

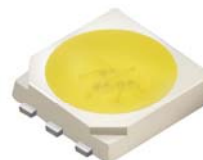
Technical Data Sheet

Luminosity White Color LED

67-235USOP/S1048/TR8

Features

- Super luminosity white LED.
- White SMT package.
- Built in 3 LED chips.
- Lead frame package with individual 6 pins.
- Wide viewing angle.
- Soldering methods: Reflow soldering.
- High performance.
- Pb-free.
- The product itself will remain within RoHS compliant version.



Descriptions

- Due to the package design, 67-235 has wide viewing angle, low power consumption and high luminous intensity. This feature makes it ideal for light pipe or lighting application.

Applications

- Amusement equipment.
- Information boards.
- Flashlight for digital camera of cellular phone.
- Lighting for small size device.

Device Selection Guide

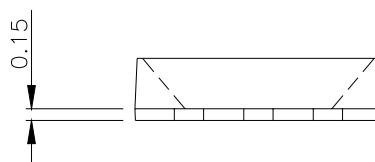
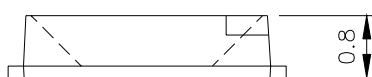
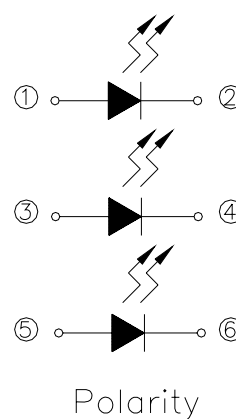
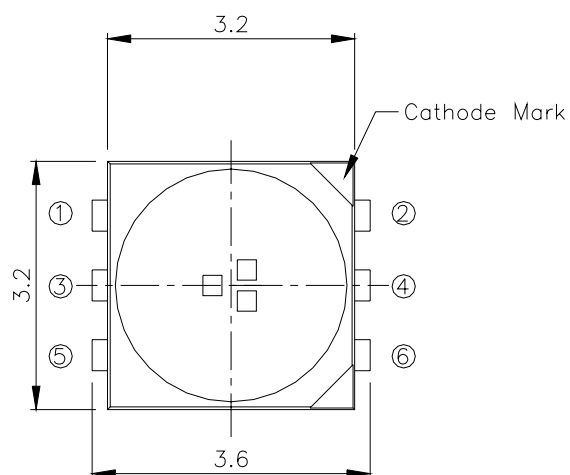
Items	Material	Emitted Color	Resin Color
Chip	InGaN	White	Water Clear
Die attach	Silicon paste	-----	-----

Technical Data Sheet

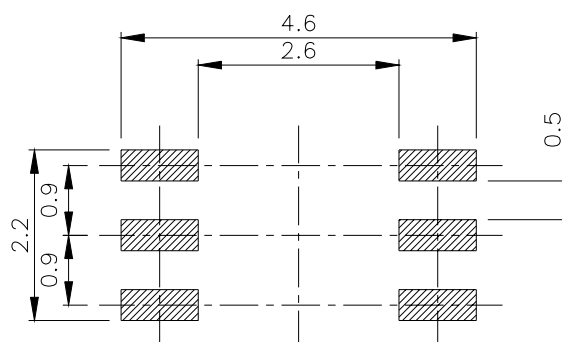
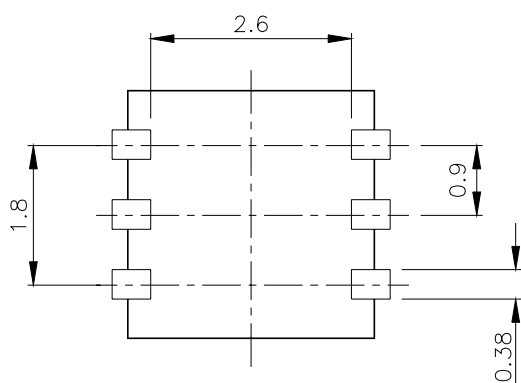
Luminosity White Color LED

67-235USOP/S1048/TR8

Package Outline Dimensions



Recommended soldering pad design



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

Technical Data Sheet

Luminosity White Color LED

67-235USOP/S1048/TR8

Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Rating	Unit
Reverse Voltage*1	V _R	5	V
Forward Current*1	I _F	30	mA
Peak Forward Current (Duty 1/10 @1KHz) *1	I _{FP}	100	mA
Power Dissipation*1	P _d	120	mW
Electrostatic Discharge(HBM) *2	ESD	1000	V
Operating Temperature	T _{opr}	-40 ~ +85	°C
Storage Temperature	T _{stg}	-40 ~ +90	°C
Soldering Temperature	T _{sol}	Reflow Soldering : 260 °C for 10 sec. Hand Soldering : 350 °C for 3 sec.	

*1 The value are based on 1 die performace

*2The products are sensitive to static electricity and care must be fully taken when handling products.

Electro-Optical Characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Luminous Intensity*1	I _V	3600	-----	5700	mcd	I _F =20mA*2
Luminous Flux*1	Φ _v	10	-----	-----	lm	I _F =20mA*2
Viewing Angle*1	2θ _{1/2}	-----	120	-----	deg	I _F =20mA*2
Forward Voltage*2	V _F	2.70	-----	3.70	V	I _F =20mA*2
Reverse Current*2	I _R	-----	-----	50	μA	V _R =5V

Notes:

*1.When three LED dies are operated simultaneously.

*2.For each die.

3.Tolerance of Luminous Intensity ±11%

4. Tolerance of Forward Voltage ±0.1V

Technical Data Sheet

Luminosity White Color LED

67-235USOP/S1048/TR8

Bin Range of Luminous Intensity

Bin Code	Min.	Max.	Unit	Condition
Y2	3600	4500	mcd	I _F =20mA
Z01	4500	5000		
Z01-1	5000	5700		

Notes:

Tolerance of Luminous Intensity: $\pm 11\%$

Technical Data Sheet

Luminosity White Color LED

67-235USOP/S1048/TR8

Bin Range of Chromaticity Coordinate

I_F =20mA

Bin Code	CIE_x	CIE_y	Bin Code	CIE_x	CIE_y
D1	0.3575	0.3612	D2	0.3545	0.3408
	0.3610	0.3850		0.3575	0.3612
	0.3988	0.4116		0.3897	0.3823
	0.3897	0.3823		0.3822	0.3580

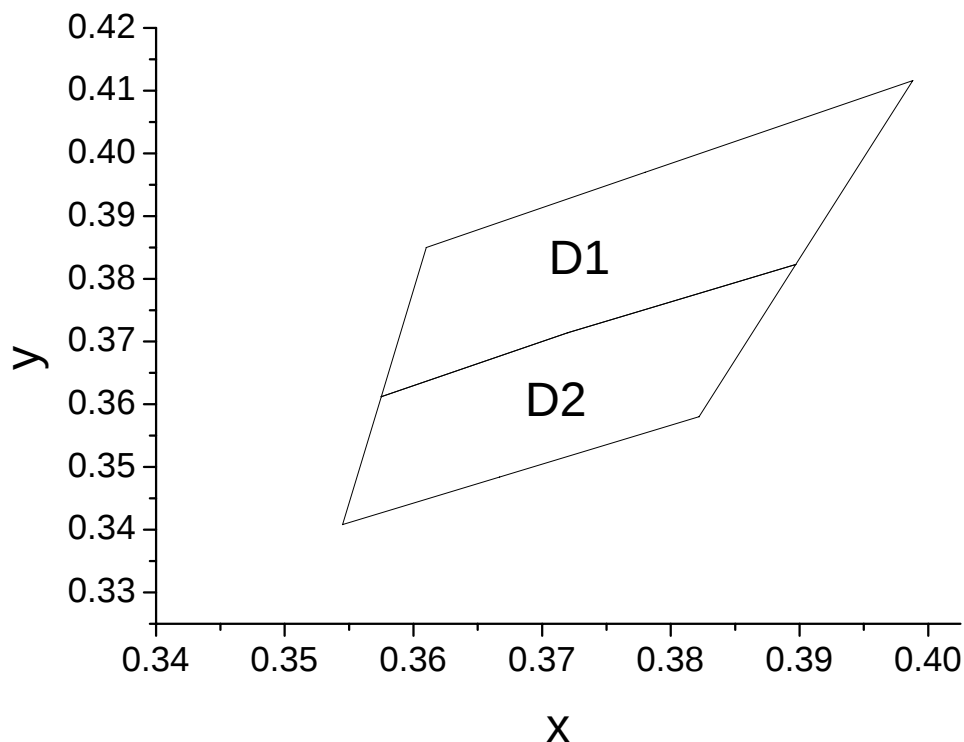
Note: Tolerance of Chromaticity Coordinate: ± 0.01

Technical Data Sheet

Luminosity White Color LED

67-235USOP/S1048/TR8

The CIE 1931 Chromaticity Diagram

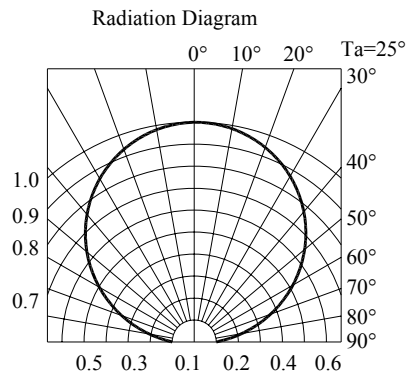
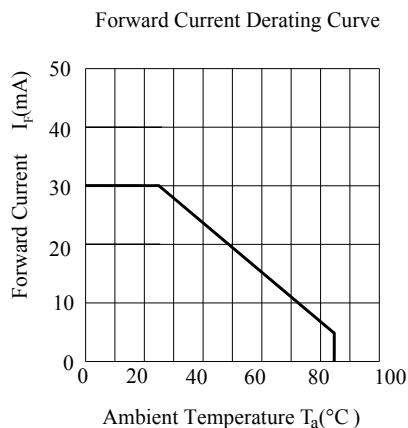
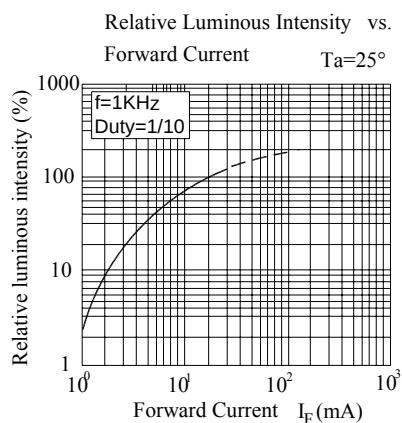
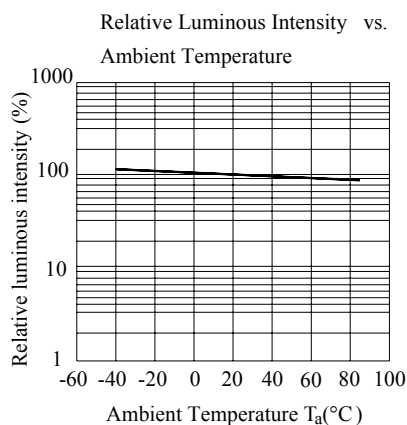
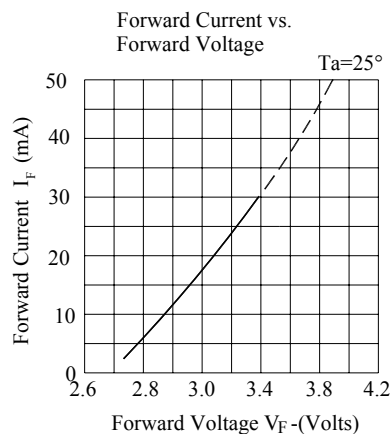
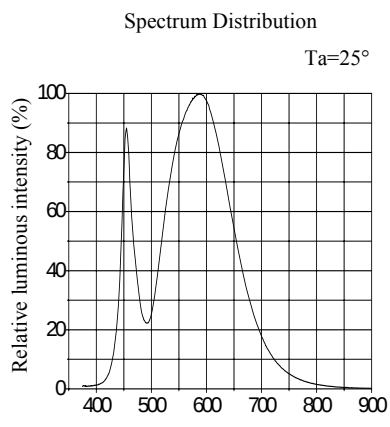


Technical Data Sheet

Luminosity White Color LED

67-235USOP/S1048/TR8

Typical Electro-Optical Characteristics Curves



Technical Data Sheet

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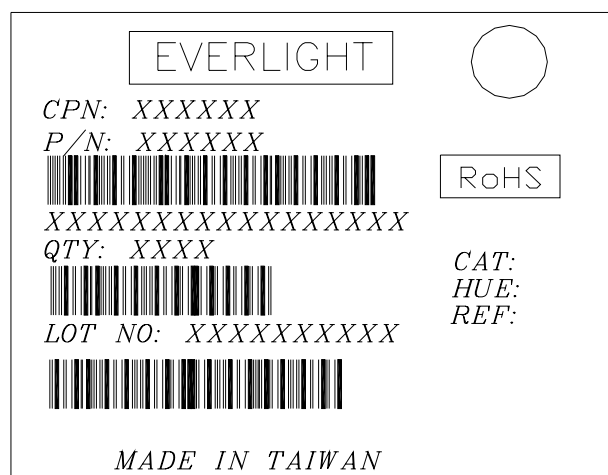
67-235USOP/S1048/TR8

Label Explanation

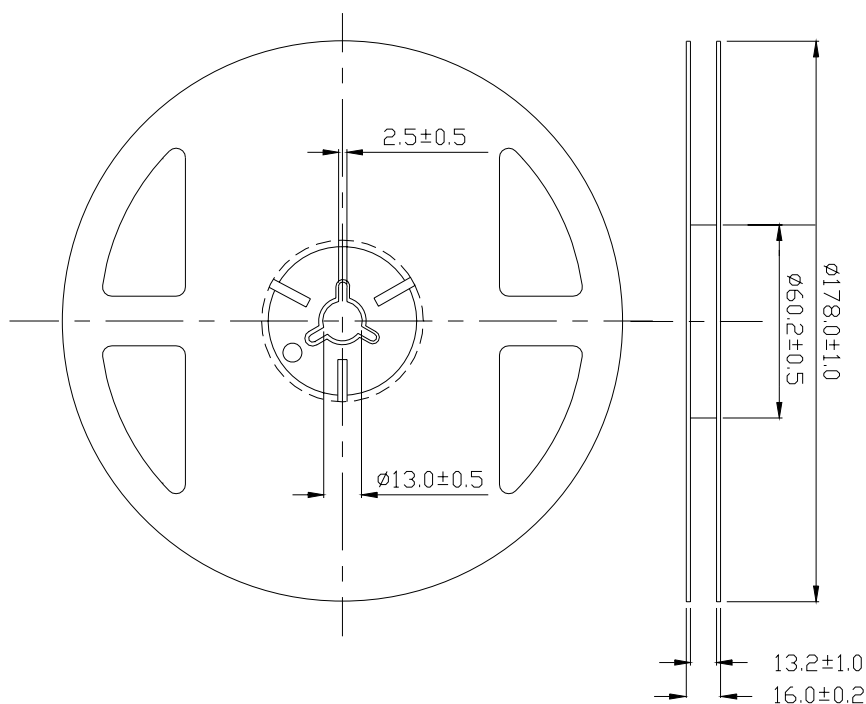
CAT: Luminous Intensity Rank

HUE: Chromaticity Coordinates

REF: Forward Voltage Rank



Reel Dimensions



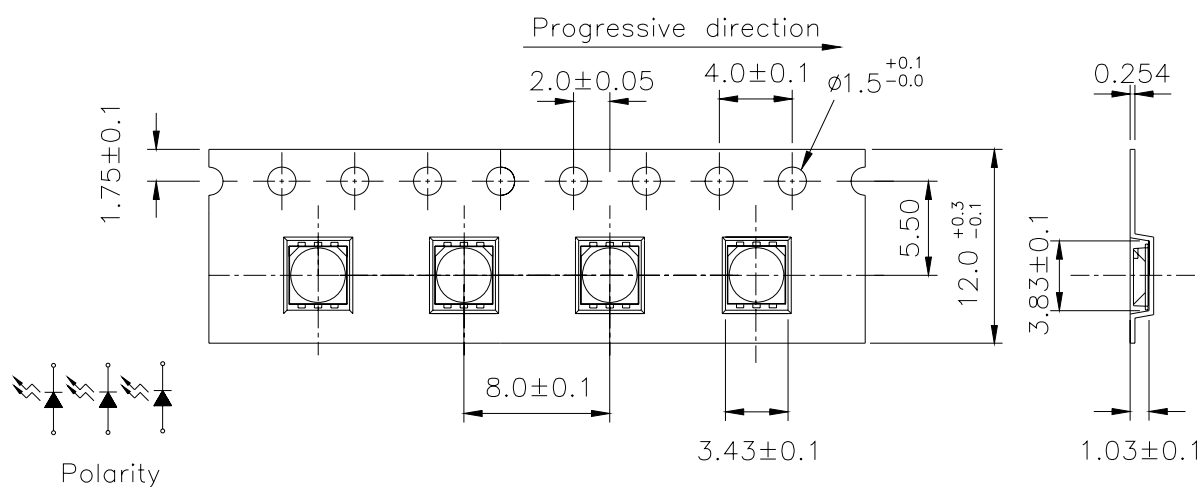
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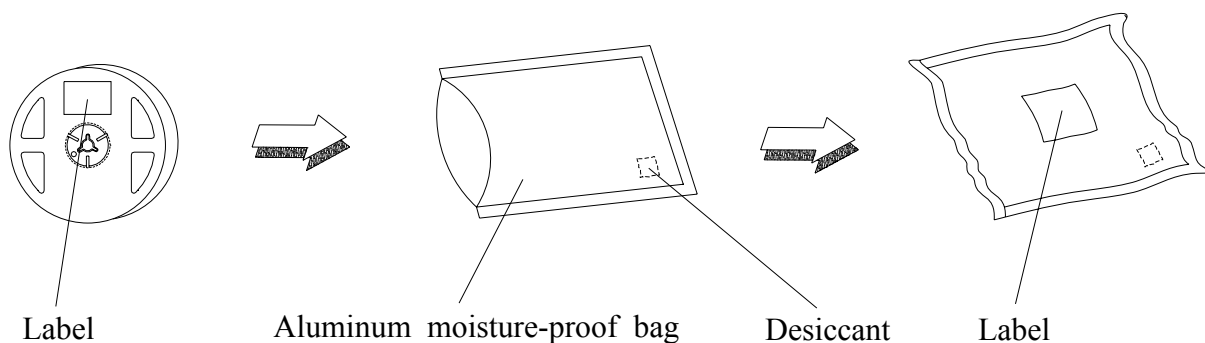
Luminosity White Color LED

67-235USOP/S1048/TR8

Carrier Tape Dimensions: Loaded Quantity 2000 pcs Per Reel



Moisture Resistant Packaging



Technical Data Sheet

Luminosity White Color LED

67-235USOP/S1048/TR8

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 Min. 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 _F = 20 mA	1000 Hrs.	22 PCS.	0/1
7	High Temperature / High Humidity	85°C / 85%RH	1000 Hrs.	22 PCS.	0/1

Technical Data Sheet

Luminosity White Color LED

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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.

MSL-3

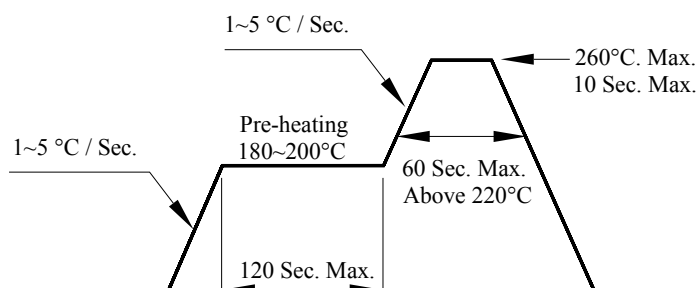
2.3 After opening the package: The LED's floor life are 72 hours under 30°C or less and 60% RH or less. If unused LEDs remain, it should be stored in moisture proof packages.

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.

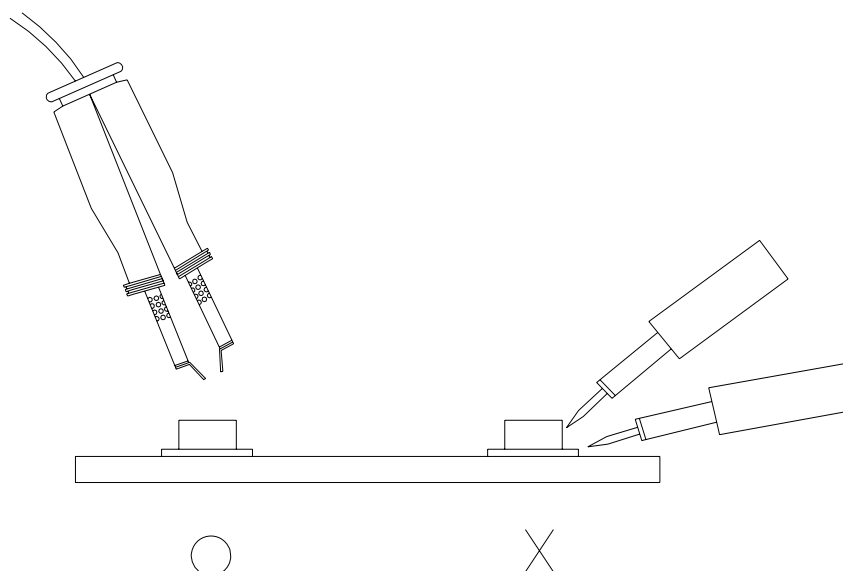
Technical Data Sheet

Luminosity White Color LED

67-235USOP/S1048/TR8

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.



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