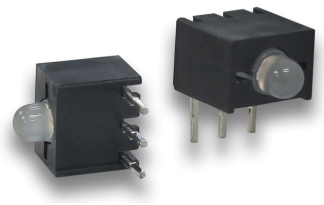
Kingbright

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

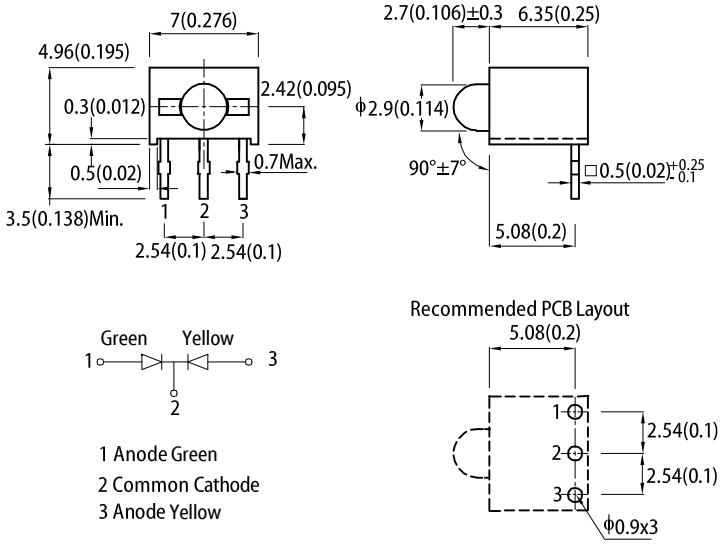
FEATURES

- 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:
1. All dimensions are in millimeters (inches).
2. Tolerance is ±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 [2]		Viewing Angle [1]
			Min.	Typ.	2θ1/2
WP130WDT/GYW	Green (GaP)	White Diffused	18	40	60°
	Yellow (GaAsP/GaP)		10	20	

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%.
3. Luminous intensity value is traceable to CIE127-2007 standards.

ELECTRICAL / OPTICAL CHARACTERISTICS at T_A=25°C

Parameter	Symbol	Emitting Color	Value		Unit
			Typ.	Max.	
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	C	Green Yellow	15 20	-	pF
Forward Voltage I_F = 20mA	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	μA
Temperature Coefficient of λ_{peak} I_F = 20mA, -10°C ≤ T ≤ 85°C	$TC_{\lambda peak}$	Green Yellow	0.1 0.12	-	nm/°C
Temperature Coefficient of λ_{dom} I_F = 20mA, -10°C ≤ T ≤ 85°C	$TC_{\lambda dom}$	Green Yellow	0.06 0.07	-	nm/°C
Temperature Coefficient of V_F I_F = 20mA, -10°C ≤ T ≤ 85°C	TC_V	Green Yellow	-2 -2	-	mV/°C

Notes:
1. The dominant wavelength (λd) above is the setup value of the sorting machine. (Tolerance λd : ±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.

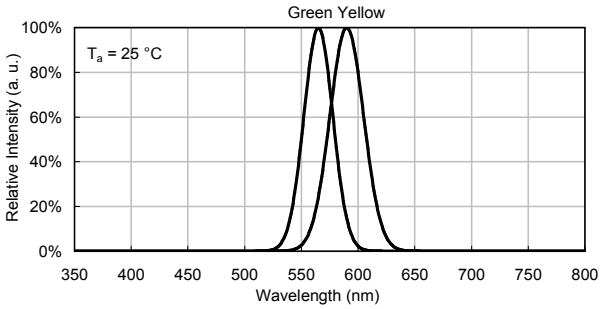
ABSOLUTE MAXIMUM RATINGS at T_A=25°C

Parameter	Symbol	Value		Unit
		Green	Yellow	
Power Dissipation	P_D	62.5	75	mW
Reverse Voltage	V_R	5	5	V
Junction Temperature	T_j	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]	530	610	°C/W
Thermal Resistance (Junction / Solder point)	$R_{th\ JS}$ [2]	330	380	°C/W
Lead Solder Temperature [3]		260°C For 3 Seconds		
Lead Solder Temperature [4]		260°C For 5 Seconds		

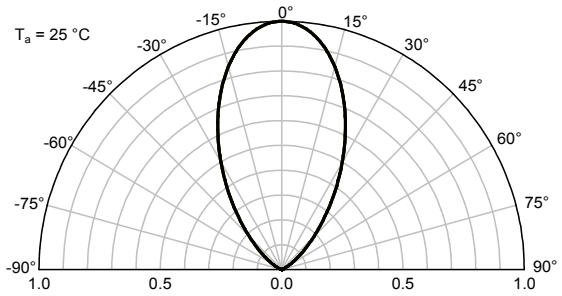
Notes:
1. 1/10 Duty Cycle, 0.1ms Pulse Width.
2. $R_{th\ JA}$,$R_{th\ JS}$ Results from mounting on PC board FR4 (pad size ≥ 16 mm^2 per pad).
3. 2mm below package base.
4. 5mm below package base.
5. Relative humidity levels maintained between 40% and 60% in production area are recommended to avoid the build-up of static electricity – Ref JEDEC/JESD625-A and JEDEC/J-STD-033.

TECHNICAL DATA

RELATIVE INTENSITY vs. WAVELENGTH

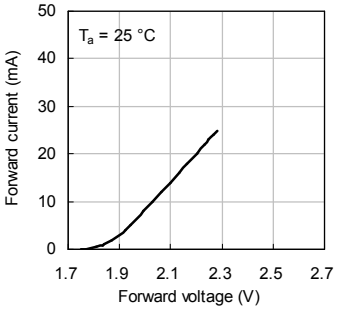


SPATIAL DISTRIBUTION

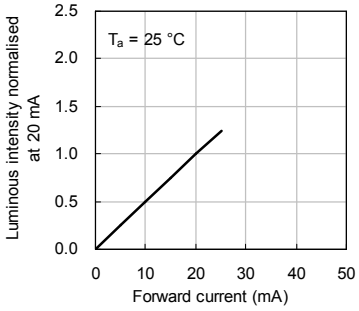


GREEN

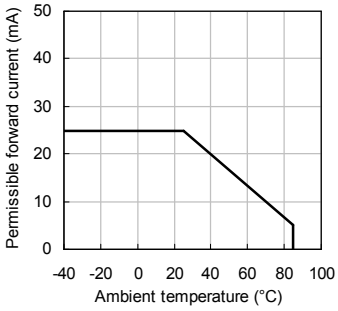
Forward Current vs. Forward Voltage



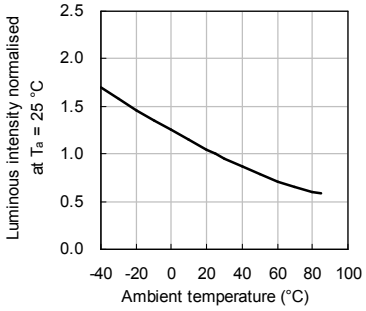
Luminous Intensity vs. Forward Current



Forward Current Derating Curve

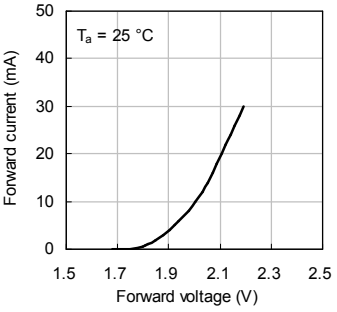


Luminous Intensity vs. Ambient Temperature

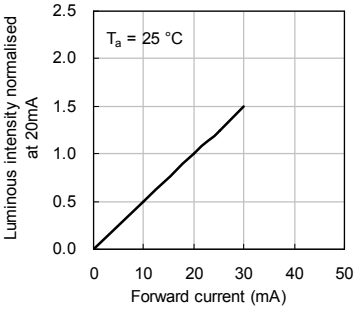


YELLOW

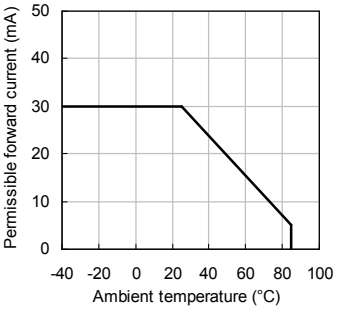
Forward Current vs. Forward Voltage



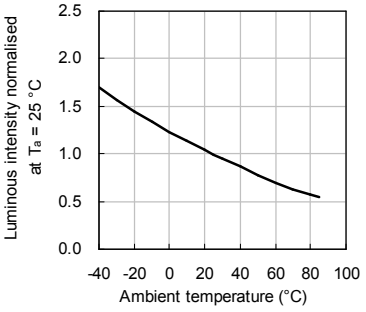
Luminous Intensity vs. Forward Current



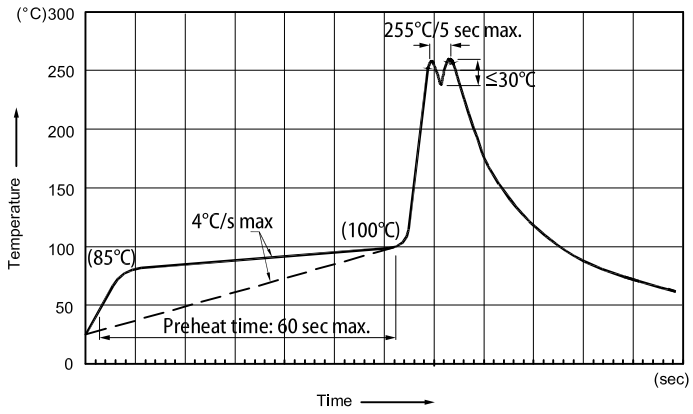
Forward Current Derating Curve



Luminous Intensity vs. Ambient Temperature



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.*

