

Part Number: L-7104MD/1G1ID

Green
High Efficiency Red

Features

- Pre-trimmed leads for pc mounting.
- Black case enhances contrast ratio.
- Wide viewing angle.
- High reliability life measured in years.
- Housing UL rating:94V-0.
- Housing material: type 66 nylon.
- RoHS compliant.

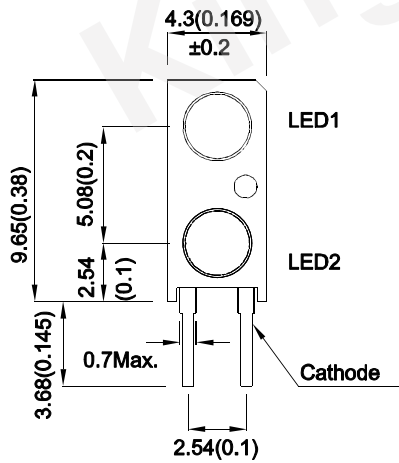
Descriptions

- The Green source color devices are made with Gallium Phosphide Green Light Emitting Diode.
- The High Efficiency Red source color devices are made with Gallium Arsenide Phosphide on Gallium Phosphide Orange Light Emitting Diode.

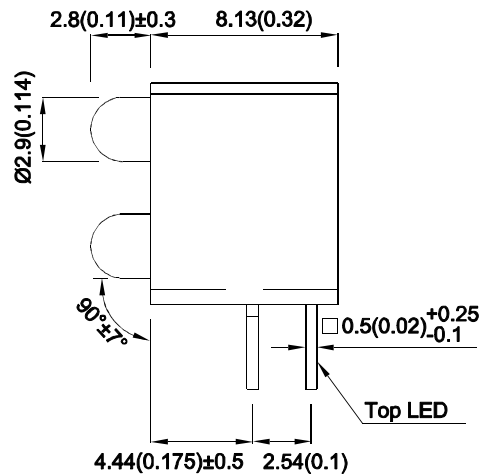
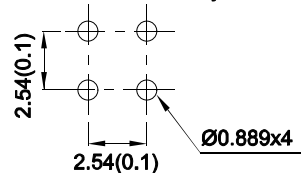
Package Dimensions

LED1: Green

LED2: Red



Recommended PCB Layout



Notes:

1. All dimensions are in millimeters (inches).
2. Tolerance is $\pm 0.25(0.01)$ " unless otherwise noted.
3. Lead spacing is measured where leads emerge from the package.
4. The specifications, characteristics and technical data described in the datasheet are subject to change without prior notice.



Selection Guide

Part No.	Emitting Color (Material)	Lens Type	Iv (mcd) [2] @ 10mA		Viewing Angle [1]
			Min.	Typ.	2θ1/2
L-7104MD/1G11D	Green (GaP)	Green Diffused	10	25	50°
			*10	*25	
	High Efficiency Red (GaAsP/GaP)	Red Diffused	12	30	50°
			*10	*20	

Notes:

- θ1/2 is the angle from optical centerline where the luminous intensity is 1/2 of the optical peak value.
- Luminous intensity / luminous Flux: +/-15%.
- * Luminous intensity value is traceable to CIE127-2007 standards.

Electrical / Optical Characteristics at TA=25°C

Symbol	Parameter	Emitting Color	Typ.	Max.	Units	Test Conditions
λpeak	Peak Wavelength	Green High Efficiency Red	565 627		nm	IF=10mA
λD [1]	Dominant Wavelength	Green High Efficiency Red	568 617		nm	IF=10mA
Δλ1/2	Spectral Line Half-width	Green High Efficiency Red	30 45		nm	IF=10mA
C	Capacitance	Green High Efficiency Red	15 15		pF	VF=0V;f=1MHz
VF [2]	Forward Voltage	Green High Efficiency Red	2 1.9	2.5 2.5	V	IF=10mA
IR	Reverse Current	Green High Efficiency Red		10 10	uA	VR = 5V

Notes:

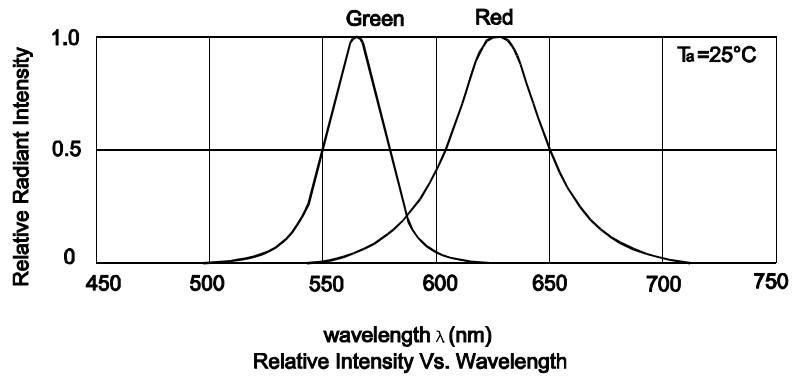
- Wavelength: +/-1nm.
- Forward Voltage: +/-0.1V.
- Wavelength value is traceable to CIE127-2007 standards.
- Excess driving current and/or operating temperature higher than recommended conditions may result in severe light degradation or premature failure.

Absolute Maximum Ratings at TA=25°C

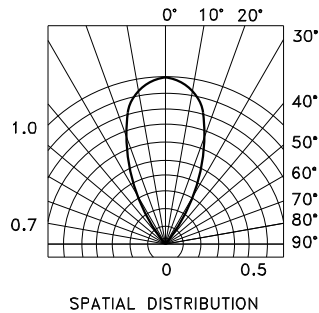
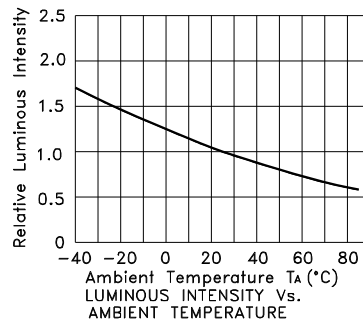
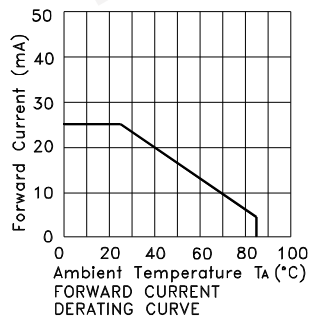
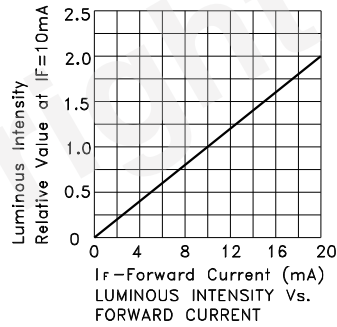
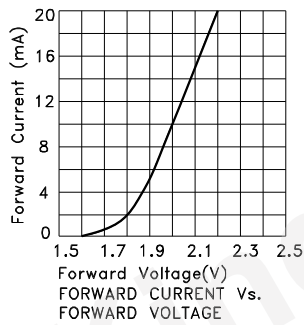
Parameter	Green	High Efficiency Red	Units
Power dissipation	62.5	75	mW
DC Forward Current	25	30	mA
Peak Forward Current [1]	140	160	mA
Reverse Voltage	5		V
Operating / Storage Temperature	-40°C To +85°C		
Lead Solder Temperature [2]	260°C For 3 Seconds		
Lead Solder Temperature [3]	260°C For 5 Seconds		

Notes:

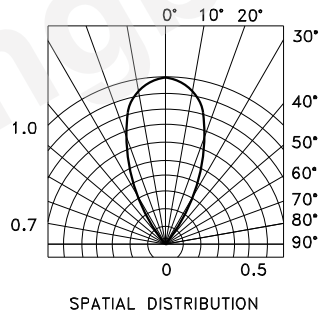
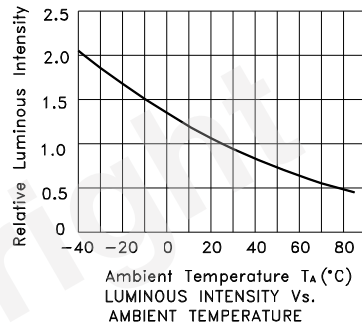
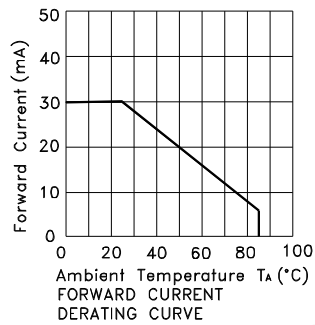
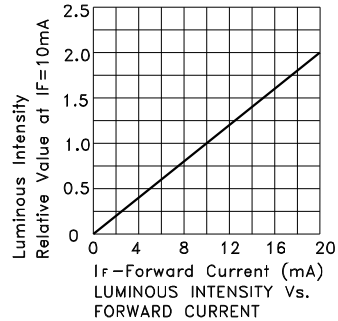
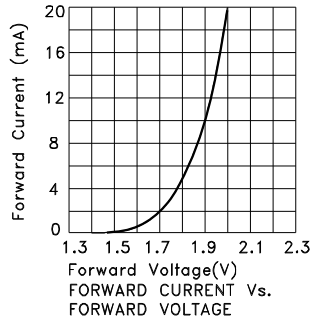
- 1/10 Duty Cycle, 0.1ms Pulse Width.
- 2mm below package base.
- 5mm below package base.
- Relative humidity levels maintained between 40% and 60% in production area are recommended to avoid the build-up of static electricity – Ref JEDEC/JESD625-A and JEDEC/J-STD-033.



L-7104MD/1G1ID Green

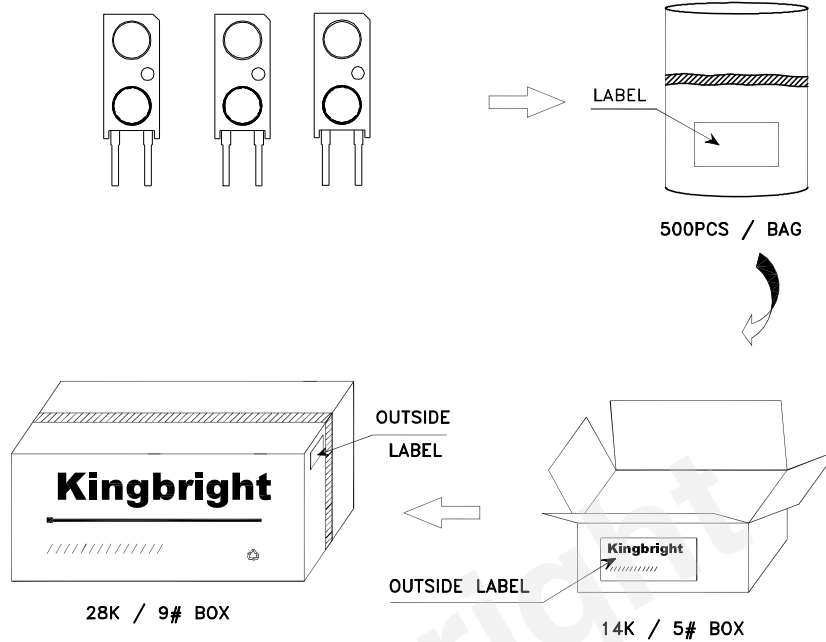



High Efficiency Red



PACKING & LABEL SPECIFICATIONS

L-7104MD/1G1ID



Kingbright	
P/NO : L-7104MDxxx	
QTY: 500 pcs	Q.C. Q C XX XX XXXX PASSED
S/N: XXXX	
CODE: XXX	
LOT NO:	
	
RoHS Compliant	

Terms and conditions for the usage of this document

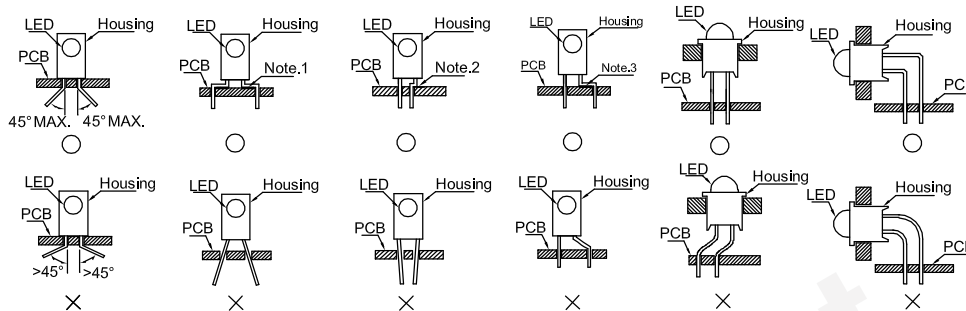
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PRECAUTIONS

1. Storage conditions:

- Avoid continued exposure to the condensing moisture environment and keep the product away from rapid transitions in ambient temperature.
- LEDs should be stored with temperature $\leq 30^{\circ}\text{C}$ and relative humidity $< 60\%$.
- Product in the original sealed package is recommended to be assembled within 72 hours of opening. Product in opened package for more than a week should be baked for 30 (+10/-0) hours at $85 \sim 100^{\circ}\text{C}$.

2. 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.



" ○ " Correct mounting method " × " Incorrect mounting method

Note 1-3: Do not route PCB trace in the contact area between the leadframe and the PCB to prevent short-circuits.

3. During soldering, component covers and holders should leave clearance to avoid placing damaging stress on the LED during soldering.

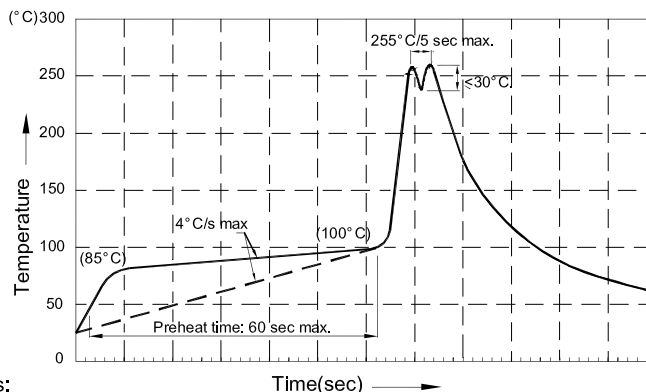


4. The tip of the soldering iron should never touch the lens epoxy.

5. Through-hole LEDs are incompatible with reflow soldering.

6. If the LED will undergo multiple soldering passes or face other processes where the part may be subjected to intense heat, please check with Kingbright for compatibility.

7. Recommended Wave Soldering Profiles:



Notes:

- Recommend pre-heat temperature of 105°C or less (as measured with a thermocouple attached to the LED pins) prior to immersion in the solder wave with a maximum solder bath temperature of 260°C
- Peak wave soldering temperature between $245^{\circ}\text{C} \sim 255^{\circ}\text{C}$ for 3 sec (5 sec max).
- Do not apply stress to the epoxy resin while the temperature is above 85°C .
- Fixtures should not incur stress on the component when mounting and during soldering process.
- SAC 305 solder alloy is recommended.
- No more than one wave soldering pass.