SMD LED

Lead-Free Parts

LG-1306DGM-CT-C

DATA SHEET

DOC.NO	:	IMQW0905-LG-1306DGM-CT-C
REV.	:	A
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Features:

1. Package in 8mm carrier tape on 7″ diameter reel.
2. Compatible with automatic placement equipment.
3. Compatible with infrared and vapor phase reflow solder process.
4. Mono-color type.
5. Pb-free.
6. The product itself will remain within RoHS compliant version.

Descriptions:

1. The LG-1306 SMD Taping is much smaller than lead frame type components, thus enable smaller board size, higher packing density, reduced storage space and finally smaller equipment to be obtained.

2. Besides, lightweight makes them ideal for miniature applications. etc.

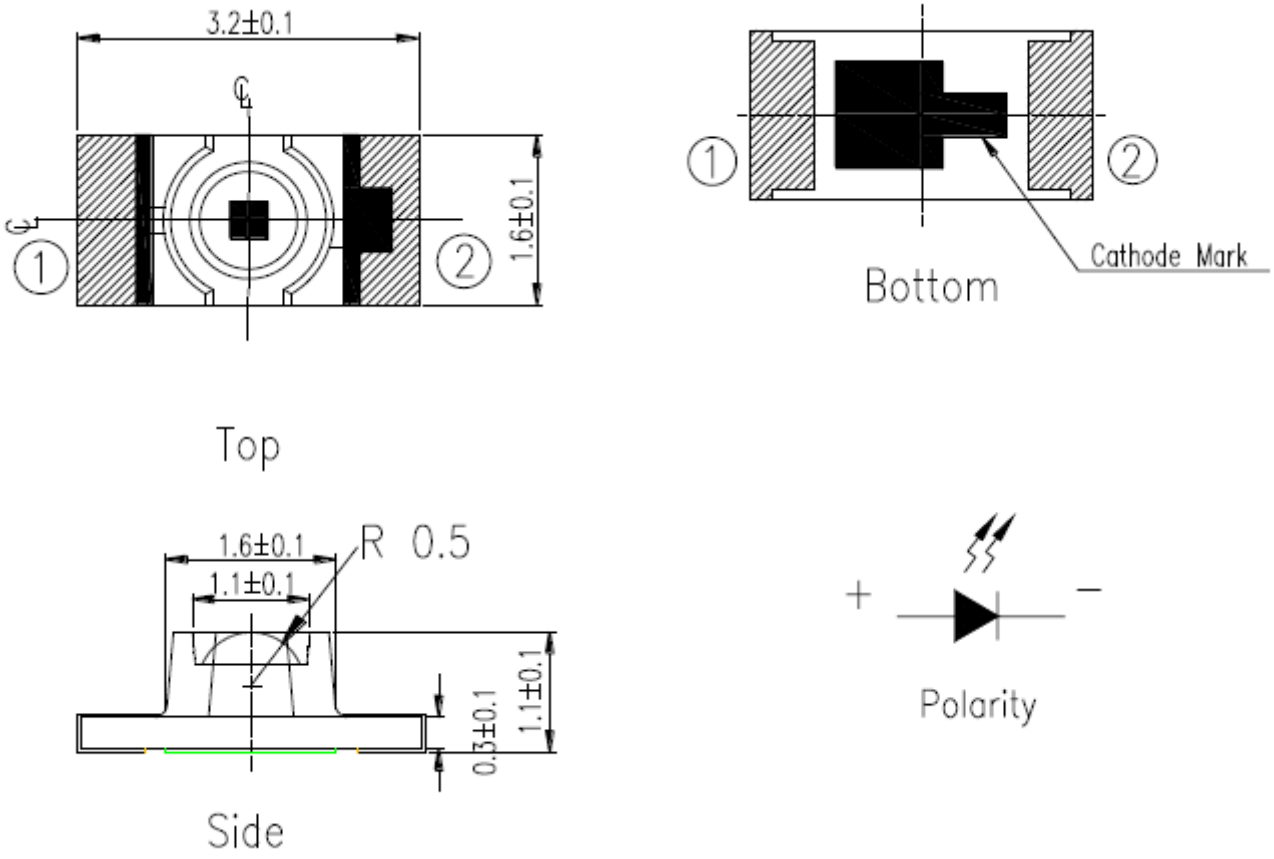
Applications:

1. Automotive : backlighting in dashboard and switch.
2. Telecommunication : indicator and backlighting in telephone and fax.
3. Flat backlight for LCD, switch and symbol
4. General use.

Device Selection Guide

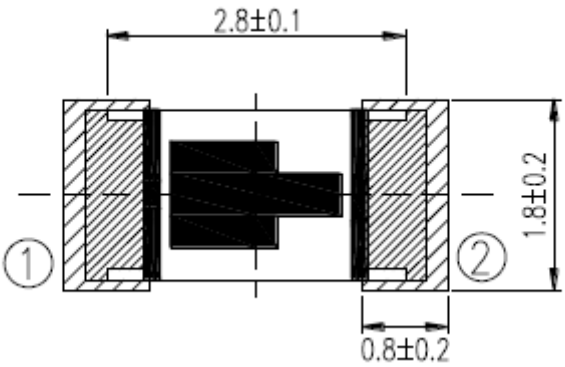
Part No.	Material	COLOR	
		Emitted	Lens
LG-1306DGM-CT-C	InGaN	Green	Water Clear

Package Outline Dimensions



Note : 1.All dimension are in millimeter tolerance is ±0.1mm unless otherwise noted.
2.Specifications are subject to change without notice.

Recommended Soldering Pad Dimensions



Note : The tolerances unless mentioned is ±0.1mm,Angle±0.5. Unit=mm.

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Ratings	UNIT
Power Dissipation	PD	95	mW
Peak pulse current Duty 1/10@1KHz	I_{FP}	100	mA
Forward Current Per Chip	I_F	25	mA
Reverse Current @5V	Ir	5	V
Electrostatic Discharge	ESD	150	V
Operating Temperature	T_{opr}	-40 ~ +85	°C
Storage Temperature	T_{stg}	-40 ~ +90	°C
Soldering Temperature	Tsol	Reflow Soldering : 260 ℃ for 10 sec. Hand Soldering : 350 ℃ for 3 sec.	

Typical Electrical & Optical Characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Luminous Intensity	IV	180	----	715	mcd	IF=20mA
Peak Wavelength	λp	----	518	----	nm	
Dominant Wavelength	λd	520	----	535	nm	
Spectrum Radiation	△λ	----	35	----	nm	
Forward Voltage	VF	----	3.5	4.3	V	
Viewing Angle	2θ1/2	----	60	----	Deg	
Reverse Current	Ir	----	----	50	μA	Vr=5V

Note : 1.The forward voltage data did not including ±0.1V testing tolerance.
2.The luminous intensity data did not including ±11% testing tolerance.

Luminous Intensity Classification

BIN CODE	IV (mcd) at 20mA	
	Min	Max
S	180	285
T	285	450
U	450	715

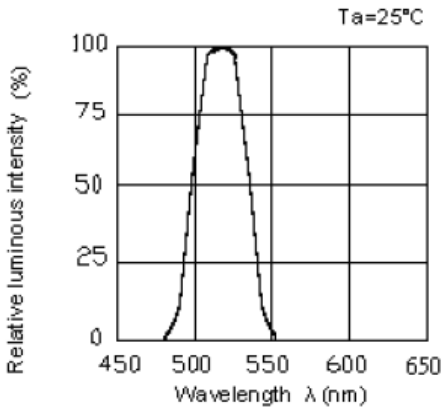
Dominant Wavelength Classification

Group	λ d (nm) at 5mA		
	BIN CODE	Min	Max
Y	X	520	525
	Y	525	530
	Z	530	535

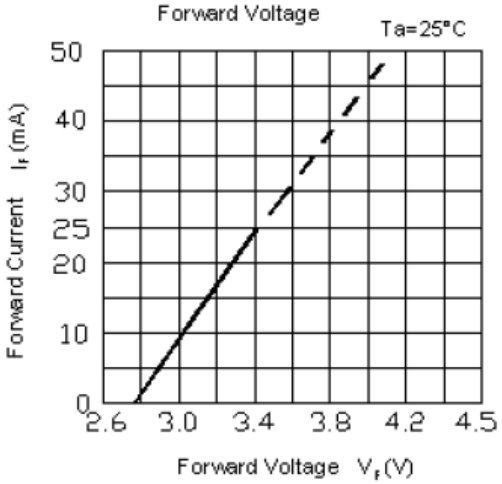
Note:
1. Tolerance of Luminous Intensity ±11%
2. Tolerance of The Dominant Wavelength ±1nm

Typical Electro-Optical Characteristics Curve

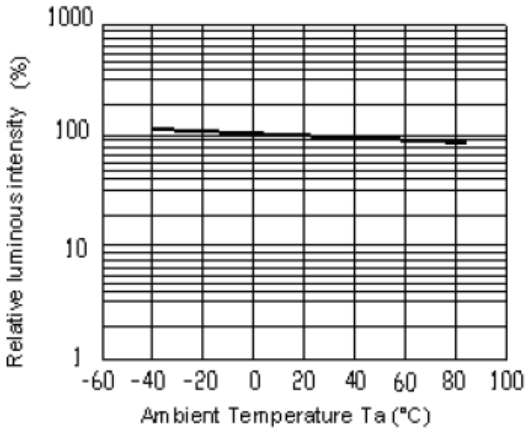
Spectrum Distribution



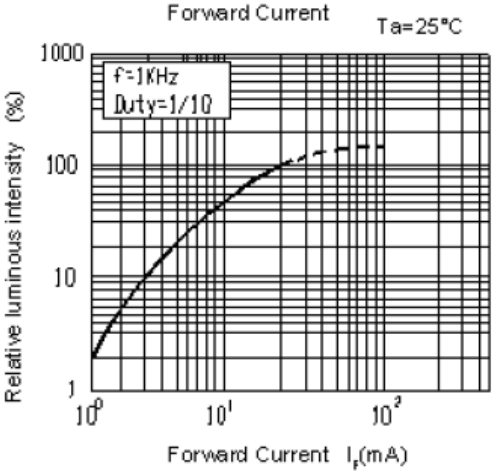
Forward Current vs. Forward Voltage



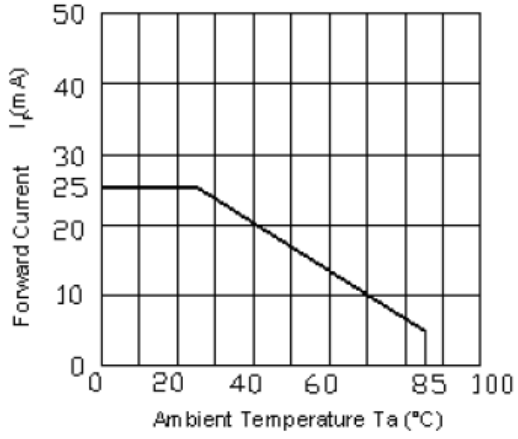
Luminous Intensity vs. Ambient Temperature



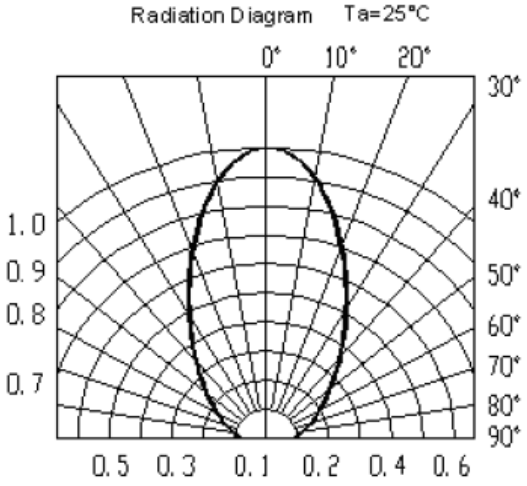
Luminous Intensity vs Forward Current



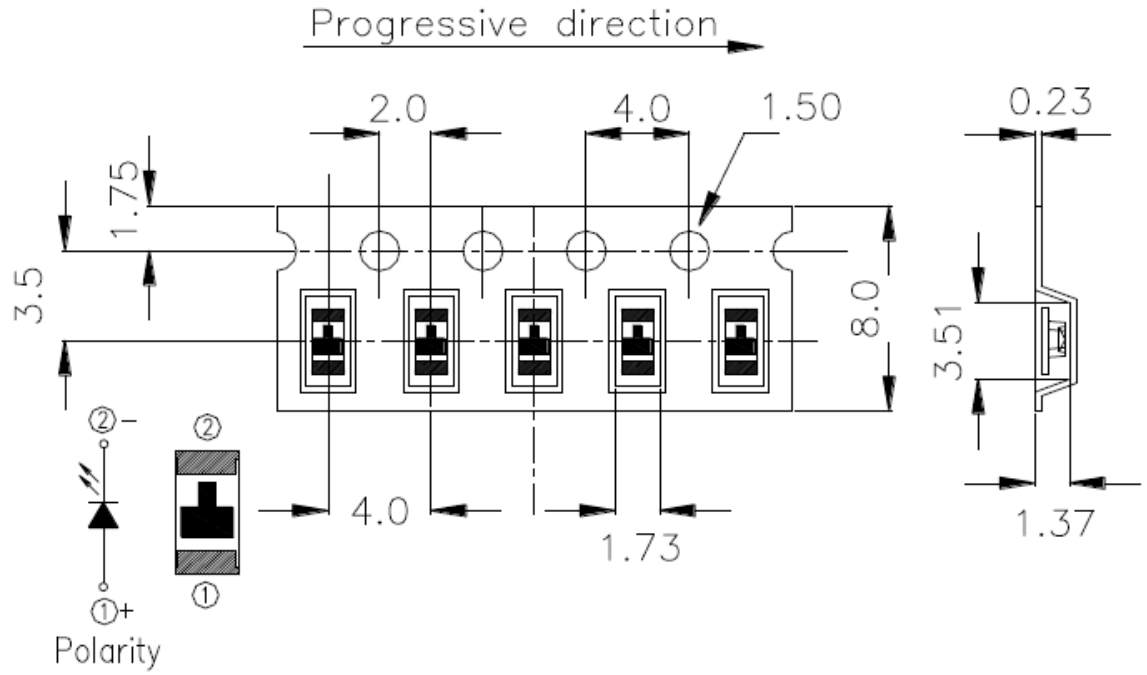
Forward Current Derating Curve



Radiation Diagram Ta=25°C

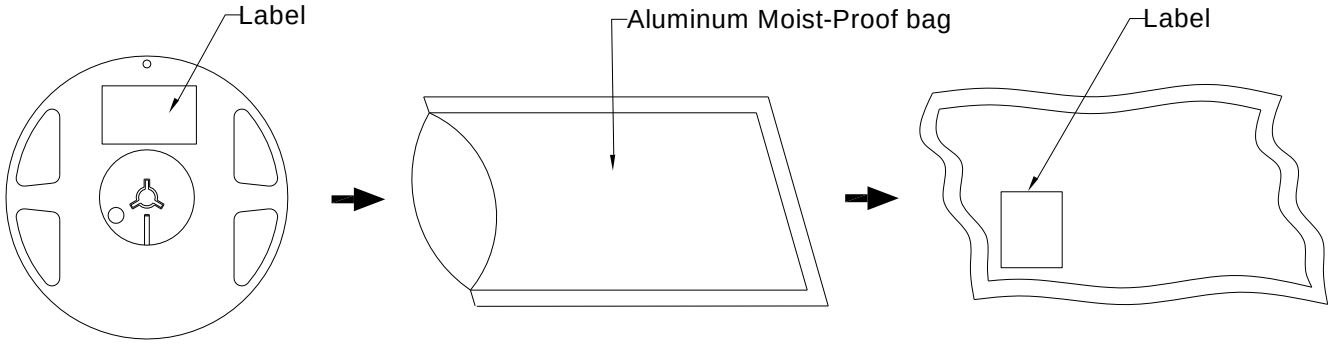


Carrier Tape Dimensions



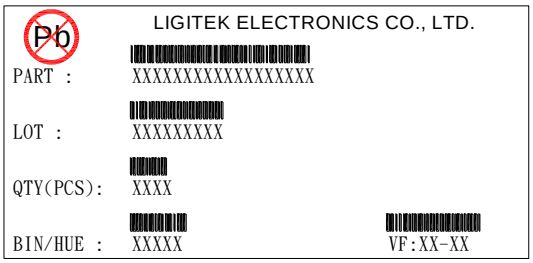
Note : The tolerances unless mentioned is ±0.1mm,Angle± 0.5. Unit=mm.

Packing Specifications



Part No.	Description	Quantity/Reel
LG-1306DGM-CT-C	8.0mm tape,7"reel	3000 devices

Label Explanation

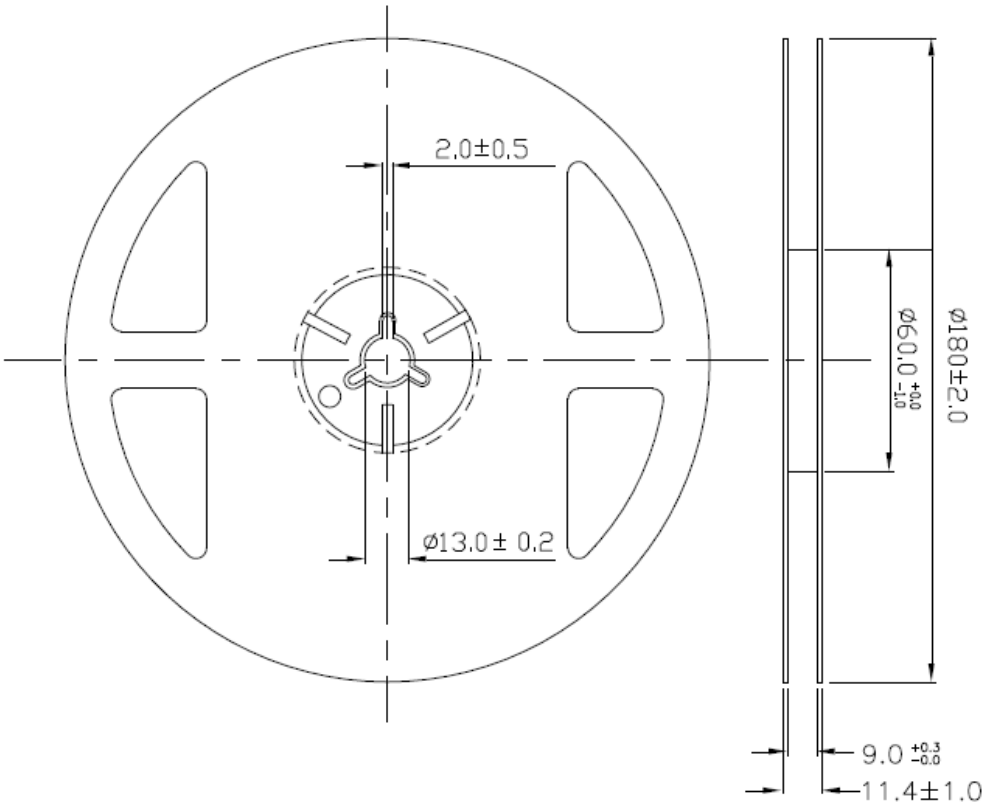


BIN : Luminous Intensity

HUE : Dominant Wavelength

VF: Forward Voltage

Reel Dimensions



Precautions For Use:

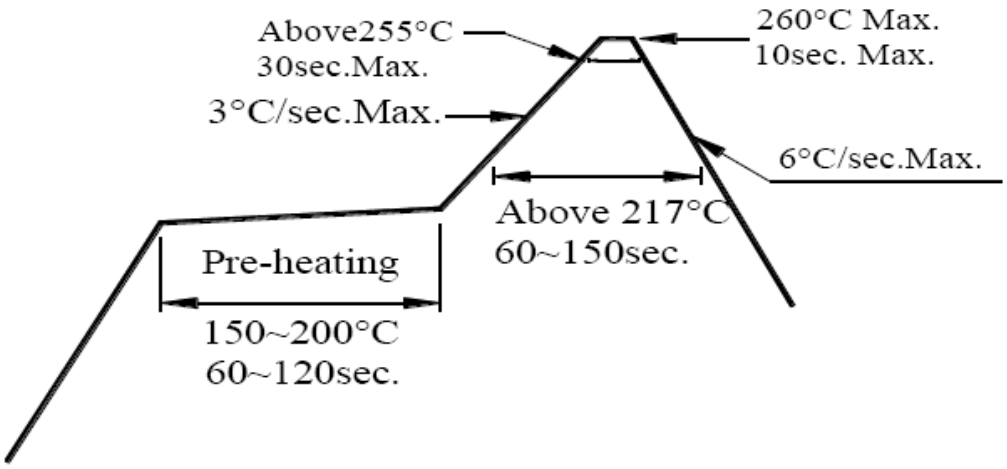
Storage time

1. Calculated shelf life before opening is 18 months at < 30°C and < 90% relative humidity (RH)
2. After bag is opened, devices which will be subjected to reflow soldering or other high temperature processes must be a) Assembled within one years in an environment of ≦ 30˚C / 60% RH, or b) Stored at ambient of 10% RH or less
3. Devices are required baking before assembly if: a) Humidity Indicator Card reads >10% (for level 2a -5a) or >60% (for level 2) at ambient temperature 23±5˚C b) 2.a) or 2.b) doesn't meet
4. If baking is required, devices should be baked for >72 hours at 60±5°C/ 5% RH. Performing baking only once, and using the baked devices within 72 hours..

Over current- protection

The LEDs is sensitive parts, slight voltage shift will cause big change and will cause burn out. Customer must apply resistors for protection.

LED soldering

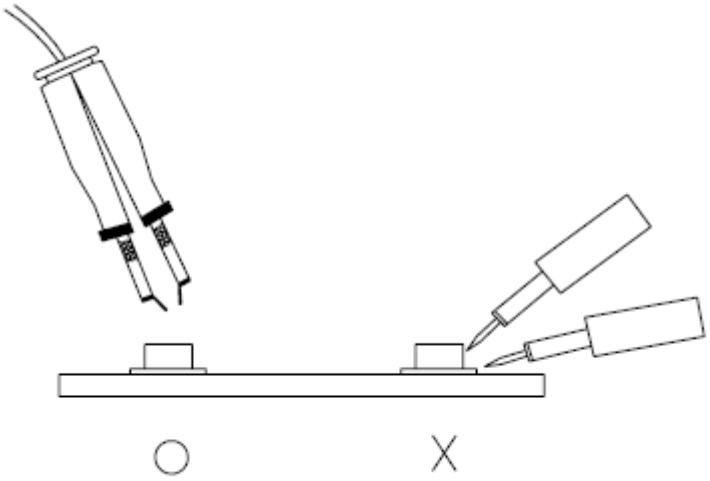


Note:

1. Reflow soldering should not be done more than two times.
2. When soldering, do not put stress on the LEDs during heating.
3. After soldering, do not warp the circuit board.

Repairing

In principle repair should not be done after the LEDs have been soldered. When repairing is unavoidable, it should be confirmed before hand not to be damaged whether the characteristics of the LEDs by repairing and a double-head soldering iron should be used (as below description figure).



Reliability Test:

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	Temperature Cycle	H : +100℃ 15min ∫ 5 min L : -40℃ 15min	300 Cycles	22 PCS	0/1
2	Thermal Shock	H : +100℃ 5min ∫ 10sec L : -10℃ 15min	300 Cycles	22 PCS	0/1
3	High Temperature Storage	Temp. : 100℃	1000 Hrs.	22 PCS	0/1
4	High Temperature /High Humidity	85℃/ 85%RH	1000 Hrs.	22 PCS	0/1
5	Low Temperature Storage	Temp. : -40℃	1000 Hrs.	22 PCS	0/1
6	Reflow Soldering	Temp. : 260℃±5℃ Min. 5sec.	6 Min.	22pcs	0/1
7	DC Operating Life	IF = 20 mA	1000 Hrs.	22 PCS	0/1