

Part Number: WP13HD

Bright Red

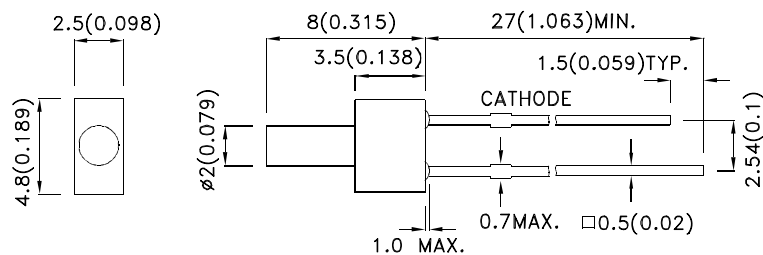
### Features

- Mounts flush with panel.
- Low power consumption.
- Suitable for audio panel indicator.
- Fits 2mm hole in panel up to 3.5mm (.138").
- Long life - solid state reliability.
- RoHS compliant.

### Description

The Bright Red source color devices are made with Gallium Phosphide Red Light Emitting Diode.

### Package Dimensions



#### 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 the 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.	Dice	Lens Type	Iv (mcd) [2] @ 10mA		Viewing Angle [1]
			Min.	Typ.	2θ1/2
WP13HD	Bright Red (GaP)	Red Diffused	0.8	2	70°

Notes:

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

## Electrical / Optical Characteristics at TA=25°C

Symbol	Parameter	Device	Typ.	Max.	Units	Test Conditions
$\lambda_{peak}$	Peak Wavelength	Bright Red	700		nm	I <sub>F</sub> =20mA
$\lambda_D$ [1]	Dominant Wavelength	Bright Red	660		nm	I <sub>F</sub> =20mA
$\Delta\lambda_{1/2}$	Spectral Line Half-width	Bright Red	45		nm	I <sub>F</sub> =20mA
C	Capacitance	Bright Red	40		pF	V <sub>F</sub> =0V;f=1MHz
V <sub>F</sub> [2]	Forward Voltage	Bright Red	2.25	2.5	V	I <sub>F</sub> =20mA
I <sub>R</sub>	Reverse Current	Bright Red		10	uA	V <sub>R</sub> = 5V

Notes:

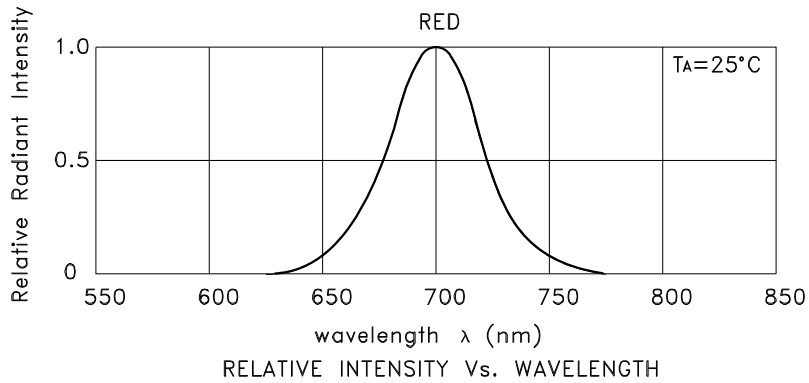
- 1.Wavelength: +/-1nm.
2. Forward Voltage: +/-0.1V.

## Absolute Maximum Ratings at TA=25°C

Parameter	Bright Red	Units
Power dissipation	62.5	mW
DC Forward Current	25	mA
Peak Forward Current [1]	130	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	

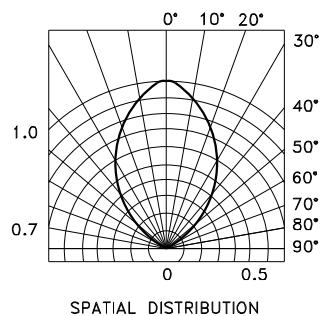
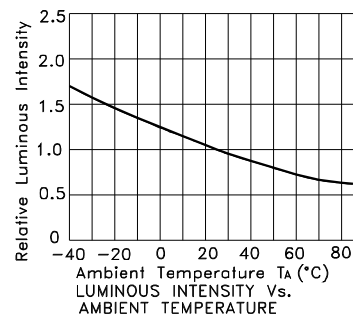
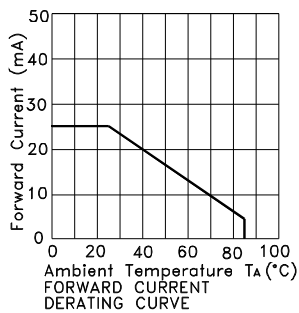
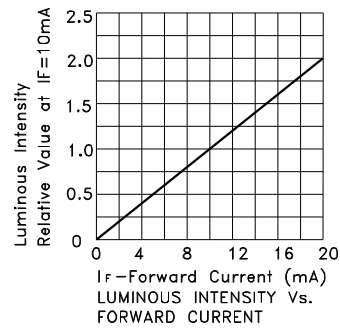
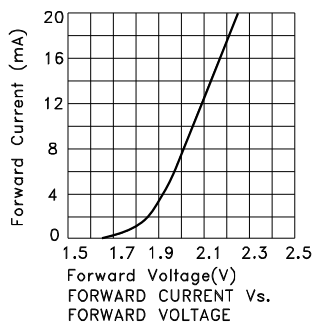
Notes:

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



## Bright Red

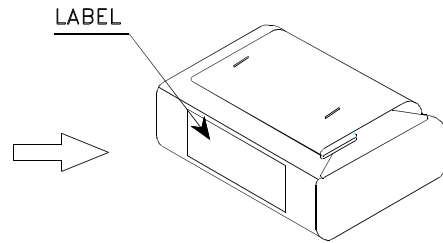
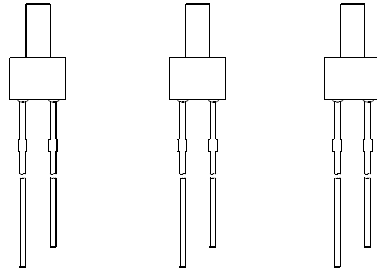
## WP13HD



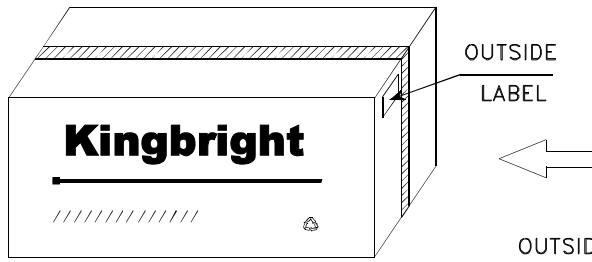
# Kingbright

## PACKING & LABEL SPECIFICATIONS

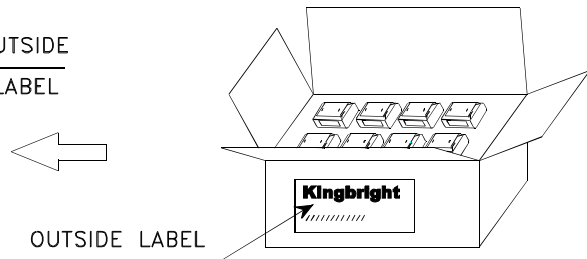
## WP13HD



1000PCS / BAG



40K / 9# BOX



20K / 5# BOX

<h1 style="margin: 0;">Kingbright</h1>		
P/NO: WP13xxx		
QTY: 1000 pcs	Q.C.	<div style="border: 1px solid black; border-radius: 50%; width: 30px; height: 30px; margin: 0 auto; display: flex; align-items: center; justify-content: center;"> <div style="font-size: 8px; margin-bottom: 2px;">Q C</div> <div style="font-size: 8px; margin-bottom: 2px;">XX XX XXXX</div> <div style="font-weight: bold; font-size: 8px; margin-bottom: 2px;">PASSED</div> </div>
S/N: XXXX		
CODE: XXX		
LOT NO:		
xxxxxxxxxxxxxxxxxxxxxxxxxxxx		
RoHS Compliant		

## PRECAUTIONS

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)

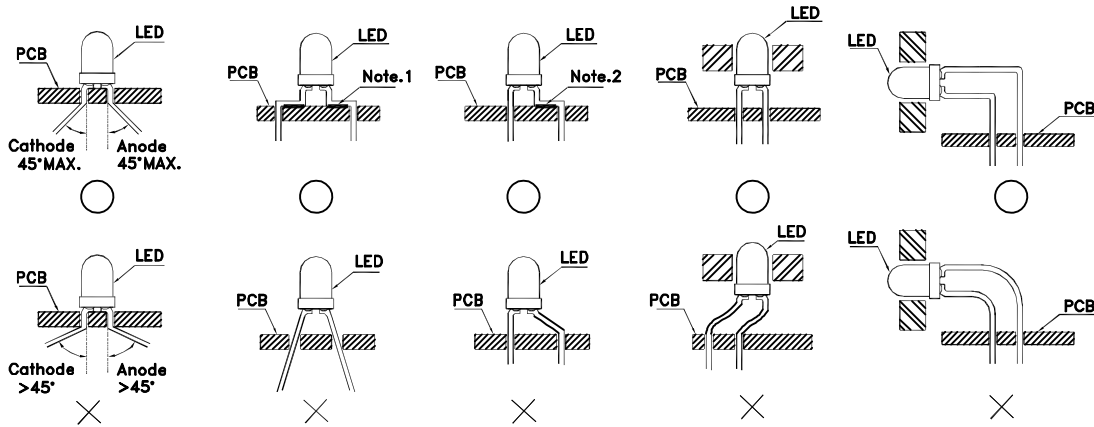


Fig.1

”○” Correct mounting method ”×” Incorrect mounting method

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)

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

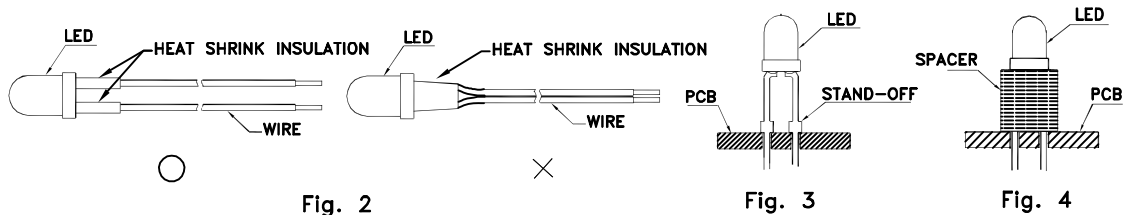


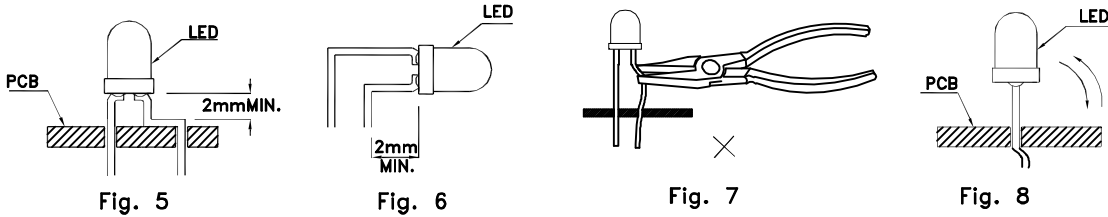
Fig. 2

Fig. 3

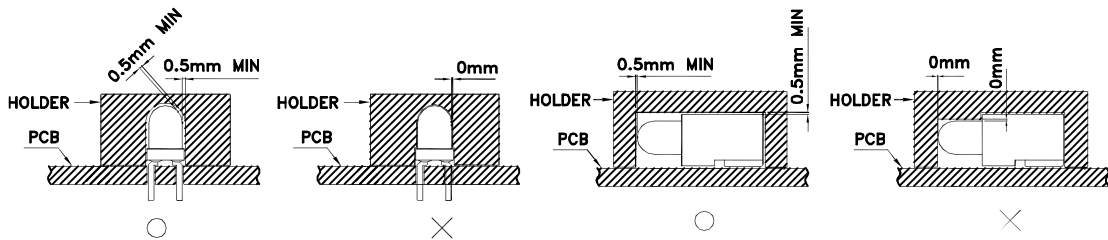
Fig. 4

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

6. Do not bend the leads more than twice. (Fig. 8)



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

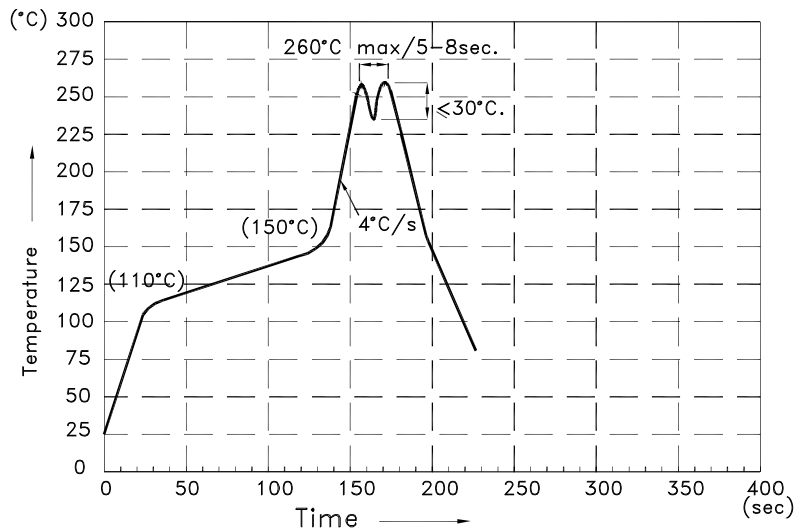


8. The tip of the soldering iron should never touch the lens epoxy.

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

10. 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.

11. Recommended Wave Soldering Profile for Kingbright Thru-Hole Products



**NOTES:**

1. Recommend the wave temperature 245°C~260°C. The maximum soldering temperature should be less than 260°C.
2. Do not apply stress on epoxy resins when temperature is over 85°C.
3. The soldering profile apply to the lead free soldering (Sn/Cu/Ag alloy).
4. During wave soldering, the PCB top-surface temperature should be kept below 105°C.
5. No more than once.