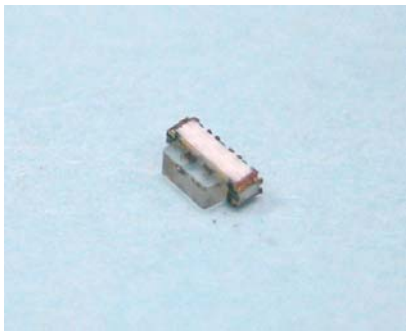
Technical Data Sheet

Right Angle Lens Chip LEDs with Bi-Color (Multi-Color)

17-223/R7GHC-D01/3C



Features

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

Descriptions

- The 17-223 SMD LED 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.
- Besides, lightweight makes them ideal for miniature applications. etc.

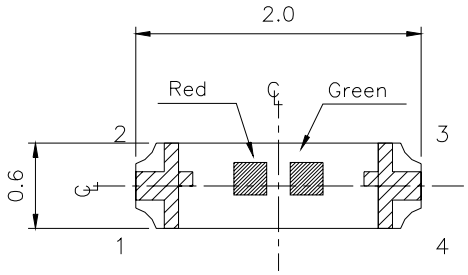
Applications

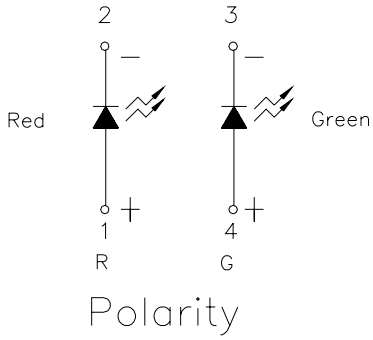
- Backlighting in dashboard and switch.
- Telecommunication: indicator and backlighting in telephone and fax.
- Flat backlight for LCD, switch and symbol.
- General use.

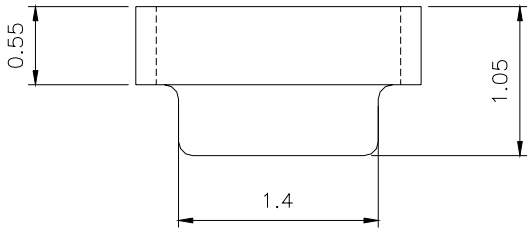
Device Selection Guide

Chip		Emitted Color	Resin Color
Type	Material		
R7	AlGaInP	Dark Red	Water Clear
GH	InGaN	Brilliant Green	

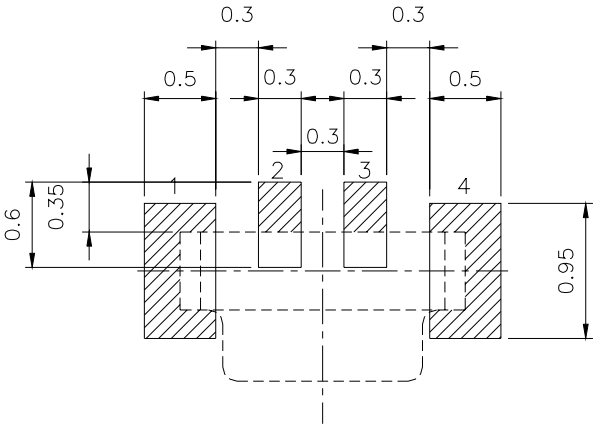
Package Outline Dimensions

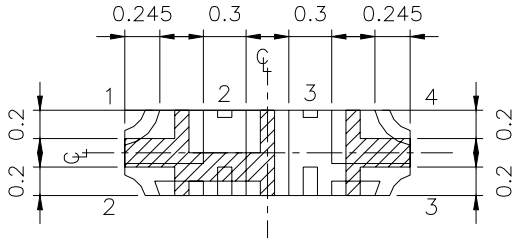






Recommend Soldering pad





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

Absolute Maximum Ratings (Ta=25℃)

Parameter	Symbol	Rating	Unit
Reverse Voltage	V_R	5	V
Forward Current	I_F	R7:25 GH:25	mA
Peak Forward Current (Duty 1/10 @1KHz)	I_{FP}	R7:60 GH:100	mA
Power Dissipation	Pd	R7:60 GH:95	mW
Electrostatic Discharge (HBM)	ESD	R7:2000 GH:150	V
Operating Temperature	Topr	-40 ~ +85	℃
Storage Temperature	Tstg	-40 ~ +90	℃
Soldering Temperature	Tsol	Reflow Soldering : 260 ℃ for 10 sec. Hand Soldering : 350 ℃ for 3 sec.	

17-223/R7GHC-D01/3C

Electro-Optical Characteristics (Ta=25℃)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Luminous Intensity	R7 Iv	3.6	-----	9.0	mcd	IF=2mA
	GH	36.0	-----	72.0		
Viewing Angle	2θ 1/2	-----	130	-----	deg	
Peak Wavelength	R7 λp	-----	639	-----	nm	
	GH		518			
Dominant Wavelength	R7 λd	-----	631	-----	nm	
	GH	520	-----	535		
Spectrum Radiation Bandwidth	R7 △ λ	-----	20	-----	nm	
	GH		35			
Forward Voltage	R7 VF	1.6	-----	2.0	V	
	GH	2.55		3.0		
Reverse Current	R7 IR	-----	-----	10	μA	VR=5V
	GH			50		

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

R7

Bin	Min	Max	Unit	Condition
H2	3.6	4.5	mcd	IF=2mA
J1	4.5	5.8		
J2	5.8	7.2		
K1	7.2	9.0		

GH

Bin	Min	Max	Unit	Condition
N2	36.0	45.0	mcd	IF=2mA
P1	45.0	57.0		
P2	57.0	72.0		

Bin Range Of Dom. Wavelength

GH

Bin	Min	Max	Unit	Condition
1	520	525	nm	IF=2mA
2	525	530		
3	530	535		

Bin Range Of Forward Voltage

R7

Bin	Min	Max	Unit	Condition
1	1.6	1.8	V	IF=2mA
2	1.8	2.0		

GH

Bin	Min	Max	Unit	Condition
1	2.55	2.70	V	IF=2mA
2	2.70	2.85		
3	2.85	3.00		

Notes:

1.Tolerance of Luminous Intensity ±11%

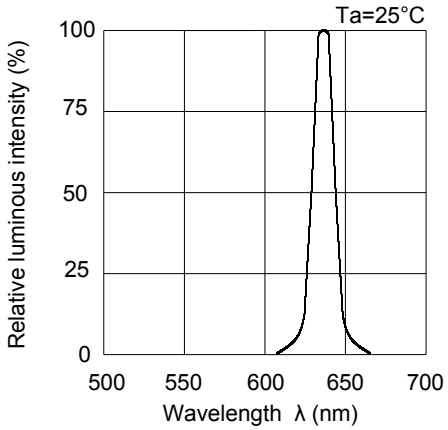
2.Tolerance of Dominant Wavelength ±1nm

3.Tolerance of Forward Voltage ±0.1V

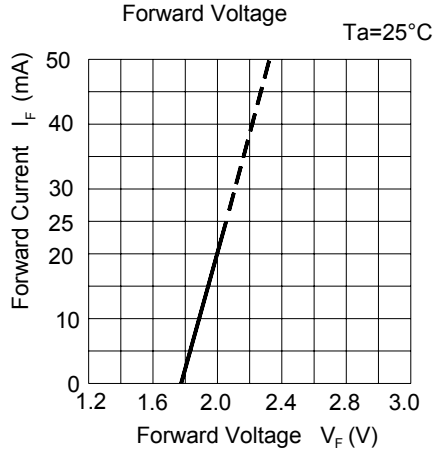
Typical Electro-Optical Characteristics Curves

R7

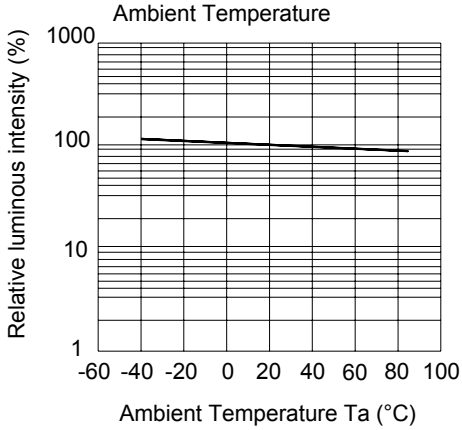
Spectrum Distribution



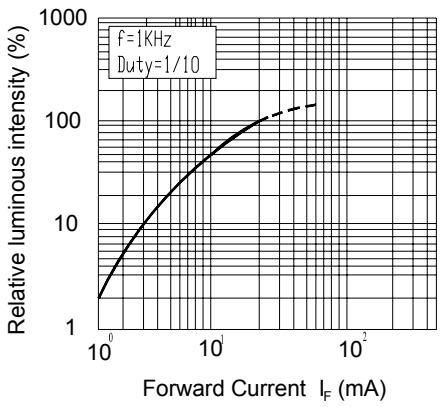
Forward Current vs. Forward Voltage



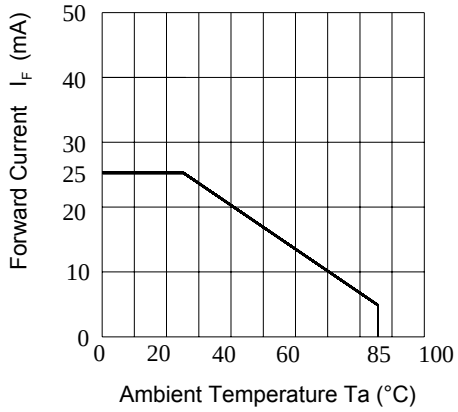
Luminous Intensity vs. Ambient Temperature



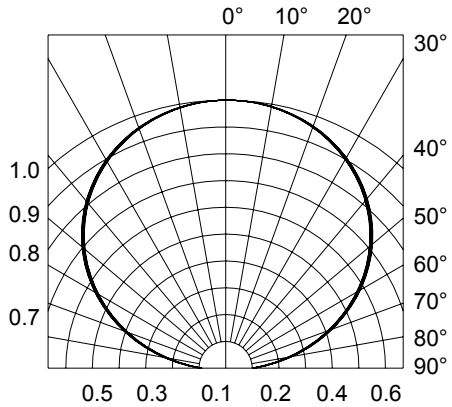
Luminous Intensity vs. Forward Current



Forward Current Derating Curve

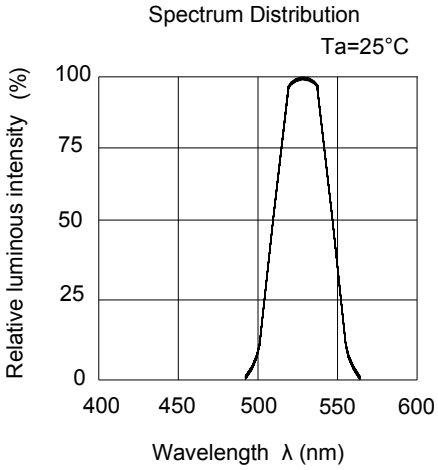


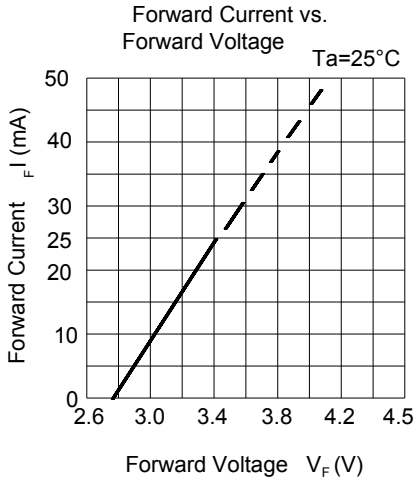
Radiation Diagram

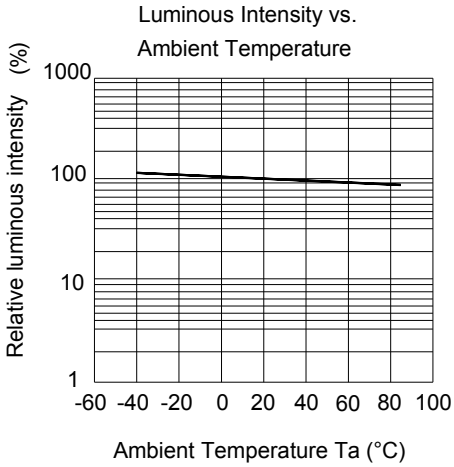


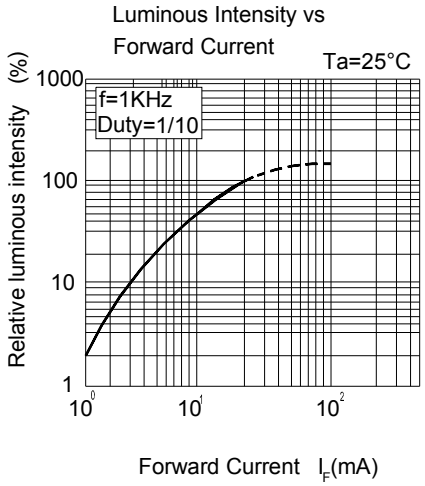
Typical Electro-Optical Characteristics Curves

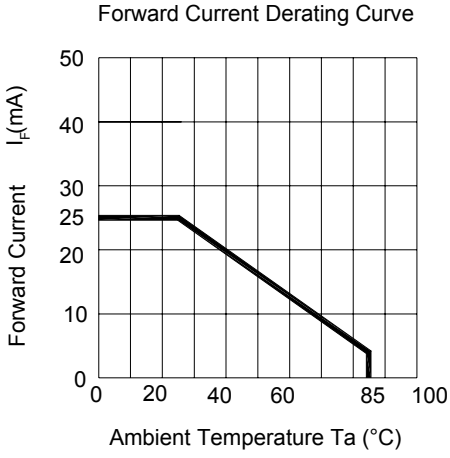
GH

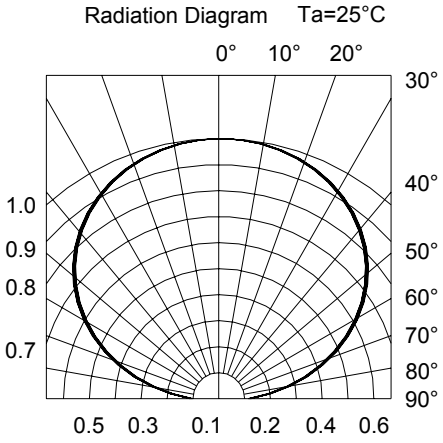












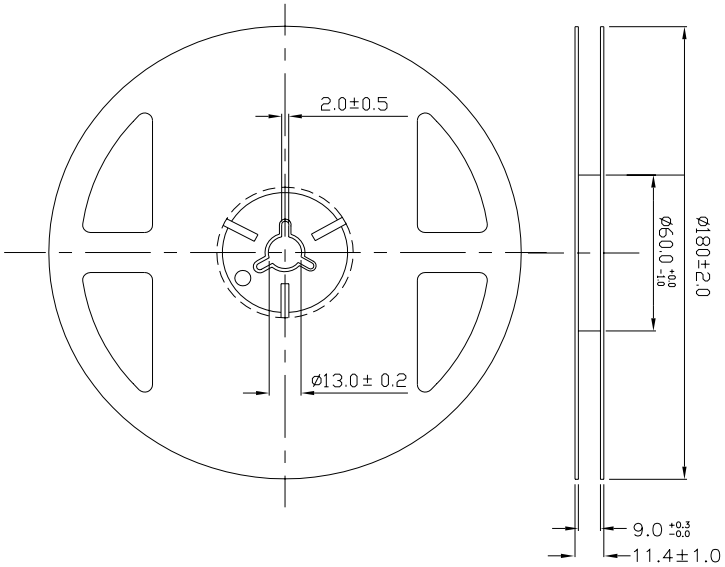
Label explanation

CAT: Luminous Intensity Rank

HUE: Dom. Wavelength Rank

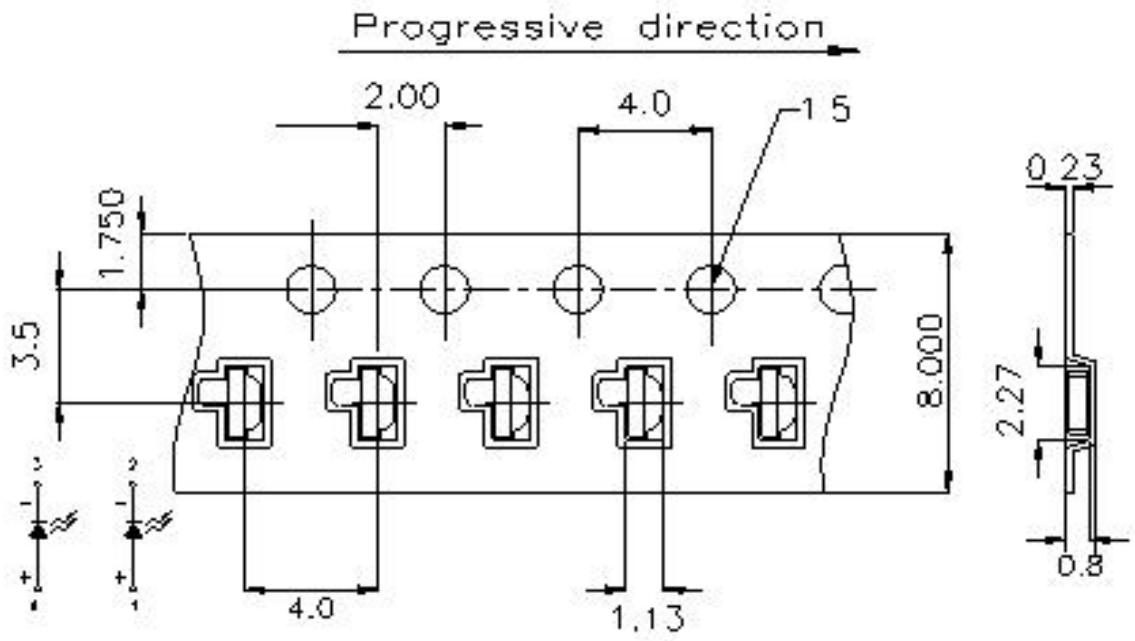
REF: Forward Voltage Rank

Reel Dimensions



Note: The tolerance unless mentioned is ±0.1mm,unit is mm.

Carrier Tape Dimensions: Loaded quantity 3000 PCS per reel



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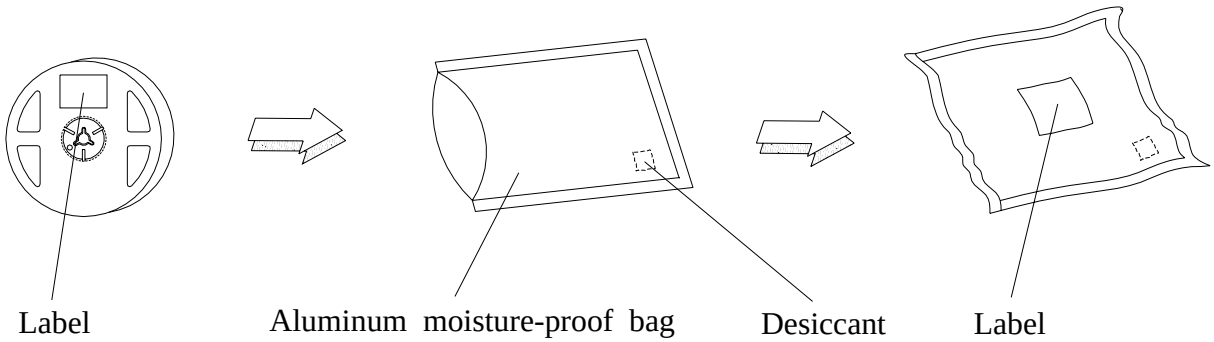
Moisture Resistant Packaging



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.

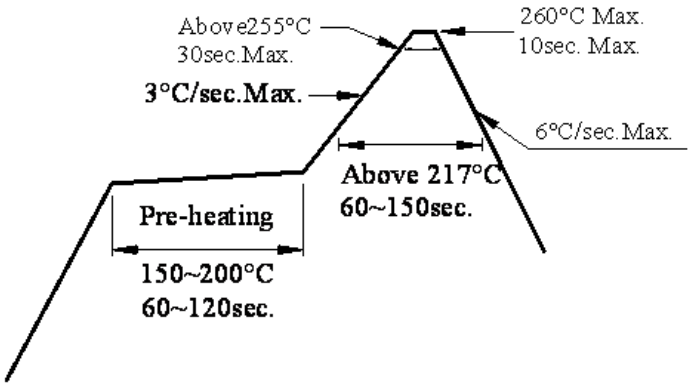
2.2 Before opening the package: The LEDs should be kept at 30℃ or less and 90%RH or less.

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.

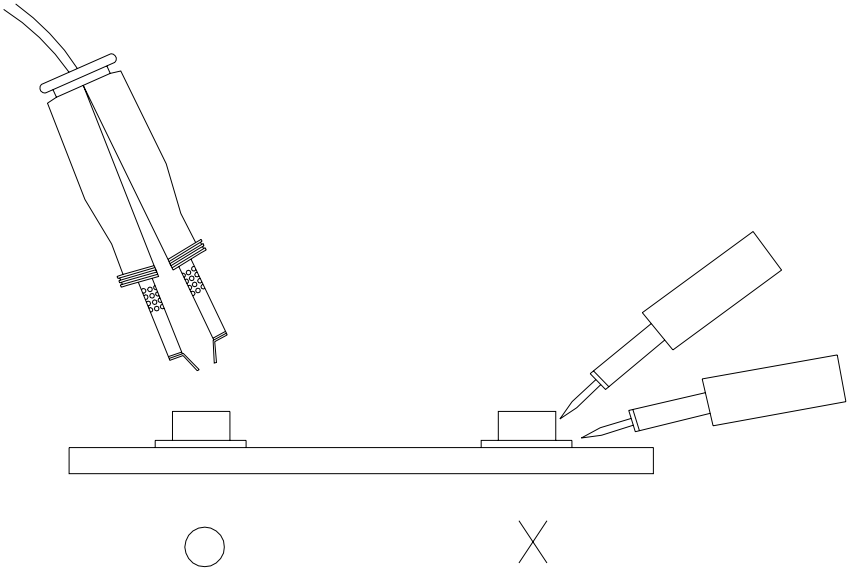
3.4 After soldering, do not warp the circuit board.

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.



EVERLIGHT ELECTRONICS CO., LTD.
Office: No 25, Lane 76, Sec 3, Chung Yang Rd,
Tucheng, Taipei 236, Taiwan, R.O.C

Tel: 886-2-2267-2000, 2267-9936
Fax: 886-2267-6244, 2267-6189, 2267-6306
http://www.everlight.com