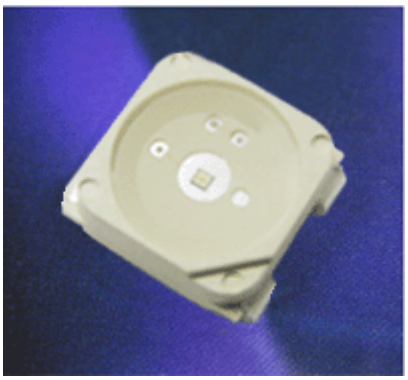
Kingbright

XPower

PRELIMINARY SPEC

Part Number: KA-1010ZG9ZC Green

ATTENTION
OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
DISCHARGE
SENSITIVE
DEVICES



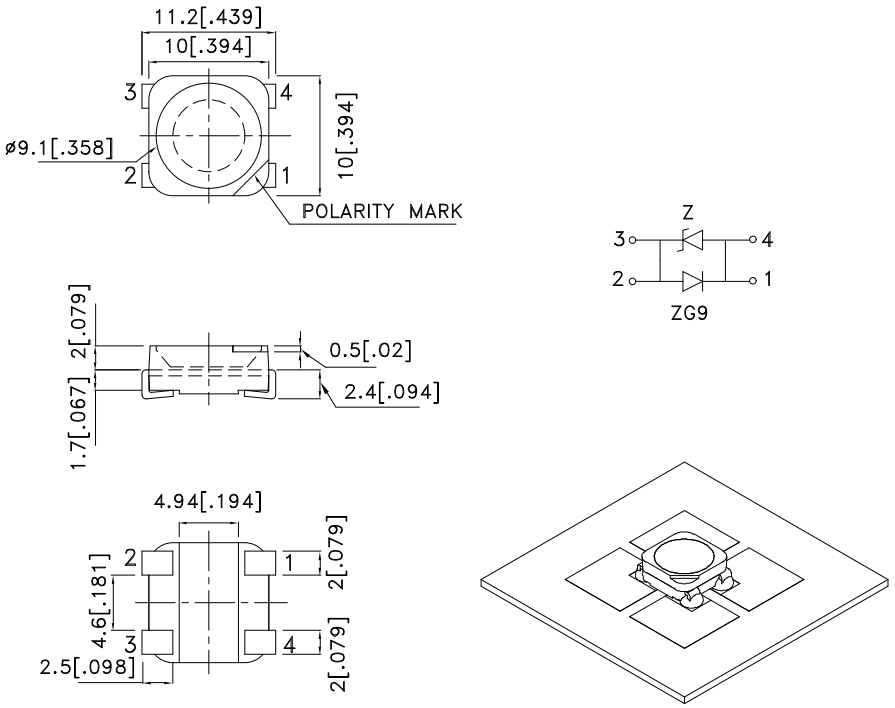
Features

- PLCC-4 PACKAGE.
- SINGLE COLOR.
- HIGH LUMINANCE.
- HIGH POWER,OPERATING CURRENT @350mA.
- SUITABLE FOR ALL SMT ASSEMBLY METHODS.
- PACKAGE : 500PCS / REEL.
- MOISTURE SENSITIVITY LEVEL : LEVEL 4.
- PATENT PENDING
- RoHS COMPLIANT.

Description

The LED is encapsulated with a soft silicone material.

Package Dimensions



Notes:
1. All dimensions are in millimeters (inches).
2. Tolerance is ±0.25(0.01") unless otherwise noted.
3. Specifications are subject to change without notice.
4.The device has a single mounting surface. The device must be mounted according to the specifications.

Applications

- traffic signaling.
- backlighting (illuminated advertising , general lighting).
- interior and exterior automotive lighting.
- substitution of micro incandescent lamps.
- portable light source (e.g. bicycle flashlight).
- signal and symbol luminaire for orientation.
- marker lights (e.g. steps, exit ways, etc).
- decorative and entertainment lighting.
- indoor and outdoor commercial and residential architectural lighting.

Application Notes

- Pressure or stress can damage the encapsulating material and affect the reliability of the LED.
  Precaution should be taken to avoid pressure on the LED encapsulating surface.
- Static electricity and surge damage the LEDS.
  It is recommended to use a wrist band or anti-electrostatic glove when handling the LEDs.
  All devices, equipment and machinery must be electrically grounded.
- Handling Indications

Use proper handling techniques to prevent damage to the LED surface. Minimize mechanical stress on the LED surface during processing and handling. Do not touch the emitting surface with sharp objects to avoid scratching or damaging the LED.

Figure 1

In general, LEDs should be handled by the sides of the package. Handling instruments should not touch the emitting surface of the LED package.

Figure 2

For automated pick-and-place machines, the pickup nozzle should be larger than the size of the LED reflector area to avoid placing excess pressure on the LED surface.

Selection Guide

Part No.	Dice	Lens Type	luminous Intensity [2] Iv(cd)@ 350 mA		Φv (lm) [2] @ 350 mA		Viewing Angle [1]
			Min.	Typ.	Min.	Typ.	2θ1/2
KA-1010ZG9ZC	GREEN (AlInGaN)	WATER CLEAR	5	6	14.3	17.1	120°

Notes:
1. θ1/2 is the angle from optical centerline where the luminous intensity is 1/2 the optical centerline value.
2. Luminous intensity / luminous Flux: +/-15%.

Absolute Maximum Ratings at T_A=25°C

Parameter	Symbol	Value	Unit
Power dissipation	P_t	1.15	W
Junction temperature	T_J	110	°C
Operating Temperature	Top	-40 To +85	°C
Storage Temperature	Tstg	-40 To +85	°C
DC Forward Current [1]	I_F	350	mA
Peak Forward Current [2]	I_{FM}	500	mA
Thermal resistance [1]	R_{th}	47	°C/W

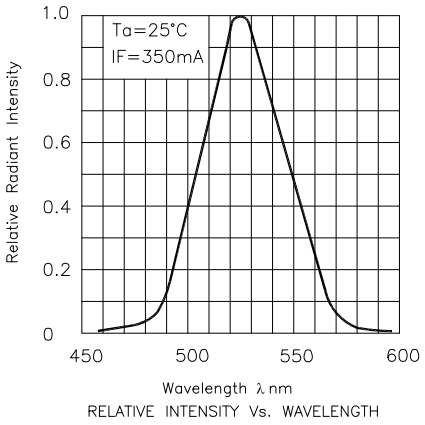
Notes:
1.Results from mounting on PC board FR4(pad size≥100mm^2 per pad), mounted on pc board-metal core PCB is recommend for lowest thermal Resistance.
2.1/10 Duty Cycle, 0.1ms Pulse Width.

Electrical / Optical Characteristics at T_A=25°C

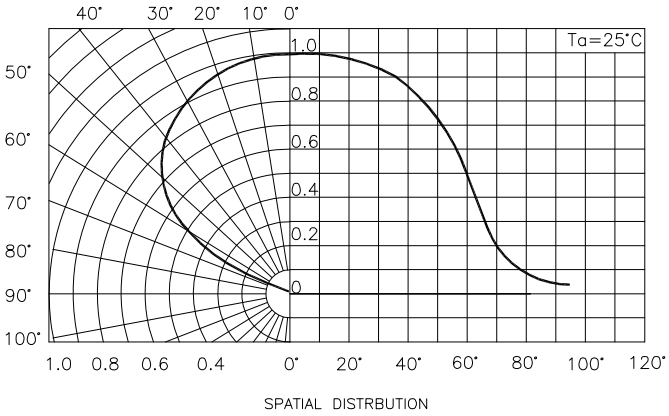
Parameter	Symbol	Value	Unit
Wavelength at peak emission I_F=350mA [Typ.]	λpeak	525	nm
Dominant Wavelength I_F=350mA [Typ.]	λDom [1]	530	nm
Spectral bandwidth at 50%$\Phi_{REL\ MAX}$ I_F=350mA [Typ.]	Δλ	45	nm
Forward Voltage I_F=350mA [Min.]	V_F [2]	2.7	V
Forward Voltage I_F=350mA [Typ.]		3.3	
Forward Voltage I_F=350mA [Max.]		3.8	
Temperature coefficient of λpeak I_F=350mA, -10°C≤ T≤100°C [Typ.]	TCλpeak	0.16	nm/°C
Temperature coefficient of λdom I_F=350mA, -10°C≤ T≤100°C [Typ.]	TCλdom	0.14	nm/°C
Temperature coefficient of V_F I_F=350mA, -10°C≤ T≤100°C [Typ.]	TCv	-2.0	mV/°C

Notes:
1.Wavelength: +/-1nm.
2. Forward Voltage: +/-0.1V.

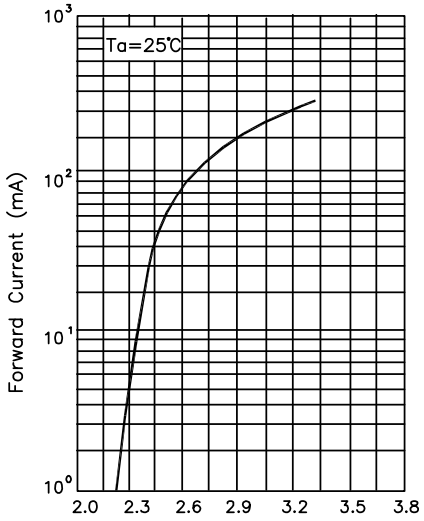
KA-1010ZG9ZC



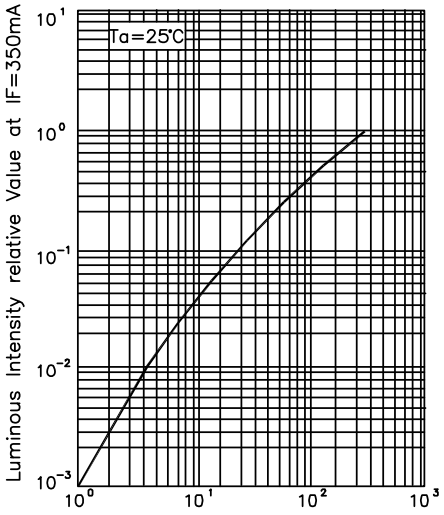
RELATIVE INTENSITY Vs. WAVELENGTH



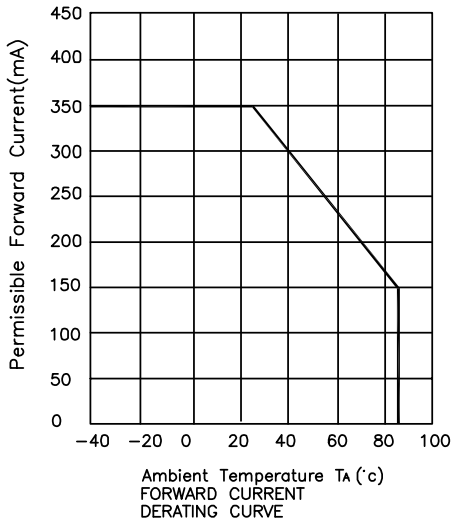
SPATIAL DISTRBUTION



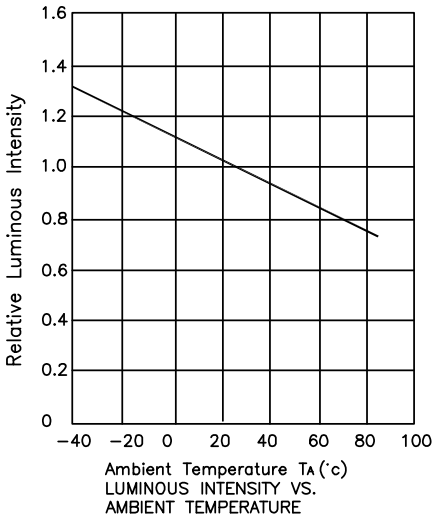
FORWARD CURRENT Vs.
FORWARD VOLTAGE



LUMINOUS INTENSITY Vs.
FORWARD CURRENT



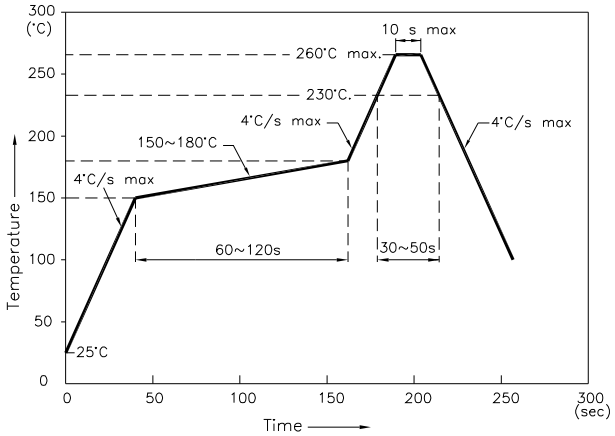
FORWARD CURRENT
DERATING CURVE



LUMINOUS INTENSITY VS.
AMBIENT TEMPERATURE

KA-1010ZG9ZC

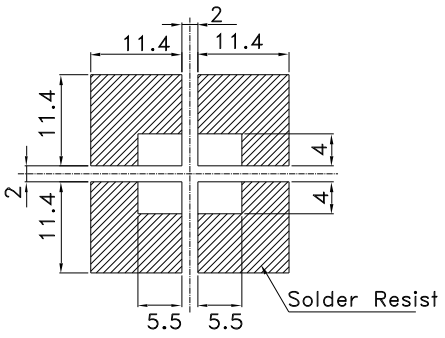
Reflow Soldering Profile For Lead-free SMT Process.



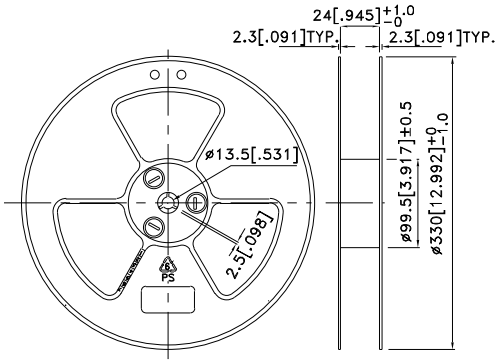
NOTES:

1. We recommend the reflow temperature 245°C(+/−5°C).The maximum soldering temperature should be limited to 260°C.
2. Don't cause stress to the epoxy resin while it is exposed to high temperature.
3. Number of reflow process shall be 2 times or less.

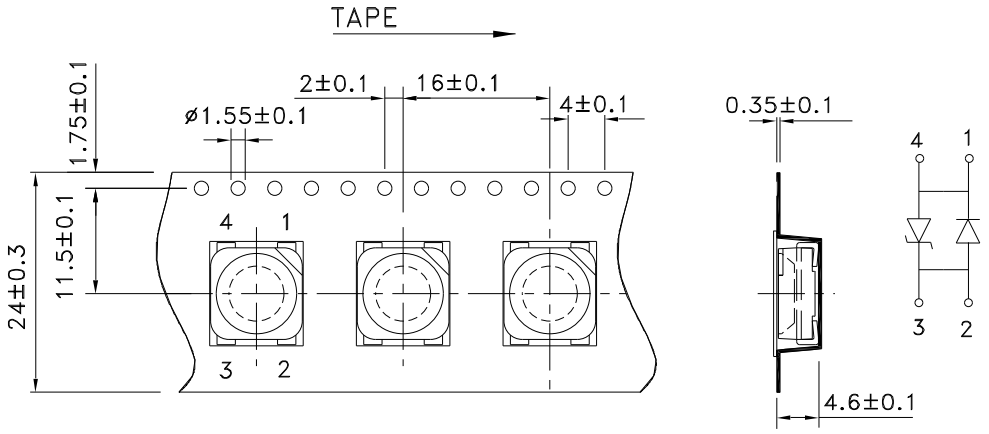
Recommended Soldering Pattern
(Units : mm; Tolerance: ±0.1)



Reel Dimension



Tape Specifications
(Units : mm)



PACKING & LABEL SPECIFICATIONS **KA-1010ZG9ZC**