

## WP937MD/2YGW

T-1 (3mm) Bi-Level Circuit Board Indicator

### DESCRIPTIONS

- The Yellow source color devices are made with Gallium Arsenide Phosphide on Gallium Phosphide Yellow Light Emitting Diode
- The Green source color devices are made with Gallium Phosphide Green Light Emitting Diode

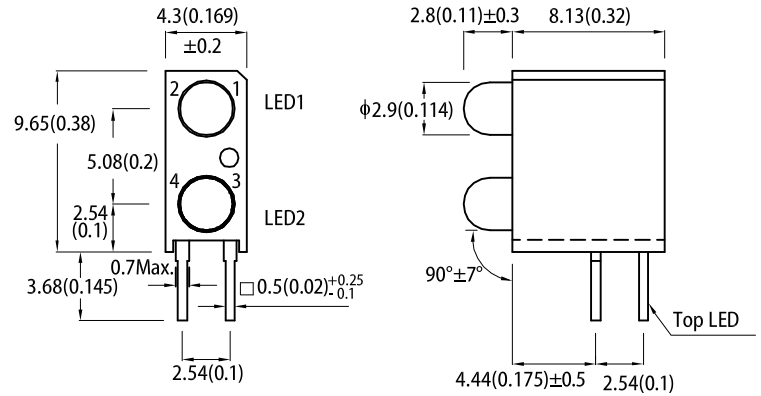
### FEATURES

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

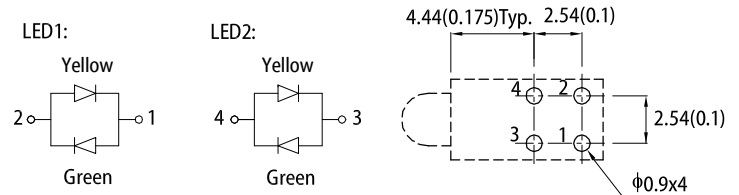
### APPLICATIONS

- Status indicator
- Illuminator
- Signage applications
- Decorative and entertainment lighting
- Commercial and residential architectural lighting

### PACKAGE DIMENSIONS



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 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 Number	Emitting Color (Material)	Lens Type	Iv (mcd) @ 20mA <sup>[2]</sup>		Viewing Angle <sup>[1]</sup>
			Min.	Typ.	2θ1/2
WP937MD/2YGW	■ Yellow (GaAsP/GaP)	White Diffused	4	8	60°
	■ Green (GaP)		6	14	

Notes:  
 1.  $\theta_{1/2}$  is the angle from optical centerline where the luminous intensity is 1/2 of the optical peak value.  
 2. Luminous intensity / luminous flux:  $\pm 15\%$ .  
 3. Luminous intensity value is traceable to CIE127-2007 standards.

**ELECTRICAL / OPTICAL CHARACTERISTICS at T<sub>A</sub>=25°C**

Parameter	Symbol	Emitting Color	Value		Unit
			Typ.	Max.	
Wavelength at Peak Emission I <sub>F</sub> = 20mA	λ <sub>peak</sub>	Yellow Green	590 565	-	nm
Dominant Wavelength I <sub>F</sub> = 20mA	λ <sub>dom</sub> <sup>[1]</sup>	Yellow Green	588 568	-	nm
Spectral Bandwidth at 50% Φ REL MAX I <sub>F</sub> = 20mA	Δλ	Yellow Green	35 30	-	nm
Capacitance	C	Yellow Green	20 15	-	pF
Forward Voltage I <sub>F</sub> = 20mA	V <sub>F</sub> <sup>[2]</sup>	Yellow Green	2.1 2.2	2.5 2.5	V

## Notes:

1. The dominant wavelength (λ<sub>d</sub>) above is the setup value of the sorting machine. (Tolerance λ<sub>d</sub> : ±1nm.)
2. Forward voltage: ±0.1V.
3. Wavelength value is traceable to CIE127-2007 standards.
4. Excess driving current and / or operating temperature higher than recommended conditions may result in severe light degradation or premature failure.

**ABSOLUTE MAXIMUM RATINGS at T<sub>A</sub>=25°C**

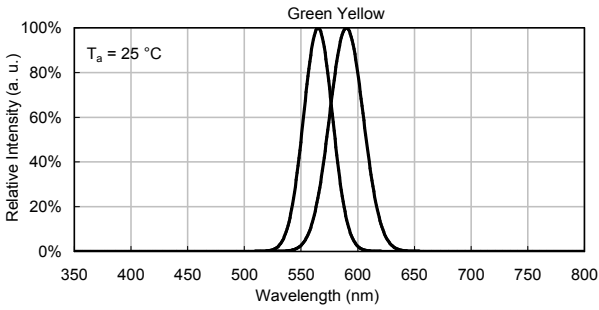
Parameter	Symbol	Value		Unit
		Yellow	Green	
Power Dissipation	P <sub>D</sub>	75	62.5	mW
Junction Temperature	T <sub>j</sub>	110	110	°C
Operating Temperature	T <sub>op</sub>	-40 to +85		°C
Storage Temperature	T <sub>stg</sub>	-40 to +85		°C
DC Forward Current	I <sub>F</sub>	30	25	mA
Peak Forward Current	I <sub>FM</sub> <sup>[1]</sup>	140	140	mA
Electrostatic Discharge Threshold (HBM)	-	8000	8000	V
Lead Solder Temperature <sup>[2]</sup>		260°C For 3 Seconds		
Lead Solder Temperature <sup>[3]</sup>		260°C For 5 Seconds		

## Notes:

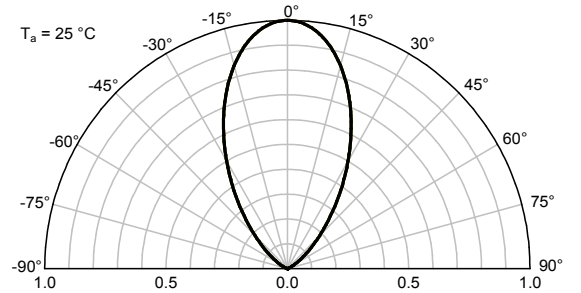
1. 1/10 Duty Cycle, 0.1ms Pulse Width.
2. 2mm below package base.
3. 5mm below package base.
4. Relative humidity levels maintained between 40% and 60% in production area are recommended to avoid the build-up of static electricity – Ref JEDEC/JESD625-A and JEDEC/J-STD-033.

### TECHNICAL DATA

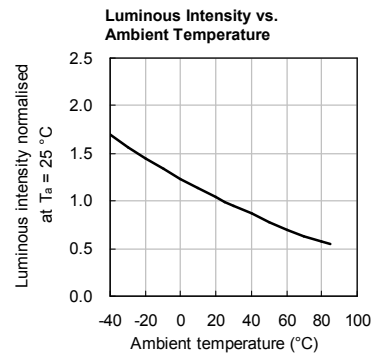
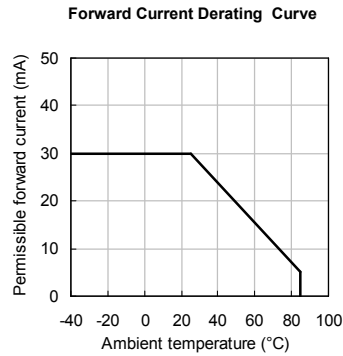
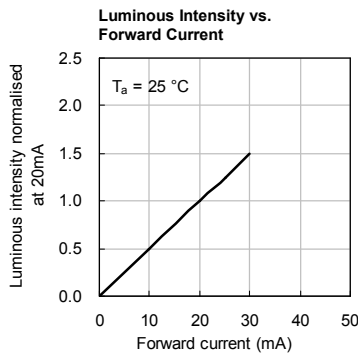
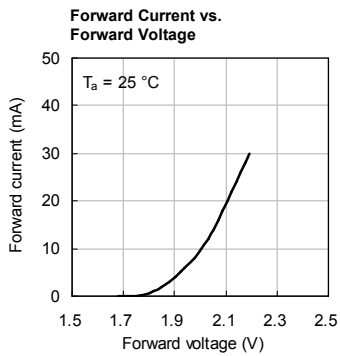
#### RELATIVE INTENSITY vs. WAVELENGTH



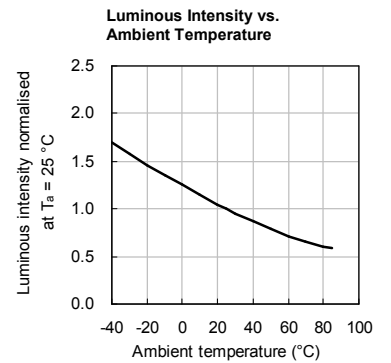
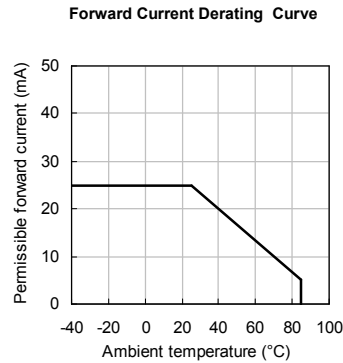
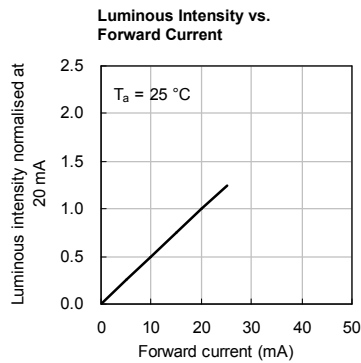
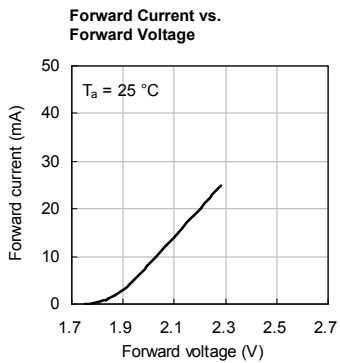
#### SPATIAL DISTRIBUTION



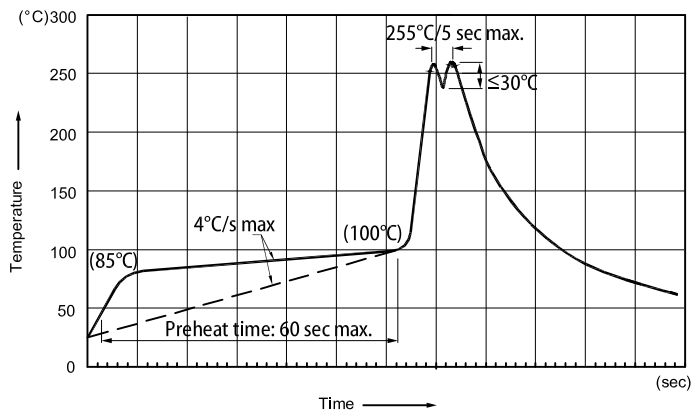
### YELLOW



### GREEN



#### RECOMMENDED WAVE SOLDERING PROFILE



#### Notes:

1. 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
2. Peak wave soldering temperature between 245°C ~ 255°C for 3 sec (5 sec max).
3. Do not apply stress to the epoxy resin while the temperature is above 85°C.
4. Fixtures should not incur stress on the component when mounting and during soldering process.
5. SAC 305 solder alloy is recommended.
6. No more than one wave soldering pass.