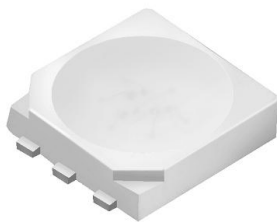


SMD-Luminosity Full Color LEDs EAPL32328RGBA1



Features

- Colorless clear resin.
- 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.
- Precondition: Bases on JEDEC J-STD 020D Level 3
- Compliance Halogen Free .(Br<900ppm,Cl<900ppm,Br+Cl<1500ppm)

Description

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

Chip Materials	Emitted Color	Resin Color
AlGaInP	Super-Red	Water Clear
InGaN	Brilliant Green	Water Clear
InGaN	Blue	Water Clear

Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Rating	Unit	
Reverse Voltage	V _R	RQ	12	V
		GC/BJ	5	
Forward Current	I _F	RQ	50	mA
		GC/BJ	30	
Peak Forward Current (Duty 1/10 @1KHz)	I _{FP}	100	mA	
Power Dissipation	Pd	RQ	120	mW
		GC/BJ	110	
Junction Temperature	T _j	125	°C	
Operating Temperature	T _{opr}	-40 ~ +100	°C	
Storage Temperature	T _{stg}	-40 ~ +110	°C	
Thermal Resistance	Rth _{J-A}	RQ	500	KW
		GC/BJ	600	
	Rth _{J-S}	RQ	300	
		GC/BJ	400	
ESD		RQ	2000	V
		GC/BJ	500	
Soldering Temperature	T _{sol}	Reflow Soldering : 260 °C for 30 sec. Hand Soldering : 350 °C for 3 sec.		

Electro-Optical Characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Luminous Intensity	RQ	450	-----	900	mcd	I _F =20mA
	GC	1120	-----	1800		
	BJ	225	-----	450		
Viewing Angle	2θ _{1/2}	-----	120	-----	deg	I _F =20mA
Peak Wavelength	RQ	-----	632	-----	nm	I _F =20mA
	GC	-----	518	-----		
	BJ	-----	468	-----		
Dominant Wavelength	RQ	617.5	-----	629.5	nm	I _F =20mA
	GC	525	-----	535		
	BJ	465	-----	475		
Spectrum Radiation Bandwidth	RQ	-----	20	-----	nm	I _F =20mA
	GC	-----	35	-----		
	BJ	-----	25	-----		
Forward Voltage	RQ	1.75	-----	2.75	V	I _F =20mA
	GC	2.75	-----	3.65		
	BJ	2.75	-----	3.65		
Reverse Current	RQ	-----	-----	10	μA	V _R =12V
	GC	-----	-----	10	μA	V _R =5V
	BJ	-----	-----	10	μA	V _R =5V

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

Chip	Bin Code	Min.	Max.	Unit	Condition
RQ	U1	450	560	mcd	$I_F = 20\text{mA}$
	U2	560	710		
	V1	710	900		
GC	AA	1120	1400		
	AB	1400	1800		
BJ	S2	225	285		
	T1	285	360		
	T2	360	450		

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

Bin Range of Dominant Wavelength

Chip	Bin Code	Min.	Max.	Unit	Condition
RQ	E4	617.5	621.5	nm	$I_F = 20\text{mA}$
	E5	621.5	625.5		
	E6	625.5	629.5		
GC	Y	525	530		
	Z	530	535		
BJ	X	465	470		
	Y	470	475		

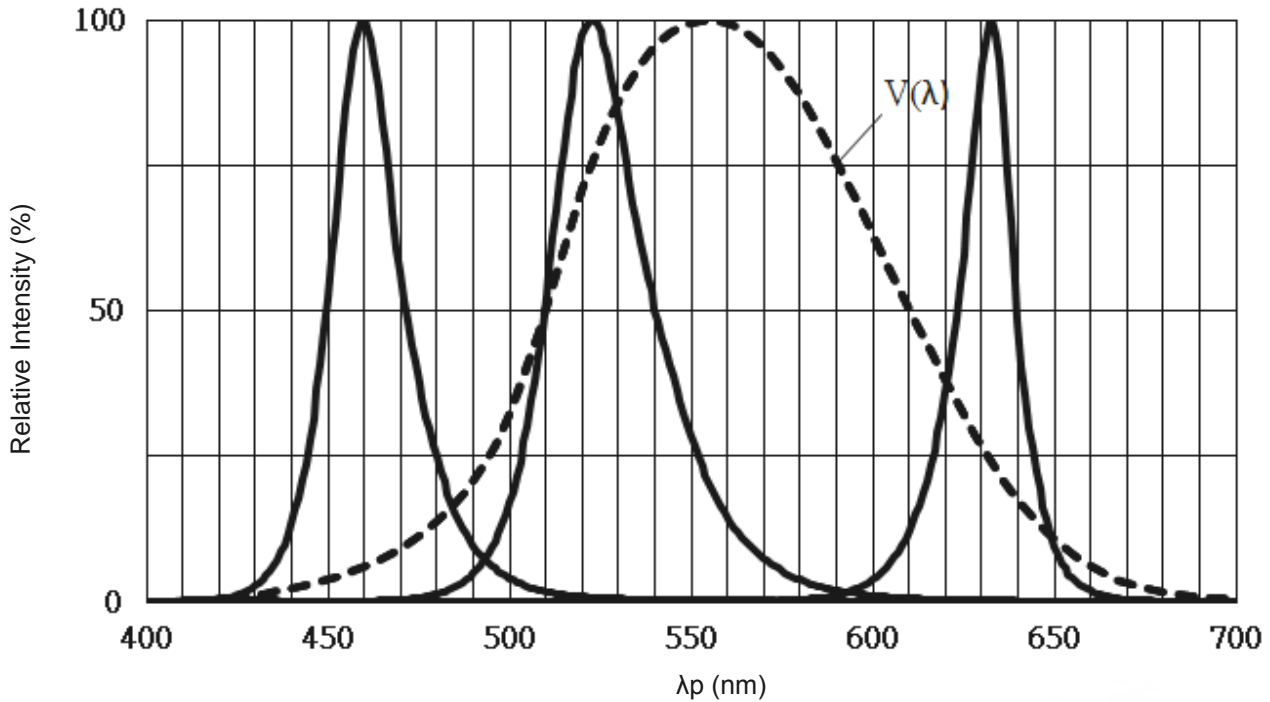
Note:
Tolerance of Dominant Wavelength: $\pm 1\text{nm}$

Bin Range of Forward Voltage

Chip	Bin Code	Min.	Max.	Unit	Condition
RQ	0	1.75	1.95	V	$I_F = 20\text{mA}$
	1	1.95	2.15		
	2	2.15	2.35		
	3	2.35	2.55		
	4	2.55	2.75		
GC	5	2.75	3.05		
	6	3.05	3.35		
	7	3.35	3.65		
BJ	5	2.75	3.05		
	6	3.05	3.35		
	7	3.35	3.65		

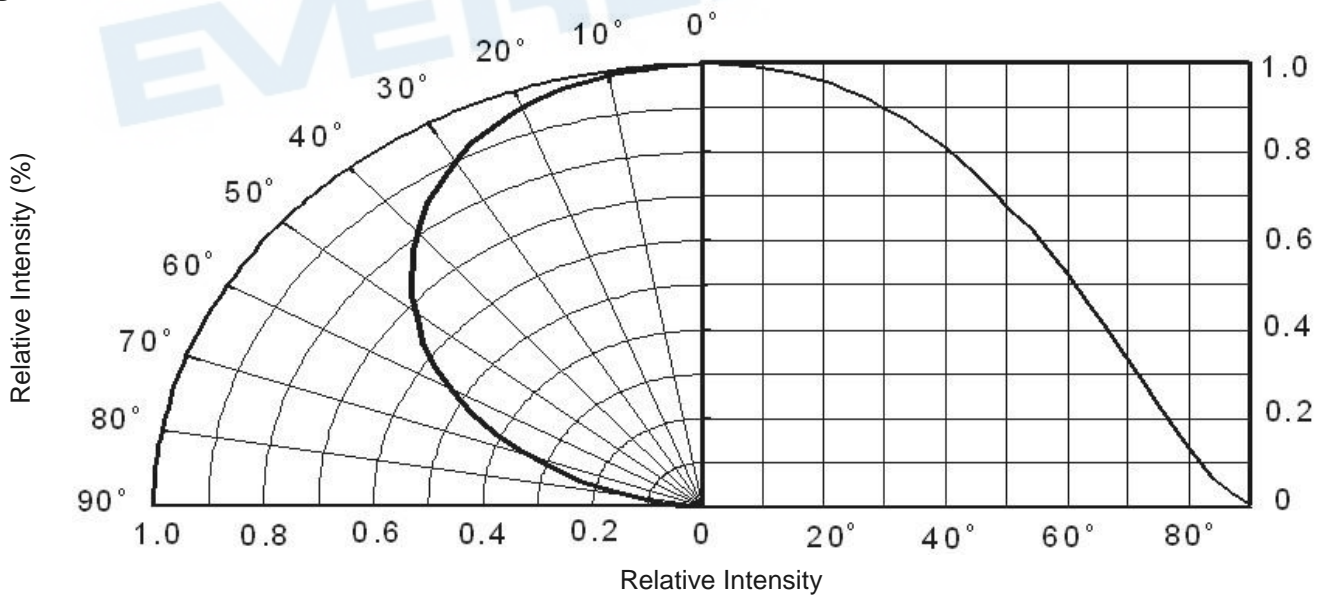
Note:
Tolerance of Forward Voltage: $\pm 0.1\text{V}$

Typical Electro-Optical Characteristics Curves
Typical Curve of Spectral Distribution

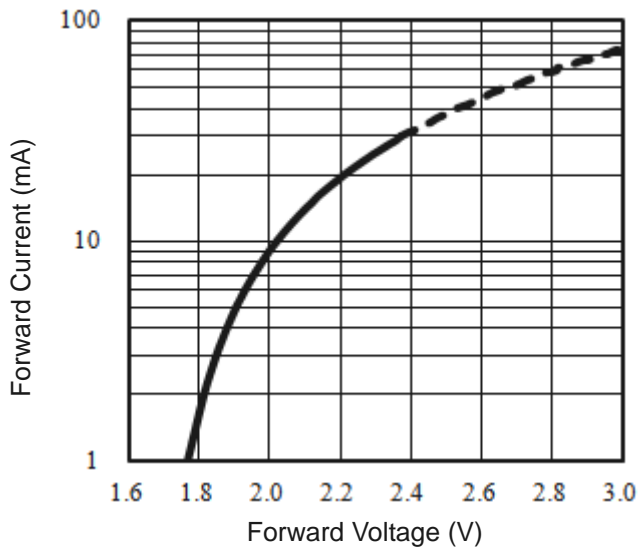


Note: $V(\lambda)$ =Standard eye response curve; $I_F = 20\text{mA}$

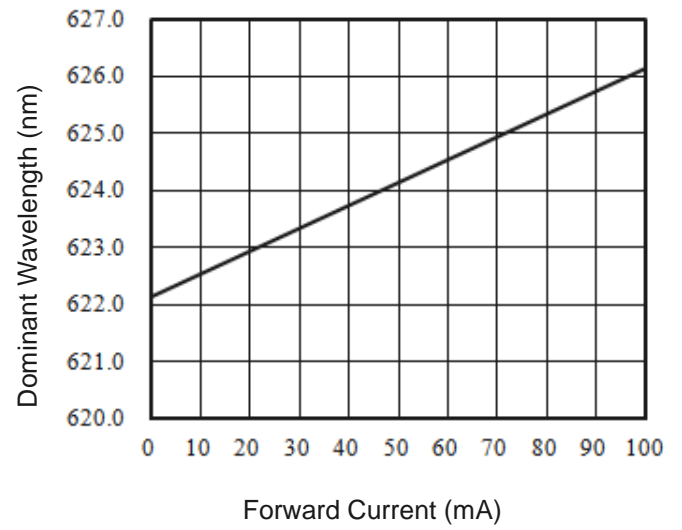
Diagram Characteristics of Radiation



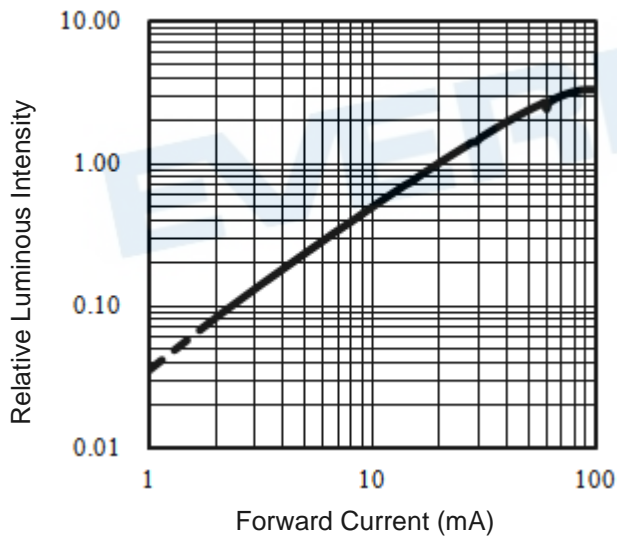
Forward Current vs. Forward Voltage (Ta=25°C)



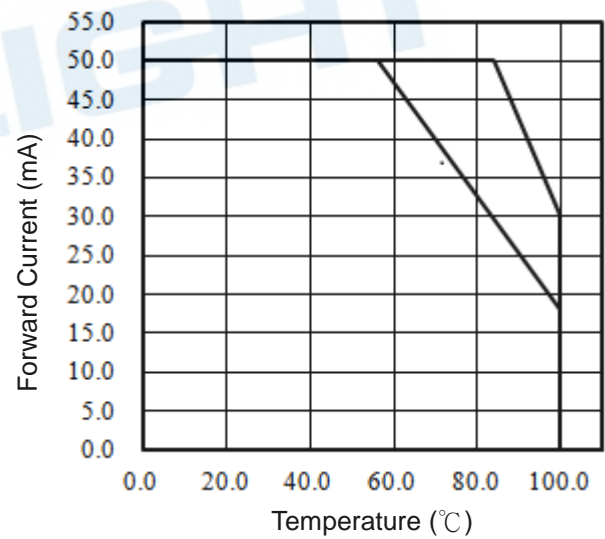
Dominant Wavelength vs. Forward Current (Ta=25°C)



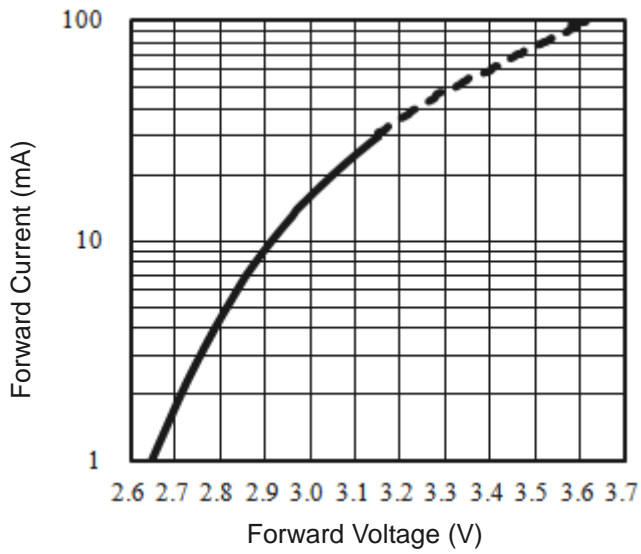
Relative Luminous Intensity vs. Forward Current (Ta=25°C)



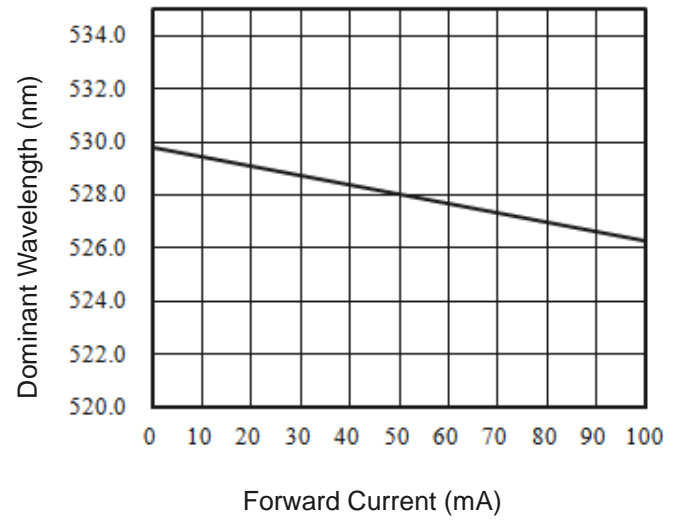
Max. Permissible Forwarded Current (Ta=25°C)



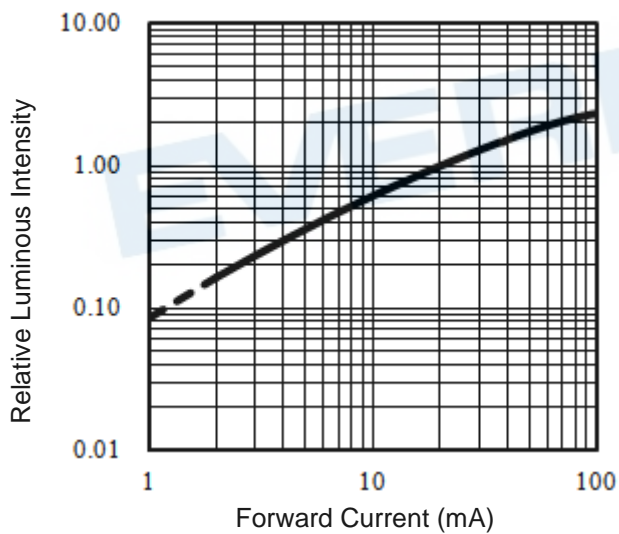
Forward Current vs. Forward Voltage (Ta=25°C)



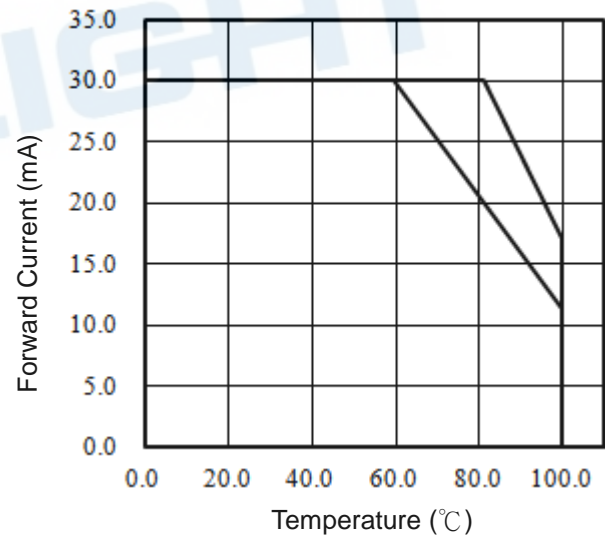
Dominant Wavelength vs. Forward Current (Ta=25°C)



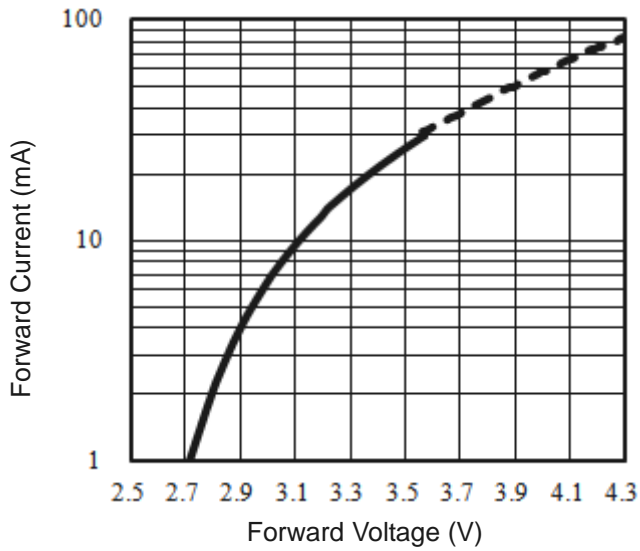
Relative Luminous Intensity vs. Forward Current (Ta=25°C)



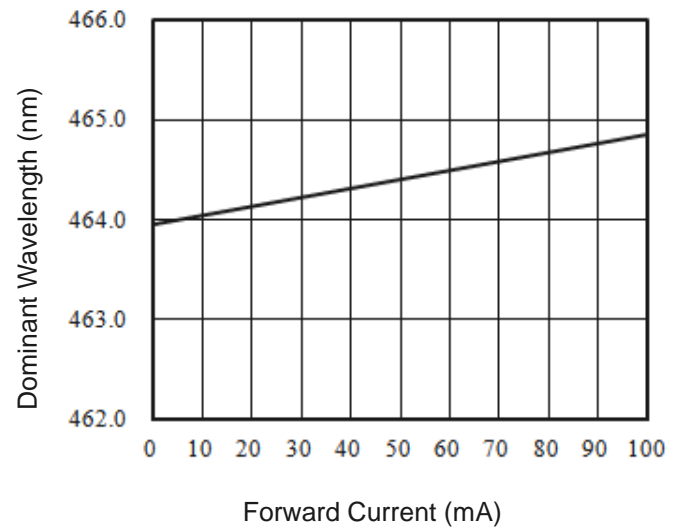
Max. Permissible Forwarded Current (Ta=25°C)



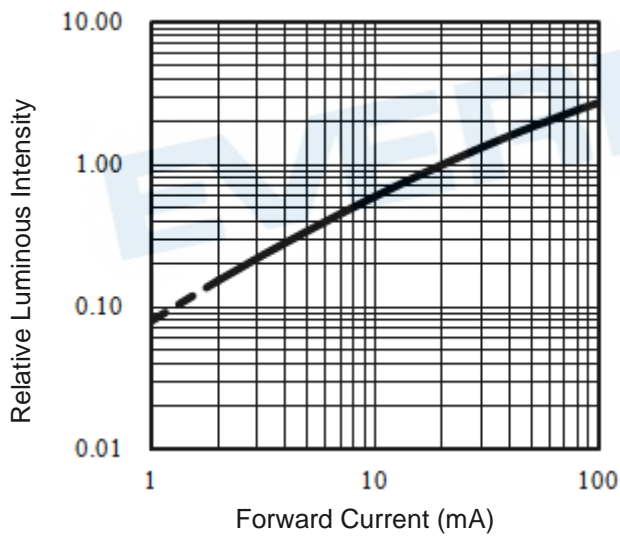
Forward Current vs. Forward Voltage (Ta=25°C)



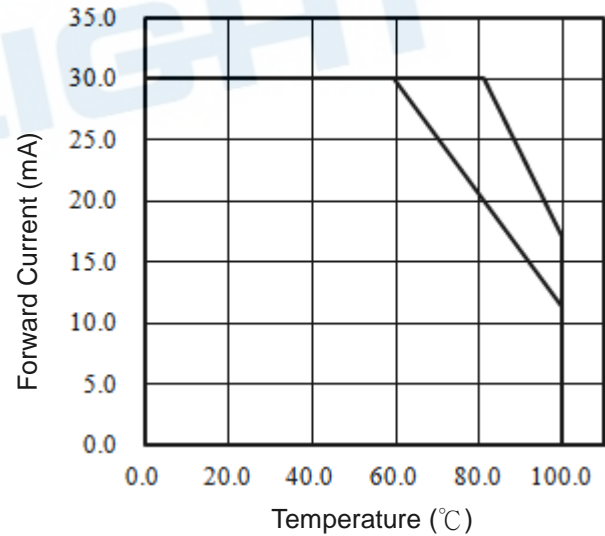
Dominant Wavelength vs. Forward Current (Ta=25°C)



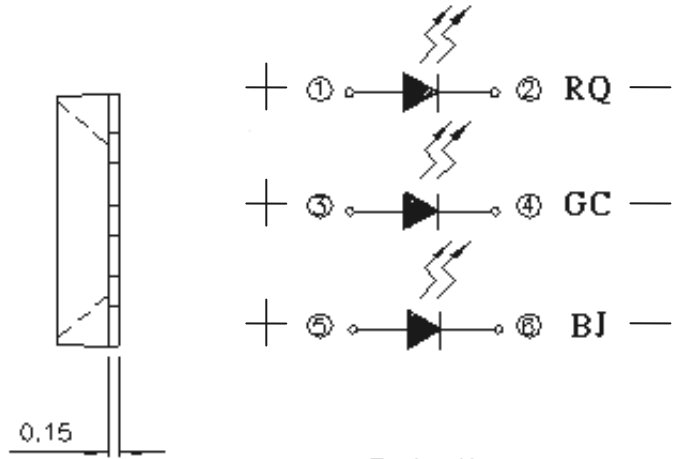
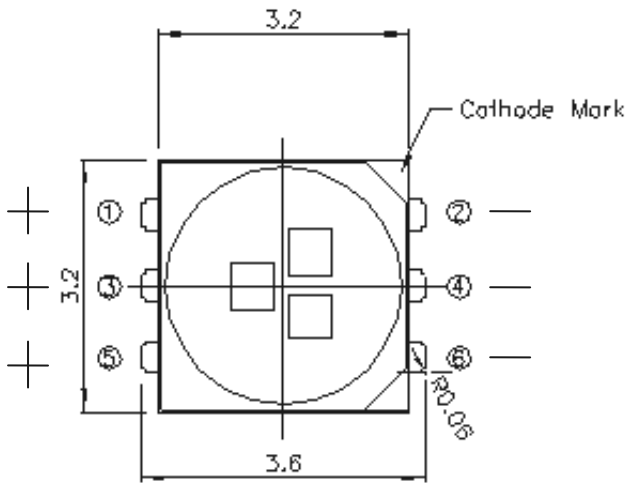
Relative Luminous Intensity vs. Forward Current (Ta=25°C)



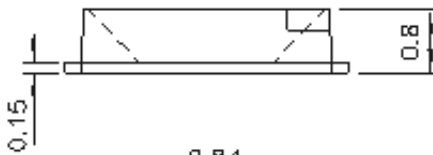
Max. Permissible Forwarded Current (Ta=25°C)



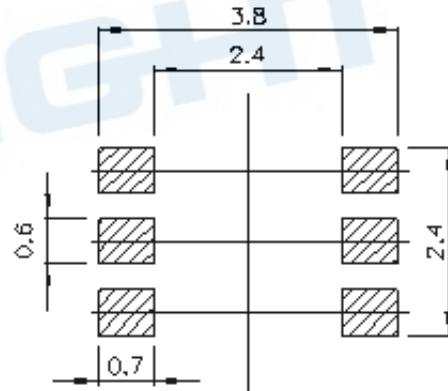
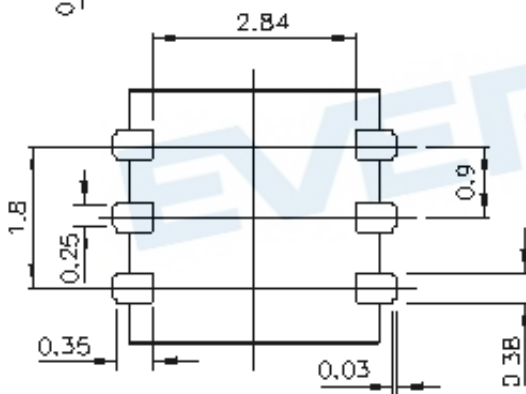
Package Dimension



Polarity



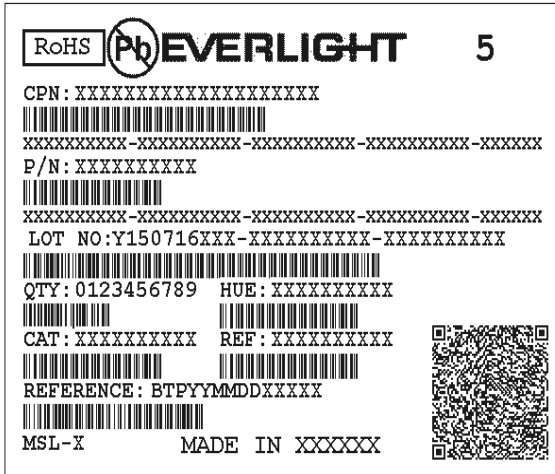
Recommended soldering pad design



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

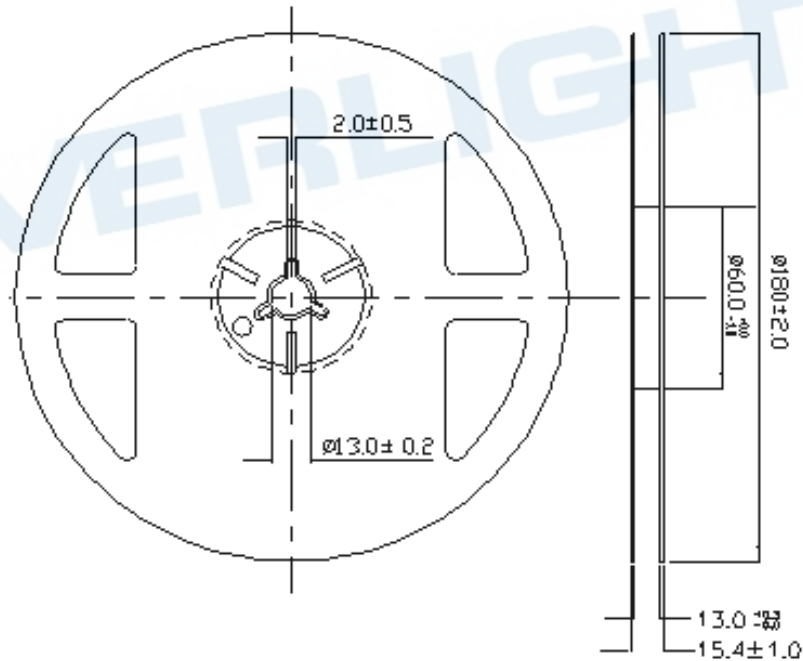
Moisture Resistant Packing Materials

Label Explanation

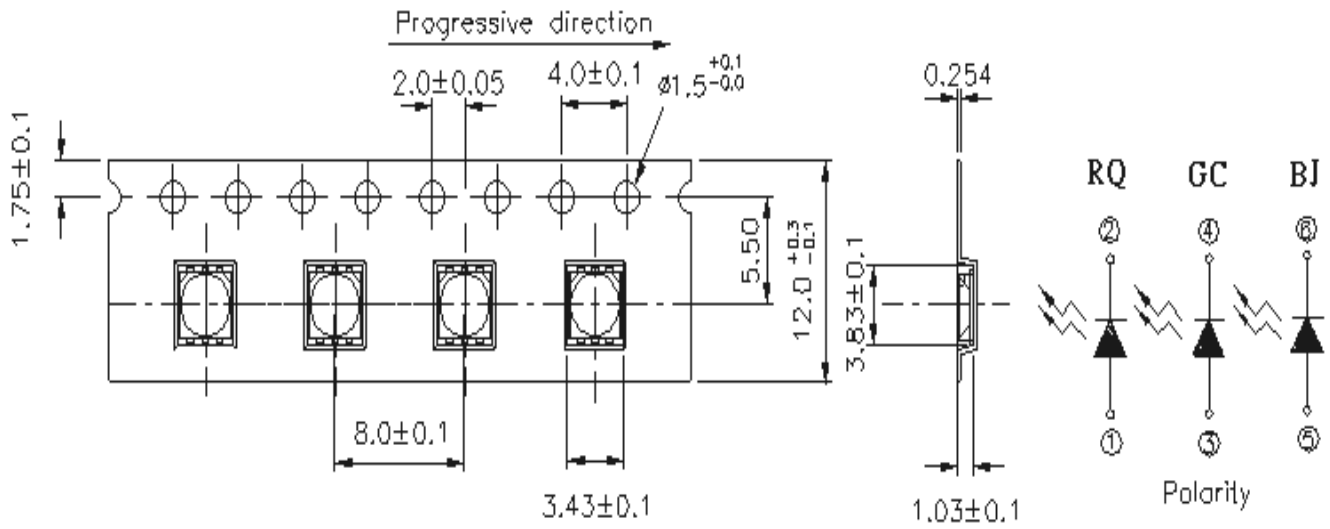


- CPN: Customer's Product Number
- P/N: Product Number
- QTY: Packing Quantity
- CAT: Luminous Intensity Rank
- HUE: Dom. Wavelength Rank
- REF: Forward Voltage Rank
- LOT No: Lot Number

Reel Dimensions

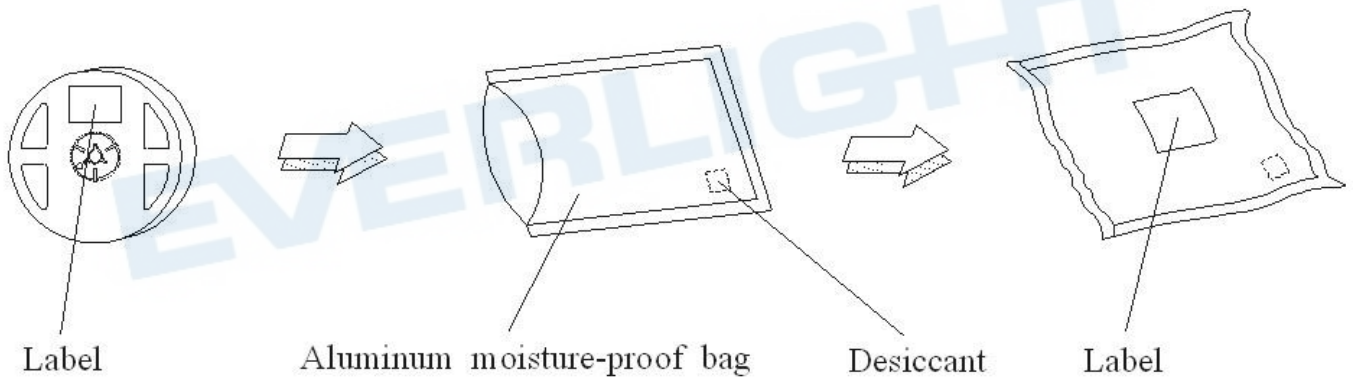


Carrier Tape Dimensions: Loaded Quantity 2000 pcs Per Reel



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

Moisture Resistant Packing Process

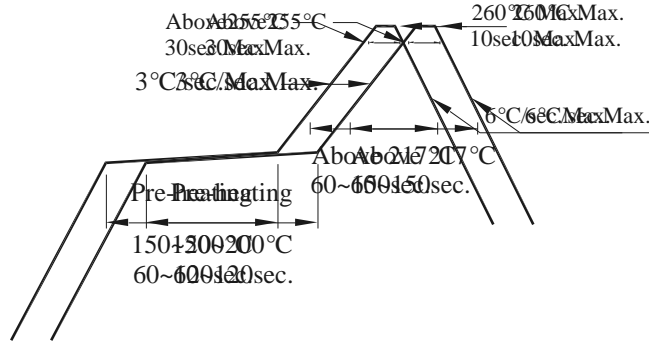


Note: Tolerances unless mentioned ± 0.1 mm. Unit = mm

Precautions for Use

1. Overcurrent proof

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



2. Storage

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

2.2 Environment should be less than 30°C and 60% RH when moisture proof bags is opened.

2.3 Before opening the package, MSB condition is stated page of this spec should not be exceeded.

2.4 If the moisture sensitivity card indicates high bath acceptable moisture, the components should be baked at minimum 60 deg 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 stress the LED during heating.

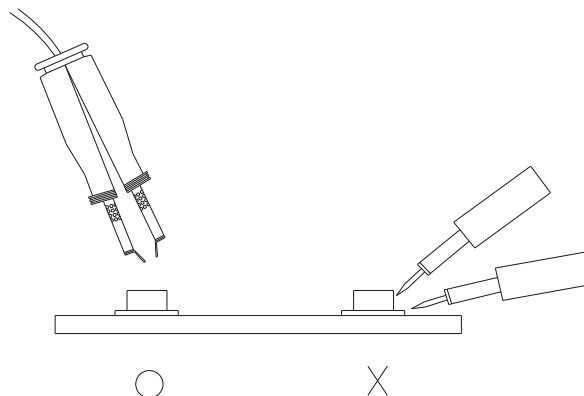
3.4 After soldering, do not warp the circuit board.

4. Soldering Iron

Each terminal is to go to the tip of soldering iron temperature less than 350°C for 3 seconds within one less than the soldering iron capacity 25W. Leave 2 seconds as more intervals, as add soldering iron of each terminal. Be careful because the damage to the product is started at the time of the hot solder.

5. Repairing

Repair should not be done after the LED have been soldered. When repairing is unavoidable, double lead soldering iron should be used as (as below figure) should be confirmed before and whether the characteristics of the LED 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.
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