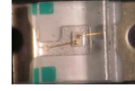


Feature

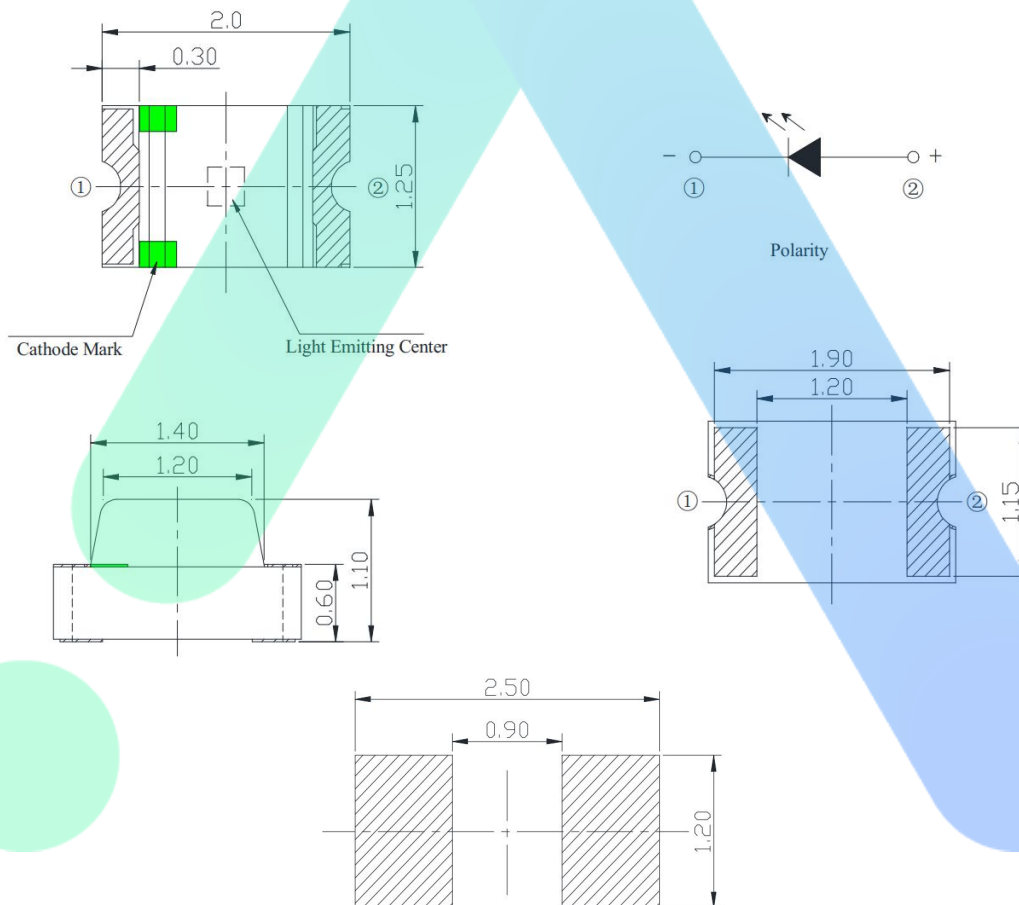
- Material: InGaN
- Emitting Color: Green
- Soldering methods: Pb-Free reflow solder
- High Luminous Intensity, Low Power Dissipation, Good Reliability and Long Lifespan
- Complied With ROHS Directive





Applications

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

Package Dimension



Recommended Soldering Pad

Cuprum Area:	
Solder Resist:	
* The Tolerances Unless Mentioned is : X. X \pm 0.1, X. XX \pm 0.05, Unit= mm*	

Note:

Nick Mark, All dimensions in mm. Tolerances unless mentioned is ± 0.1 mm.

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Rating	Units
Forward Current	I_F	20	mA
Reverse Voltage	V_R	5	V
Power Dissipation	P_D	72	mW
Operating Temperature	T_{opr}	-30~+85	°C
Storage Temperature	T_{stg}	-40~+100	°C
Peak Forward Current ^[1]	I_{FP}	50	mA

Note:

1. 1/10 Duty cycle, 0.1ms pulse width.

Electrical-Optical Characteristics at Ta=25°C

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Luminous intensity	I_V	200	330	-	mcd	IF=20mA
Viewing Angle	$2\theta_{1/2}$	-	130	-	deg	
Peak Wavelength	λ_P	-	525	-	nm	
Dominant Wavelength	λ_D	515	-	535	nm	
Spectrum Radiation Bandwidth	$\Delta\lambda$	-	-	24	nm	
Forward Voltage	V_F	2.6	3.2	3.6	V	VR=5V
Reverse Current	I_R	-	10	-	μA	

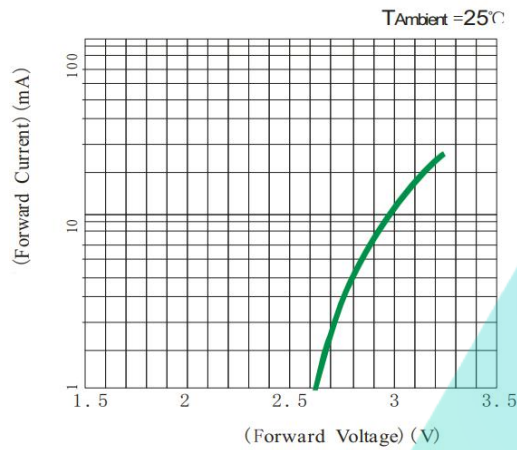
Notes:

1. Tolerance of Luminous Intensity $\pm 15\%$

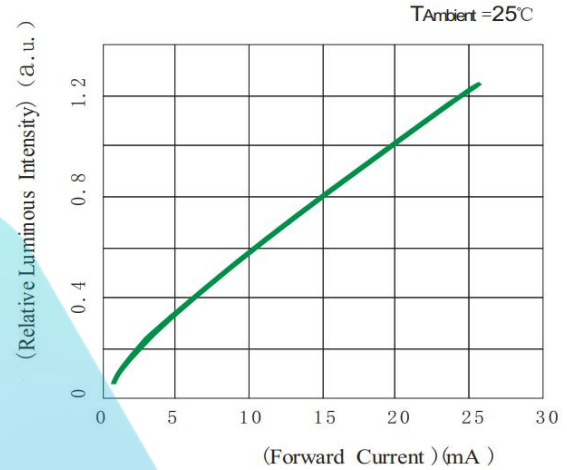
2. Tolerance of Dominant Wavelength $\pm 1\text{nm}$

Typical Electro-optical Characteristics Curves

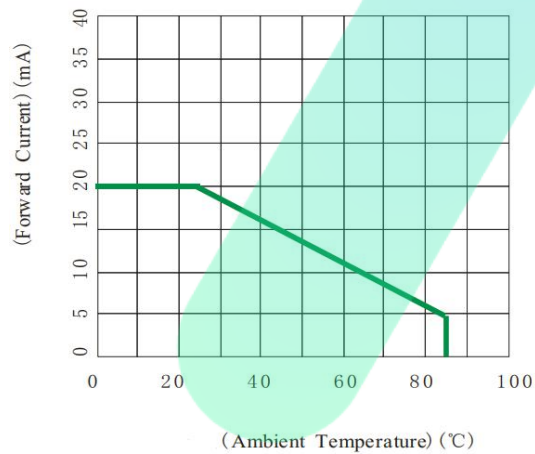
Volt-Ampere Characteristics



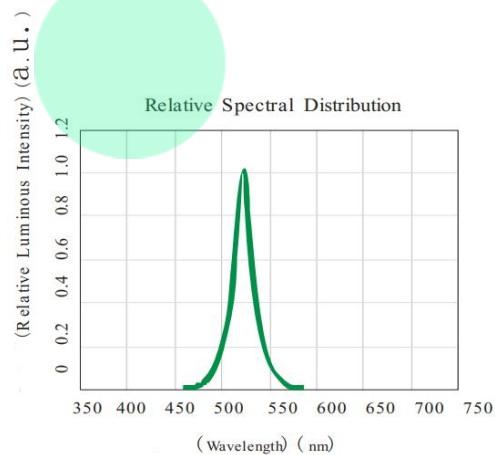
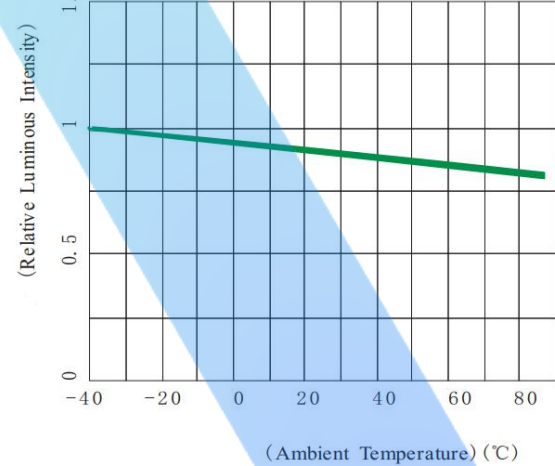
Relative Luminous Intensity VS Forward Current



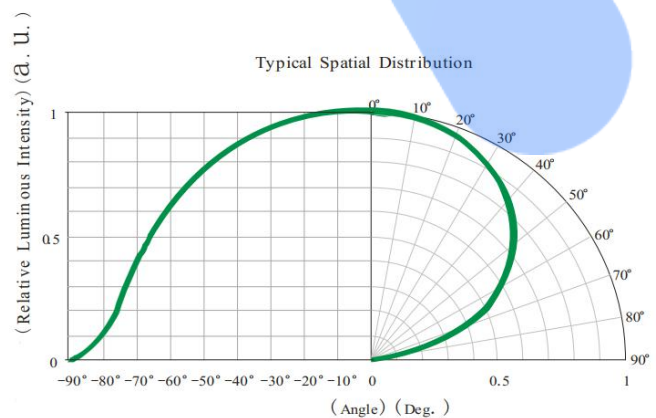
Forward Current Derating Curve



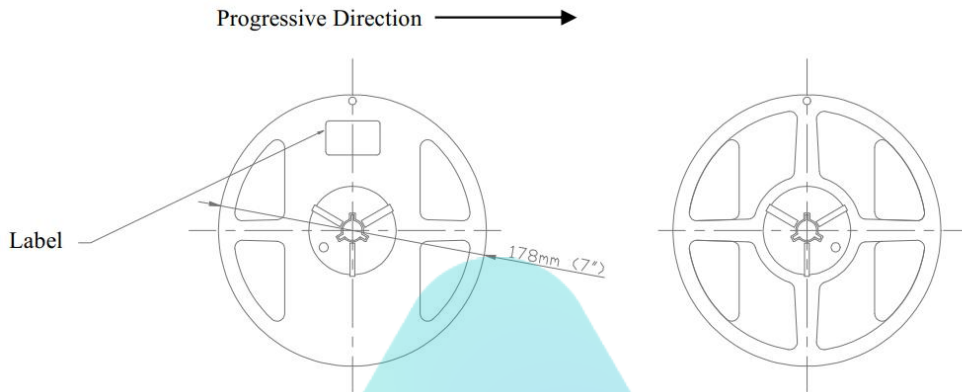
Luminous Intensity VS Ambient Temperature



Typical Spatial Distribution

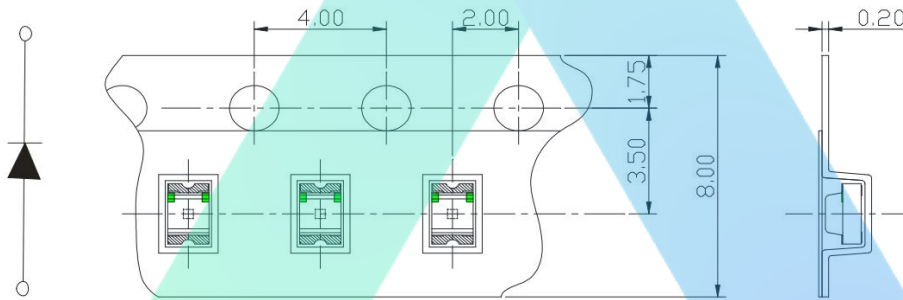


Reel Dimension



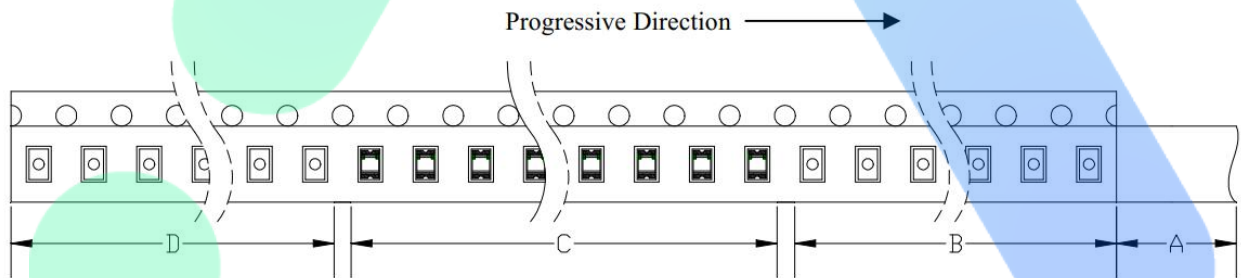
Note: The tolerances unless mentioned is $\pm 0.1\text{mm}$,Unit = mm

Carrier Tape Dimensions: Loaded quantity 3000 PCS per reel



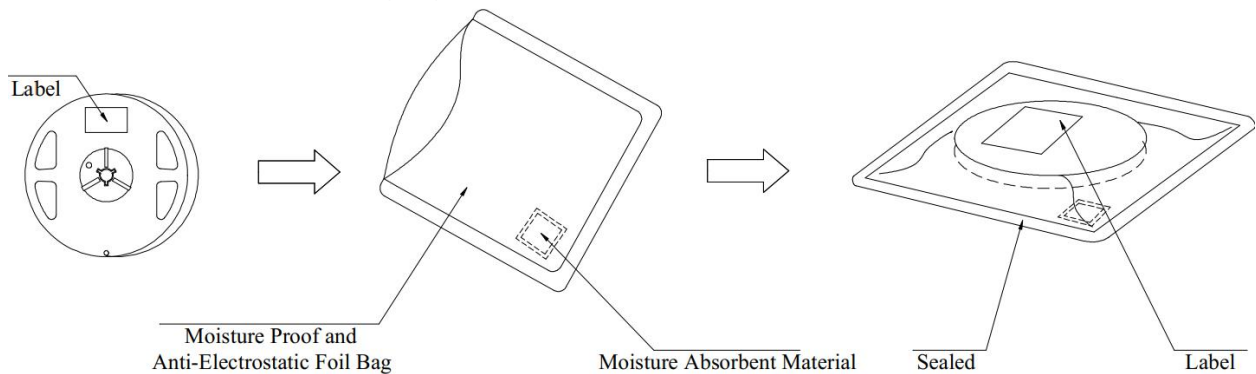
Note: The tolerances unless mentioned is $\pm 0.1\text{mm}$,Unit = mm

Details Of Carrier Tape



A: Top Cover Tape, 200mm; B: Leader, Empty, 100mm; C:3000 Lamps Loaded; D: Trailer, Empty, 100mm.

Moisture Resistant Packaging



Label explanation

CPN: Customer's Production Number

P/N: Production Number

QYY: Packing Quantity

CAT: Ranks

HUE: Peak Wavelength

REF: Reference

LOT No: Lot Number



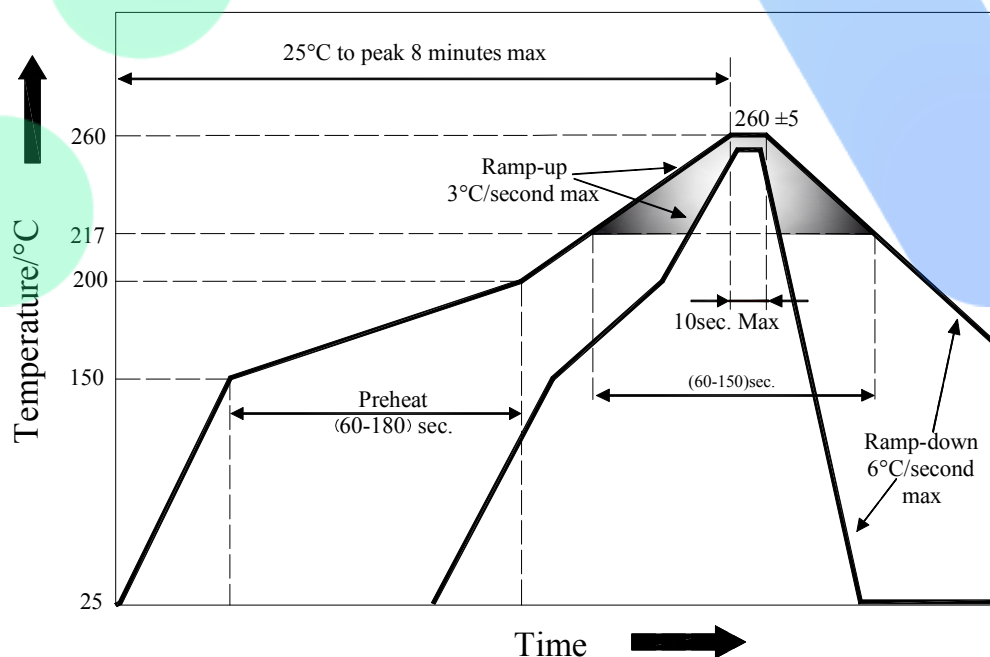
Guideline for Soldering

1.Hand Soldering

- A soldering iron of less than 20W is recommended to be used in Hand Soldering. Please keep the soldering iron under 360°C while soldering. Each terminal of the LED is to go for less than 3 second and for one time only.
- Be careful because the damage of the product is often started at the time of the hand soldering

2.Reflow Soldering

- Use the conditions shown in the under Figure of Pb-Free Reflow Soldering.



- Reflow soldering should not be done more than two times.
- Stress on the LEDs should be avoided during heating in soldering process.
- After soldering, do not touch with the product before its temperature drop down to room temperature.

3. Cleaning

- It is recommended that alcohol be used as a solvent for cleaning after soldering. Cleaning is to go under 30°C for 3 minutes or 50°C for 30 seconds. When using other solvents, it should be confirmed before hand whether the solvents will dissolve the package and the resin or not.
- Ultrasonic cleaning is also an effective way for cleaning. But the influence of Ultrasonic cleaning on LED depends on factors such as ultrasonic power. Generally, the ultrasonic power should not be higher than 300W. Before cleaning, a pre-test should be done to confirm whether any damage to LEDs will occur.

Precautions

1. Storage

- Moisture proof and anti-electrostatic package with moisture absorbent material is used, to keep moisture to a minimum.
- Before opening the package, the product should be kept at 30°C or less and humidity less than 80% RH, and be used within a year.
- After opening the package, the product should be stored at 30°C or less and humidity less than 10% RH, and be soldered within 24 hours (1 day). It is recommended that the product be operated at the workshop condition of 30°C or less and humidity less than 60% RH.
- If the moisture absorbent material has faded away or the LEDs have exceeded the storage time, baking treatment should be performed based on the following condition: (80±5)°C for 24 hours.

2. Static Electricity

- Static electricity or surge voltage damages the LEDs. Damaged LEDs will show some unusual characteristic such as the forward voltage becomes lower, or the LEDs do not light at the low current even not light.
- All devices, equipment and machinery must be properly grounded. At the same time, it is recommended that wristbands or anti-electrostatic gloves, anti-electrostatic containers be used when dealing with the LEDs.

3. Vulcanization

- LED curing is due to sulfur being in bracket and the +1 price of silver in the chemical reaction generated Ag₂S in the process. It will lead to the capacity of reflecting of silver layer reducing, light color temperature drift and serious decline, seriously affecting the performance of the product. So we should take corresponding measures to avoiding vulcanization, such as to avoid using sulphur volatile substance and keeping away from high sulphur content of the material

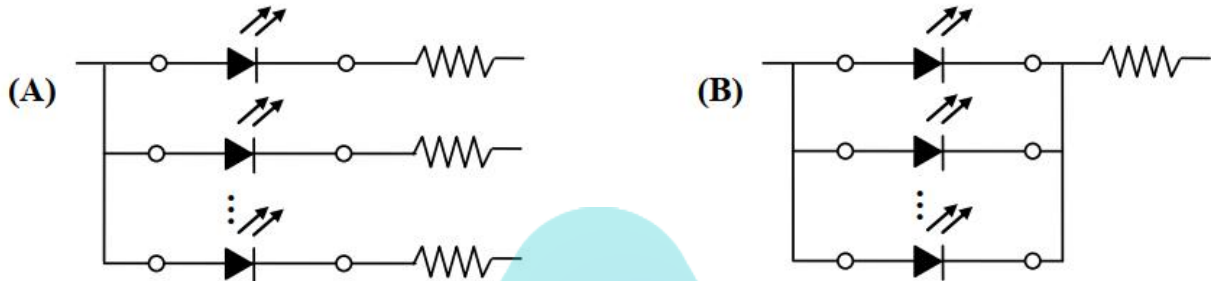
4. Safety Advice For Human Eyes

- Viewing direct to the light emitting center of the LEDs, especially those of great Luminous Intensity will cause great hazard to human eyes. Please be careful.

5. Design Consideration

- In designing a circuit, the current through each LED must not exceed the absolute maximum rating specified for each LED. In the meanwhile, resistors for protection should be applied, otherwise slight voltage shift will cause big current change, burn out may happen.
- It is recommended to use Circuit A which regulates the current flowing through each LED rather than Circuit B. When driving LEDs with a constant voltage in Circuit B, the current through the LEDs may vary due to the variation in Forward Voltage (VF) of the LEDs. In the

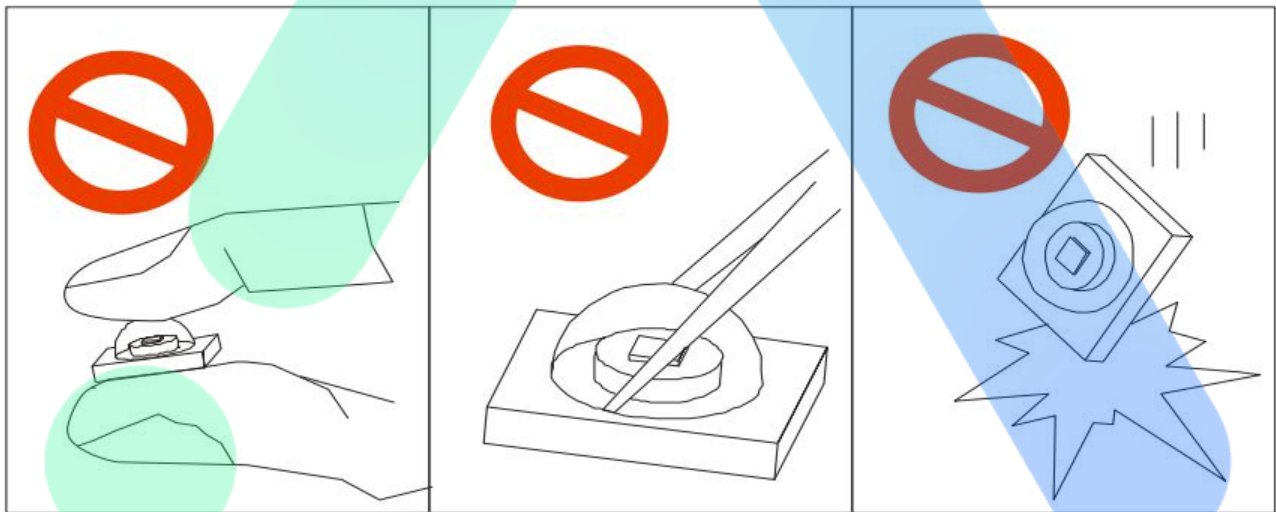
worst case, some LED may be subjected to stresses in excess of the Absolute Maximum Rating.



- Thermal Design is paramount importance because heat generation may result in the Characteristics decline, such as brightness decreased, Color changed and so on. Please consider the heat generation of the LEDs when making the system design.

6. Others

- When handling the product, touching the encapsulate with bare hands will not only contaminate its surface, but also affect on its optical characteristic. Excessive force to the encapsulate might result in catastrophic failure of the LEDs due to die breakage or wire deformation. For this reason, please do not put excessive stress on LEDs, especially when the LEDs are heated such as during Reflow Soldering.



- The silicon resin of encapsulate is fragile, so please avoid scratch or friction over the silicon resin surface. While handling the product with tweezers, do not hold by the silicon resin, be careful.