Kingbright

PRELIMINARY SPEC

PATENT PENDING

XPower mini

Part Number : KA-1010VGC9 Green

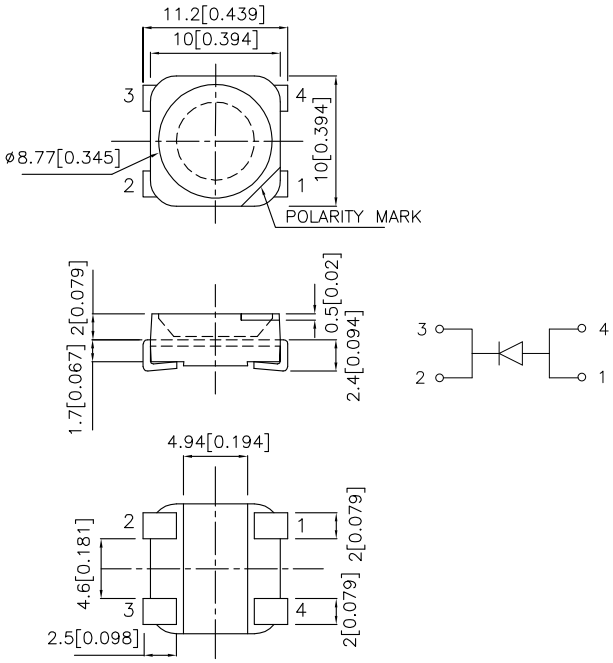
ATTENTION
OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
DISCHARGE
SENSITIVE
DEVICES

Features

*P-LCC-4 PACKAGE.
*SINGLE COLOR.
*HIGH LUMINANCE.
*SUITABLE FOR ALL SMT ASSEMBLY METHODS.
*PACKAGE : 1000PCS / REEL.
*RoHS COMPLIANT.

Description

The Green source color devices are made with InGaN on SiC Light Emitting Diode.
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.



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.

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.

Selection Guide

Part No.	Dice	Luminous flux Øv (Lm) I_F =350 mA		Luminous Intensity Iv (mcd) I_F =350 mA		Viewing Angle [1]
		Min.	Typ.	Min.	Typ.	2θ1/2 (Typ.)
KA-1010VGC9	GREEN (InGaN)	16.3	21.4	5700	7500	120°

Notes:
1. θ1/2 is the angle from optical centerline where the luminous intensity is 1/2 the optical centerline value.

Absolute Maximum Ratings at T_A=25°C

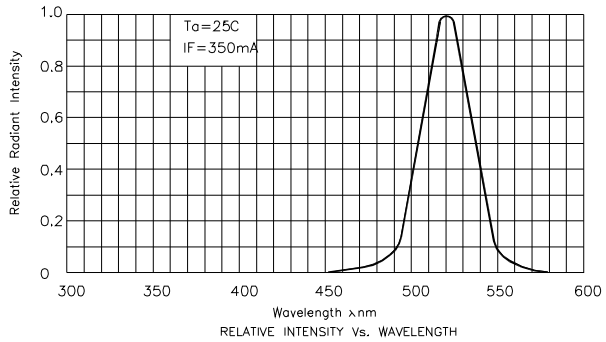
Parameter	Symbol	Value	Unit
Power dissipation	P_t	1.2	mW
Reverse Voltage	V_R	5	V
Junction temperature	T_J	110	°C
Operating Temperature	Top	-40 To +85	°C
Storage Temperature	Tstg	-40 To +85	°C
DC Forward Current	I_F	350	mA
Peak Forward Current [1]	I_{FM}	500	mA
Thermal resistance [2]	R_{th}	50	°C/W

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

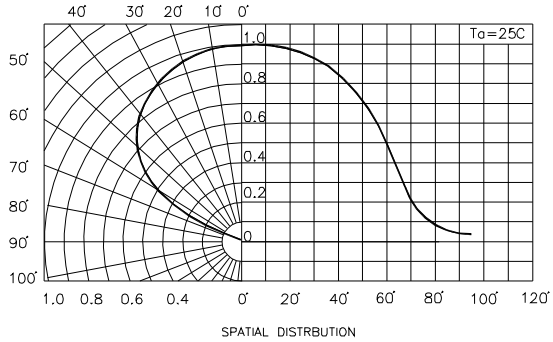
Electrical / Optical Characteristics at T_A=25°C

Parameter		Symbol	Value	Unit
Wavelength at peak emission I_F=350mA	[typ.]	λpeak	520	nm
Dominant Wavelength I_F=350mA	[typ.]	λdom	527	nm
Spectral bandwidth at 50%$\Phi_{REL\ MAX}$ I_F=350mA	[typ.]	Δλ	35	nm
Viewing angle at 50%Φ_V	[typ.]	θ	120	°
Forward Voltage (I_F=350mA)	[min.]	V_F	3.0	V
Forward Voltage (I_F=350mA)	[typ.]	V_F	3.4	
Forward Voltage (I_F=350mA)	[max.]	V_F	3.9	
Reverse Current (V_R=5V)	[max.]	I_R	10	μA
Temperature coefficient of λpeak I_F=350mA, -10°C≤ T≤100°C	[typ.]	TCλpeak	0.15	nm/°C
Temperature coefficient of λdom I_F=350mA, -10°C≤ T≤100°C	[typ.]	TCλdom	0.13	nm/°C
Temperature coefficient of V_F I_F=350mA, -10°C≤ T≤100°C	[typ.]	TCv	-2.7	mV/°C

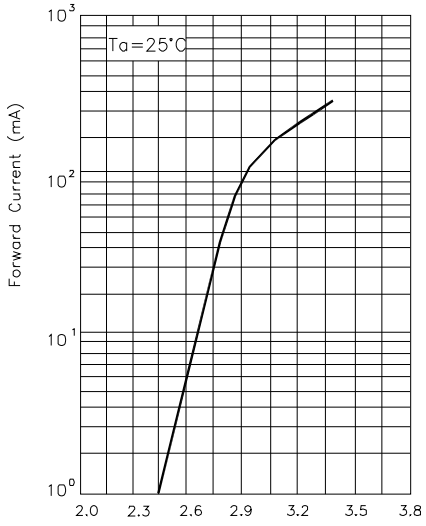
KA-1010VGC9



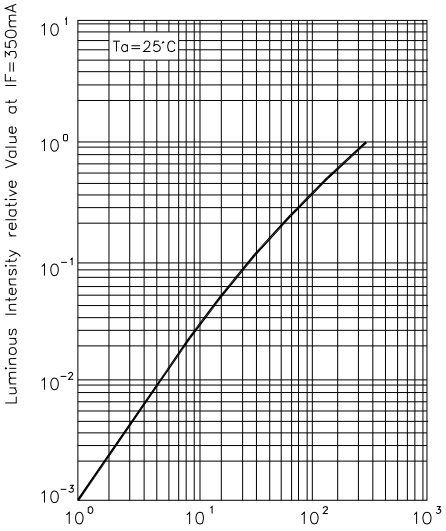
RELATIVE INTENSITY Vs. WAVELENGTH



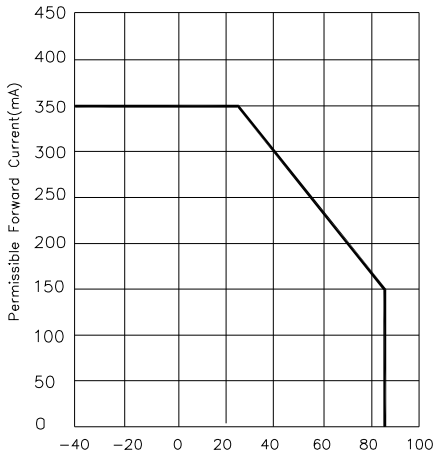
SPATIAL DISTRBUTION



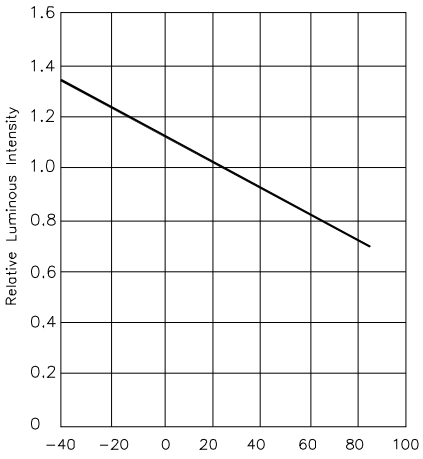
Forward voltage (V)
FORWARD CURRENT Vs.
FORWARD VOLTAGE



Forward current (mA)
LUMINOUS INTENSITY Vs.
FORWARD CURRENT



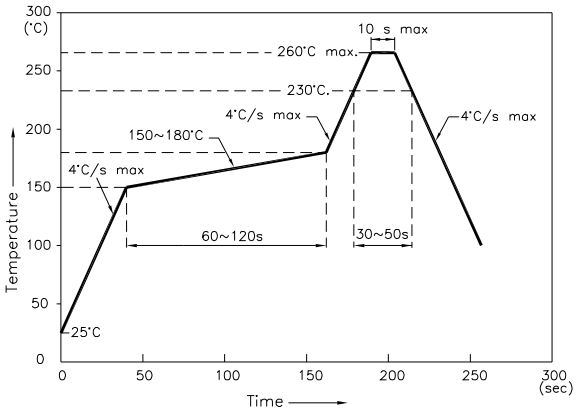
Ambient Temperature T_A (°C)
FORWARD CURRENT
DERATING CURVE



Ambient Temperature T_A (°C)
LUMINOUS INTENSITY VS.
AMBIENT TEMPERATURE

KA-1010VGC9

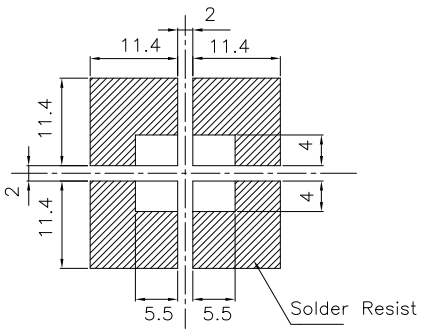
Reflow Soldering Profile For Lead-free SMT Process.



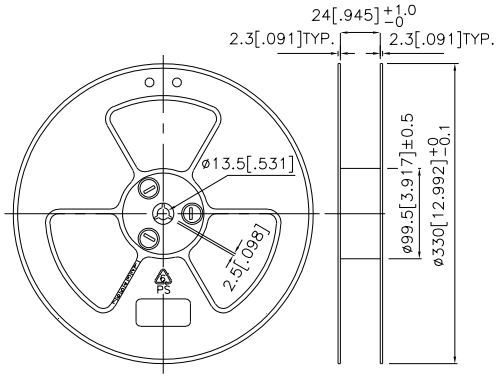
NOTES:

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.

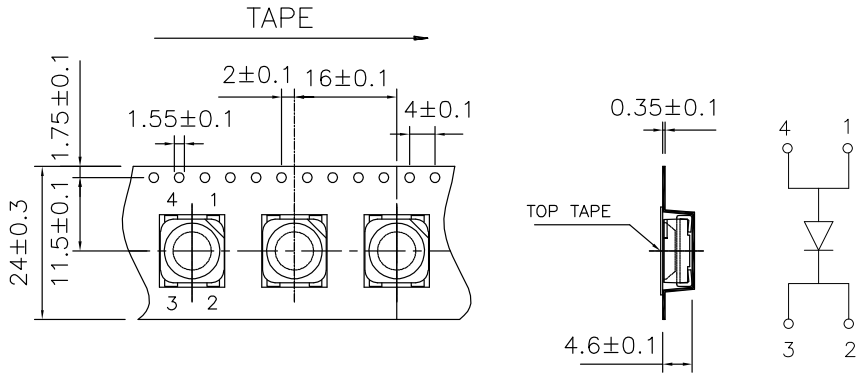
Recommended Soldering Pattern (Units : mm)



Reel Dimension



Tape Specifications (Units : mm)



Remarks:

If special sorting is required (e.g. binning based on forward voltage, luminous intensity, or wavelength), the typical accuracy of the sorting process is as follows:

1. Wavelength: +/-1nm
2. Luminous Intensity: +/-15%
3. Forward Voltage: +/-0.1V

Note: Accuracy may depend on the sorting parameters.