Kingbright

OVAL SOLID STATE LAMP

PRELIMINARY SPEC

Part Number: L-5603VGDL/SD-Z   Green

Features

- OUTSTANDING MATERIAL EFFICIENCY.
- RELIABLE AND RUGGED.
- I.C. COMPATIBLE.
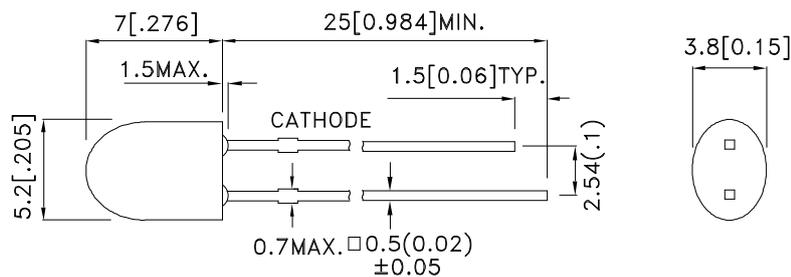- RoHS COMPLIANT.

Description

The Green source color devices are made with InGaN 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.

Package Dimensions

Notes:
1. All dimensions are in millimeters (inches).
2. Tolerance is ±0.25(0.01") unless otherwise noted.
3. Lead spacing is measured where the leads emerge from the package.
4. Specifications are subject to change without notice.

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Selection Guide

| Part No. | Dice | Lens Type | Iv (mcd) [2] @ 20mA | | Viewing Angle [1] |
			Min.	Typ.	2θ1/2
L-5603VGDL/SD-Z	Green (InGaN)	GREEN SEMI DIFFUSED	2800	6000	100°(H) 50°(V)

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%.

Electrical / Optical Characteristics at TA=25°C

Symbol	Parameter	Device	Typ.	Max.	Units	Test Conditions
λpeak	Peak Wavelength	Green	525		nm	I_F=20mA
λD [1]	Dominant Wavelength	Green	535		nm	I_F=20mA
Δλ1/2	Spectral Line Half-width	Green	39		nm	I_F=20mA
C	Capacitance	Green	65		pF	V_F=0V;f=1MHz
VF [2]	Forward Voltage	Green	3.2	3.7	V	I_F=20mA
IR	Reverse Current	Green		10	uA	V_R = 5V

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

Absolute Maximum Ratings at TA=25°C

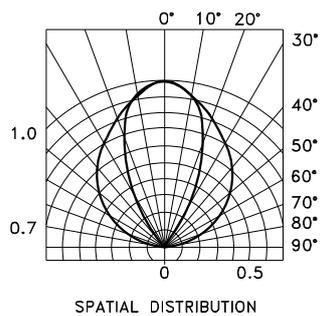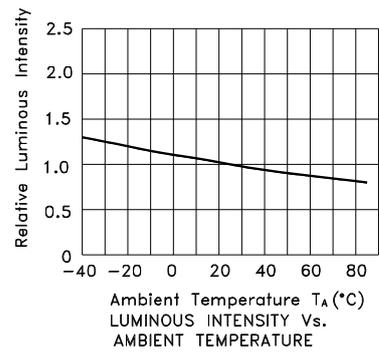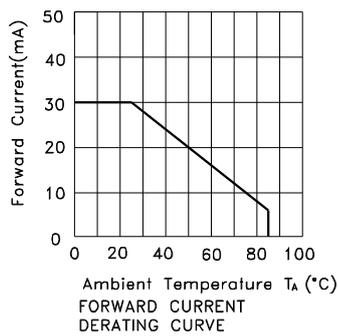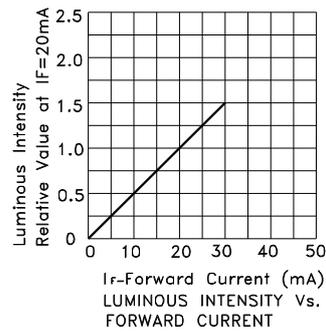| Parameter	Green	Units
Power dissipation	111	mW
DC Forward Current	30	mA
Peak Forward Current [1]	100	mA
Reverse Voltage	5	V
Operating/Storage Temperature	-40°C To +85°C	
Lead Solder Temperature [2]	260°C For 3 Seconds	
Lead Solder Temperature [3]	260°C For 5 Seconds	

Notes:
1. 1/10 Duty Cycle, 0.1ms Pulse Width.
2. 2mm below package base.
3. 5mm below package base.

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VG-Z

$T_A = 25°C$

RELATIVE INTENSITY Vs. WAVELENGTH

Relative Radiant Intensity

wavelength λ (nm)

Green **L-5603VGDL/SD-Z**

FORWARD CURRENT Vs.
FORWARD VOLTAGE

Forward Current(mA)

Forward Voltage(V)

LUMINOUS INTENSITY Vs.
FORWARD CURRENT

Luminous Intensity
Relative Value at IF=20mA

If-Forward Current (mA)

FORWARD CURRENT
DERATING CURVE

Forward Current(mA)

Ambient Temperature T_A (°C)

LUMINOUS INTENSITY Vs.
AMBIENT TEMPERATURE

Relative Luminous Intensity

Ambient Temperature T_A (°C)

SPATIAL DISTRIBUTION

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LED MOUNTING METHOD

1. The lead pitch of the LED must match the pitch of the mounting holes on the PCB during component placement. Lead-forming may be required to insure the lead pitch matches the hole pitch. Refer to the figure below for proper lead forming procedures. (Fig. 1)
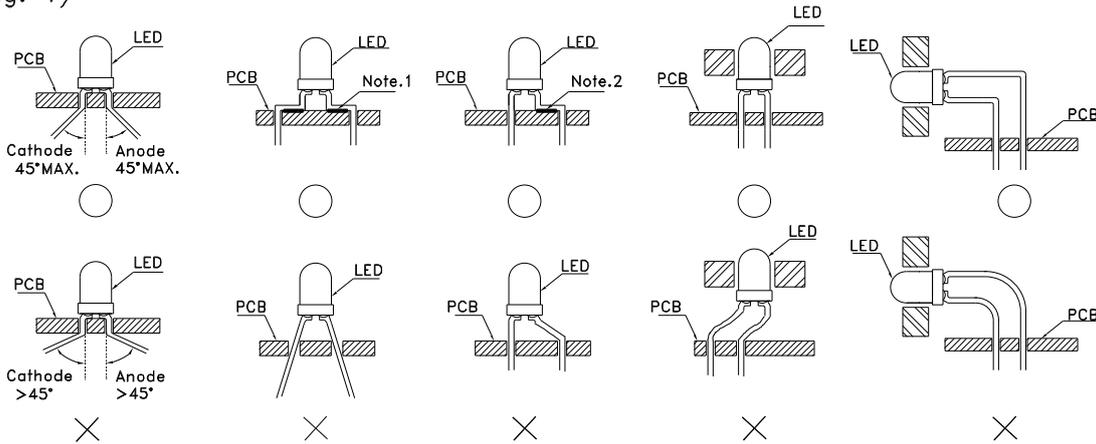
Fig.1

"○" Correct mounting method "✕" Incorrect mounting method
Note 1-2 : Do not route PCB trace in the contact area between the leadframe and the PCB to prevent short-circuits.

2. When soldering wire to the LED, use individual heat-shrink tubing to insulate the exposed leads to prevent accidental contact short-circuit. (Fig. 2)
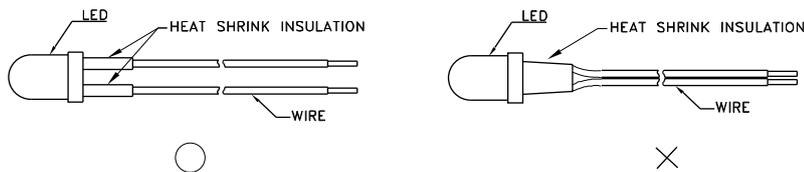
Fig. 2

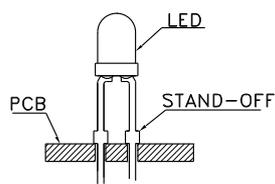3. Use stand-offs (Fig. 3) or spacers (Fig. 4) to securely position the LED above the PCB.
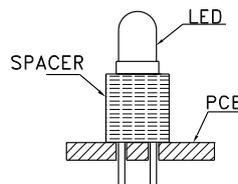
Fig. 3   Fig. 4

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LEAD FORMING PROCEDURES

1. Maintain a minimum of 2mm clearance between the base of the LED lens and the first lead bend. (Fig. 5 and 6)
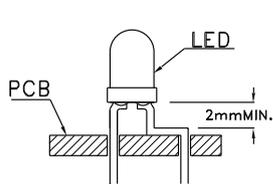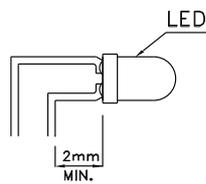

Fig. 5

Fig. 6

2. Lead forming or bending must be performed before soldering, never during or after Soldering.
3. Do not stress the LED lens during lead−forming in order to fractures in the lens epoxy and damage the internal structures.
4. During lead forming, use tools or jigs to hold the leads securely so that the bending force will not be transmitted to the LED lens and its internal structures. Do not perform lead forming once the component has been mounted onto the PCB. (Fig. 7)
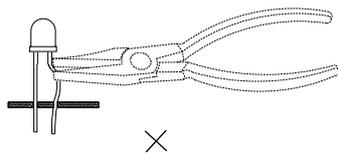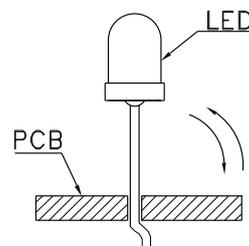5. Do not bend the leads more than twice. (Fig. 8)

Fig. 7

Fig. 8

6. After soldering or other high−temperature assembly, allow the LED to cool down to 50°C before applying outside force (Fig. 9). In general, avoid placing excess force on the LED to avoid damage. For any questions please consult with Kingbright representative for proper handling procedures.
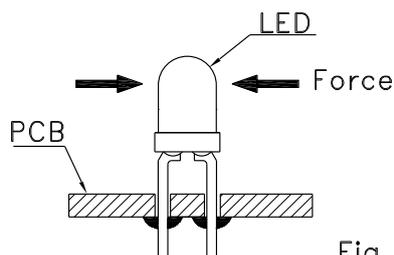

Fig. 9