

**2.5x5mm RECTANGULAR SOLID LAMP**

Part Number: WP513HDT

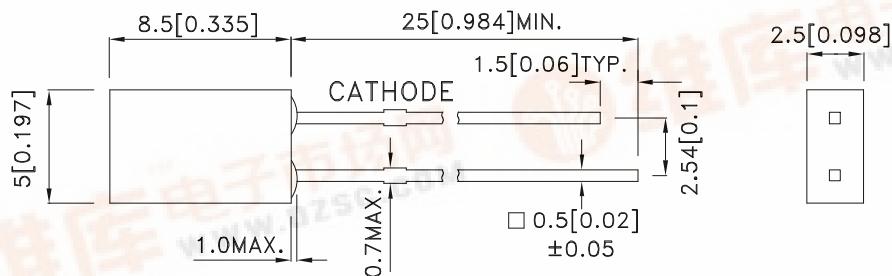
Bright Red

**Features**

- LOW POWER CONSUMPTION.
- RELIABLE AND RUGGED.
- EXCELLENT UNIFORMITY OF LIGHT OUTPUT.
- SUITABLE FOR LEVEL INDICATOR.
- I.C. COMPATIBLE.
- 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. Specifications are subject to change without notice.



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## Selection Guide

Part No.	Dice	Lens Type	I <sub>V</sub> (mcd) [2] @ 10mA		Viewing Angle [1]
			Min.	Typ.	
WP513HDT	Bright Red (GaP)	RED DIFFUSED	0.4	1	110°

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	Bright Red	700		nm	I <sub>F</sub> =20mA
λD [1]	Dominant Wavelength	Bright Red	660		nm	I <sub>F</sub> =20mA
Δλ1/2	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.

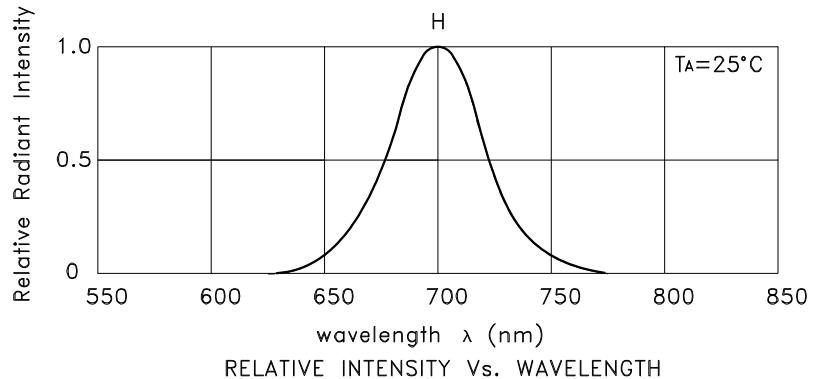
## Absolute Maximum Ratings at TA=25°C

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:

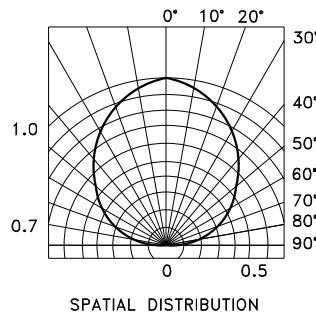
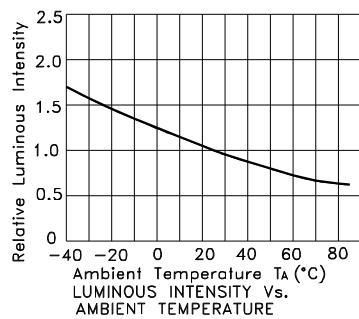
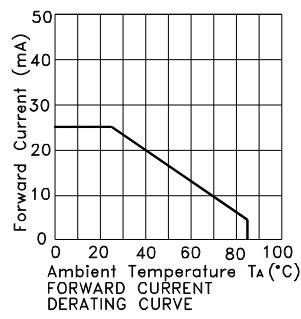
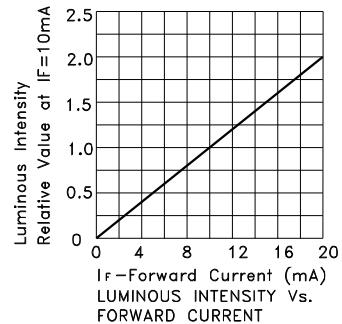
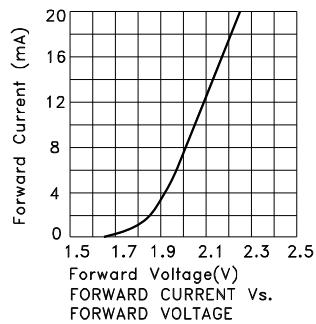
1. 1/10 Duty Cycle, 0.1ms Pulse Width.
2. 2mm below package base.
3. 5mm below package base.

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**Bright Red**

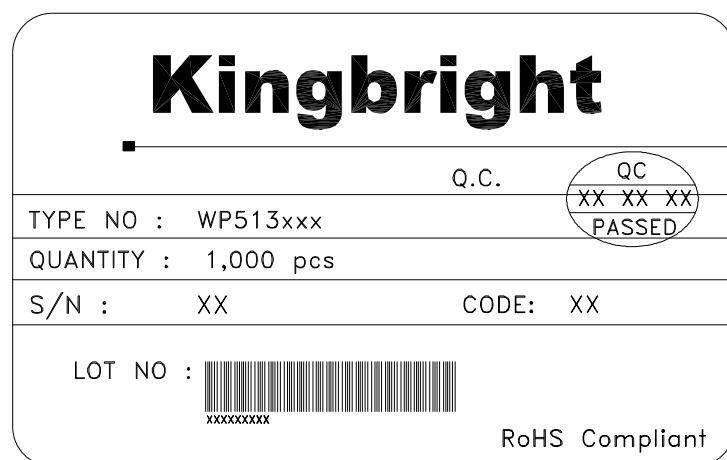
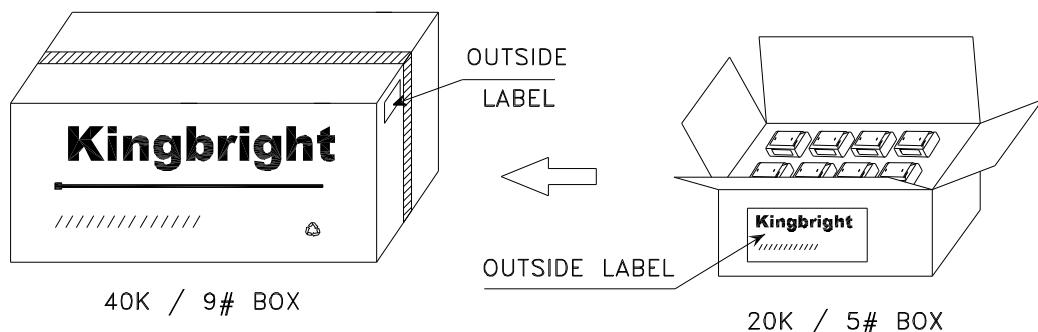
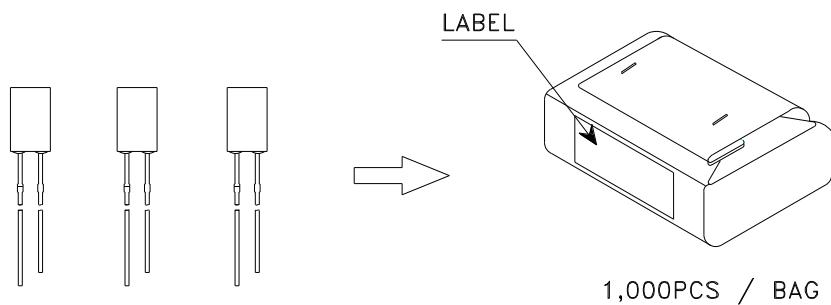
**WP513HDT**



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## PACKING & LABEL SPECIFICATIONS

WP513HDT



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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)

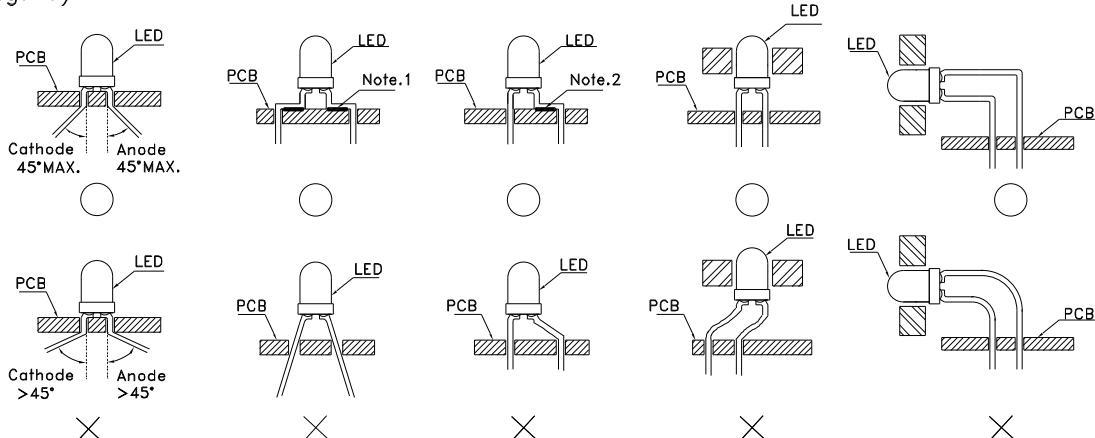


Fig. 1

“○” 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)

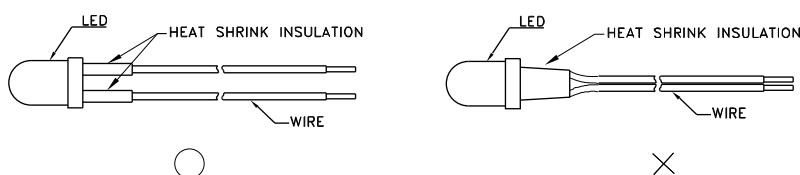


Fig. 2

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

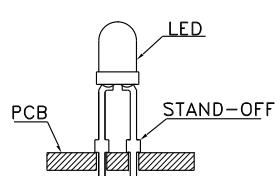


Fig. 3

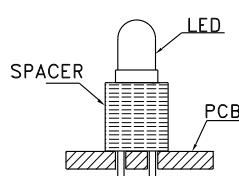


Fig. 4

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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)

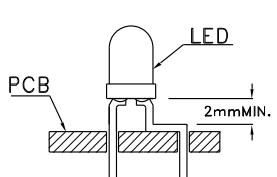


Fig. 5

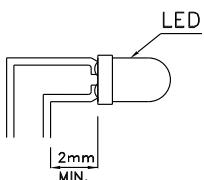


Fig. 6

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)

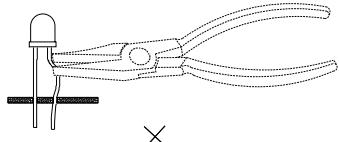


Fig. 7

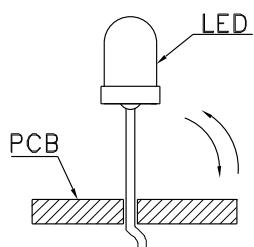


Fig. 8

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.

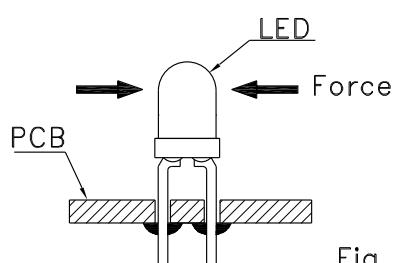


Fig. 9