   2.4 If the moisture sensitivity card indicates higher than acceptable moisture, the component should be baked at min. 60deg +/-5deg 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.

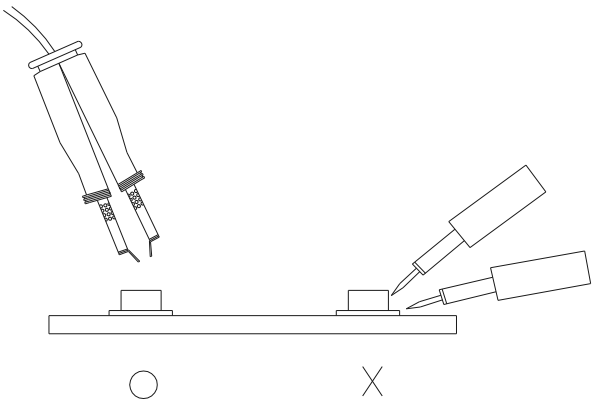
   3.4 After soldering, do not warp the circuit board.

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.



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

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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