

WP130WDT/GYW

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



DESCRIPTIONS

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

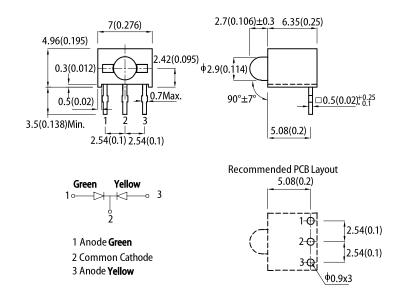
FEATURES

- · Pre-trimmed leads for pc board mounting
- 3 leads with common lead
- Black case enhances contrast ratio
- 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



Notes

- All dimensions are in millimeters (inches).
 Tolerance is ±0.25(0.01") unless otherwise noted.
- Lead spacing is measured where the leads emerge from the package.
 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	lv (mcd) @ 20mA ^[2]		Viewing Angle ^[1]
			Min.	Тур.	201/2
WP130WDT/GYW	Green (GaP)	White Diffused	18	40	60°
	Yellow (GaAsP/GaP)		10	20	

Notes

- 1. 01/2 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.

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ELECTRICAL / OPTICAL CHARACTERISTICS at T_A=25°C

Parameter	Symbol	Emitting Color	Value		1114
Parameter			Тур.	Max.	Unit
Wavelength at Peak Emission I_F = 20mA	λ_{peak}	Green Yellow	565 590	-	nm
Dominant Wavelength I _F = 20mA	λ _{dom} ^[1]	Green Yellow	568 588	-	nm
Spectral Bandwidth at 50% Φ REL MAX I_{F} = 20mA	Δλ	Green Yellow	30 35	-	nm
Capacitance	С	Green Yellow	15 20	-	pF
Forward Voltage $I_F = 20 \text{mA}$	V _F ^[2]	Green Yellow	2.2 2.1	2.5 2.5	V
Reverse Current ($V_R = 5V$)	I _R	Green Yellow	-	10 10	uA
Temperature Coefficient of λ_{peak} I_F = 20mA, -10°C \leq T \leq 85°C	TC _{λpeak}	Green Yellow	0.1 0.12	-	nm/°C
Temperature Coefficient of λ_{dom} I _F = 20mA, -10°C \leq T \leq 85°C	TC _{λdom}	Green Yellow	0.06 0.07	-	nm/°C
Temperature Coefficient of V _F I _F = 20mA, -10°C \leq T \leq 85°C	TCv	Green Yellow	-2 -2	-	mV/°C

Notes:

The dominant wavelength (λd) above is the setup value of the sorting machine. (Tolerance λd : ±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 T_A=25°C

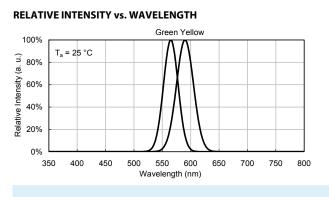
Demonster	Quarte al	Valu	11-14		
Parameter	Symbol	Green	Yellow	Unit	
Power Dissipation	P _D	62.5	75	mW	
Reverse Voltage	V _R	5	5	V	
Junction Temperature	Tj	110	110	°C	
Operating Temperature	T _{op}	-40 to +85		°C	
Storage Temperature	T _{stg}	-40 to +85		°C	
DC Forward Current	I _F	25	30	mA	
Peak Forward Current	I _{FM} ^[1]	140	140	mA	
Electrostatic Discharge Threshold (HBM)	-	8000	8000	V	
Thermal Resistance (Junction / Ambient)	R _{th JA} ^[2]	500	500	°C/W	
Thermal Resistance (Junction / Solder point)	R _{th JS} ^[2]	330	300	°C/W	
Lead Solder Temperature [3]		260°C For 3 Seconds			
Lead Solder Temperature ^[4]	260°C For 5 Seconds				

Notes: 1. 1/10 Duty Cycle, 0.1ms Pulse Width. 2. R_{In JA}, R_{th JS} Results from mounting on PC board FR4 (pad size ≥ 16 mm² per pad). 3. 2mm below package base. 4. 5mm below package base. 5. 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.

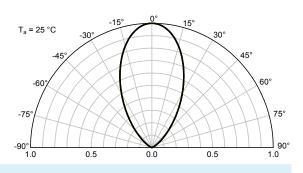
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TECHNICAL DATA



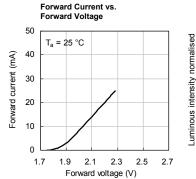
SPATIAL DISTRIBUTION

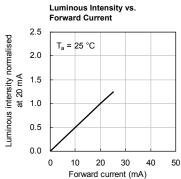


GREEN



Luminous Intensity vs.





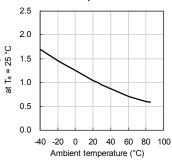
T_a = 25 °C

10 20 30 40 50

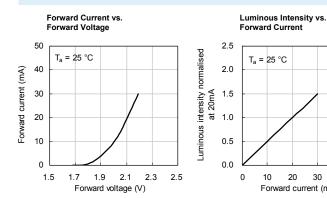
Forward current (mA)

50 Permissible forward current (mA) Luminous intensity normalised 40 30 20 10 0 20 40 60 80 100 -40 -20 0 Ambient temperature (°C)

Ambient Temperature



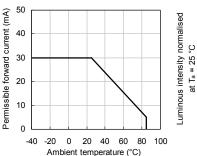
YELLOW

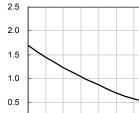




Forward Current Derating Curve

Luminous Intensity vs. Ambient Temperature



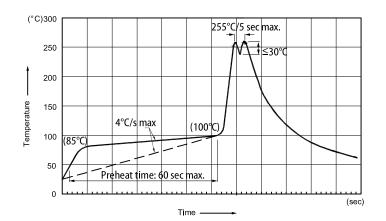


-40 -20 0 20 40 60 80 100

Ambient temperature (°C)

0.0

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

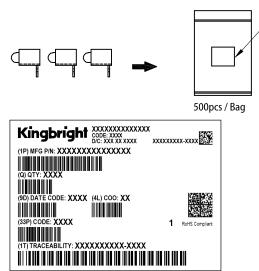
- Peak wave soldering temperature between 245°C ~ 255°C for 3 sec (5 sec max).
 Do not apply stress to the epoxy resin while the temperature is above 85°C.
 Fixtures should not incur stress on the component when mounting and during soldering process.

5. SAC 305 solder alloy is recommended.
 6. No more than one wave soldering pass

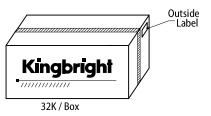
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PACKING & LABEL SPECIFICATIONS







PRECAUTIONS

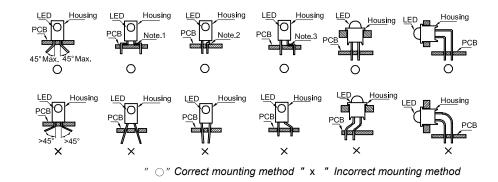
Storage Conditions

- 1. Avoid continued exposure to the condensing moisture environment and keep the product away from rapid transitions in ambient temperature.
- 2. LEDs should be stored with temperature \leq 30°C and relative humidity < 60%.
- 3. 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 ~ 100°C.

Label

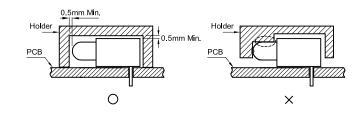
LED Mounting Method

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



Lead Forming Procedures

- 1. During soldering, component covers and holders should leave clearance to avoid placing damaging stress on the LED during soldering.
- 2. The tip of the soldering iron should never touch the lens epoxy.
- 3. Through-hole LEDs are incompatible with reflow soldering.
- 4. 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.



PRECAUTIONARY NOTES

- 1. The information included in this document reflects representative usage scenarios and is intended for technical reference only.
- The part number, type, and specifications mentioned in this document are subject to future change and improvement without notice. Before production usage customer should refer to
 the latest datasheet for the updated specifications.
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