

WP917CK/4EGWT

2 x 3 mm Quad-Level Circuit Board Indicator

DESCRIPTIONS

- The High Efficiency Red source color devices are made with Gallium Arsenide Phosphide on Gallium Phosphide Orange Light Emitting Diode
- The Green source color devices are made with Gallium Phosphide Green Light Emitting Diode

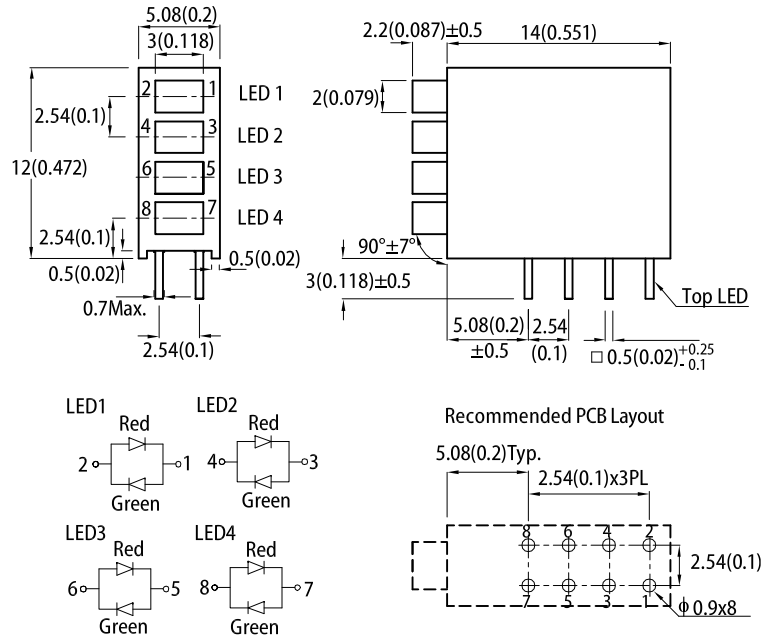
FEATURES

- Quad-level design, save board space
- Different color combination available
- Black case enhances contrast
- 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 $\pm 0.25(0.01)$ 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 ^[2] | | Viewing Angle ^[1] |
|---------------|--|----------------|--------------------------------|------|------------------------------|
| | | | Min. | Typ. | 2θ1/2 |
| WP917CK/4EGWT | ■ High Efficiency Red (GaAsP/GaP) | White Diffused | 5 | 10 | 140° |
| | | | *2 | *6 | |
| | ■ Green (GaP) | | 5 | 10 | |
| | | | *5 | *10 | |

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: +/-15%.
 * 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} | High Efficiency Red Green | 627 565 | - | nm |
| Dominant Wavelength I _F = 20mA | λ_{dom} ^[1] | High Efficiency Red Green | 617 568 | - | nm |
| Spectral Bandwidth at 50% Φ REL MAX I _F = 20mA | $\Delta\lambda$ | High Efficiency Red Green | 45 30 | - | nm |
| Capacitance | C | High Efficiency Red Green | 15 15 | - | pF |
| Forward Voltage I _F = 20mA | V _F ^[2] | High Efficiency Red Green | 2.0 2.2 | 2.5 2.5 | V |

Notes:

1. The dominant wavelength (λ_d) above is the setup value of the sorting machine. (Tolerance λ_d : $\pm 1\text{nm}$.)
2. Forward voltage: $\pm 0.1\text{V}$.
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

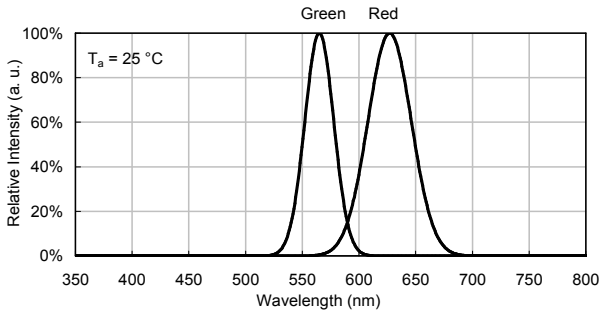
| Parameter | Symbol | Value | | Unit |
|---|--------------------------------|---------------------|-------|------|
| | | High Efficiency Red | Green | |
| Power Dissipation | P _D | 75 | 62.5 | mW |
| Junction Temperature | T _j | 125 | 110 | °C |
| Operating Temperature | T _{op} | -40 to +85 | | °C |
| Storage Temperature | T _{stg} | -40 to +85 | | °C |
| DC Forward Current | I _F | 30 | 25 | mA |
| Peak Forward Current | I _{FM} ^[1] | 160 | 140 | mA |
| Electrostatic Discharge Threshold (HBM) | - | 8000 | 8000 | V |
| Lead Solder Temperature ^[2] | | 260°C For 3 Seconds | | |
| Lead Solder Temperature ^[3] | | 260°C For 5 Seconds | | |

Notes:

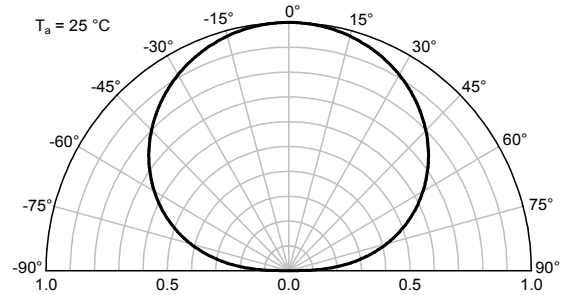
1. 1/10 Duty Cycle, 0.1ms Pulse Width.
2. 2mm below package base.
3. 5mm below package base.
4. Relative humidity levels maintained between 40% and 60% in production area are recommended to avoid the build-up of static electricity – Ref JEDEC/JESD625-A and JEDEC/J-STD-033.

TECHNICAL DATA

RELATIVE INTENSITY vs. WAVELENGTH

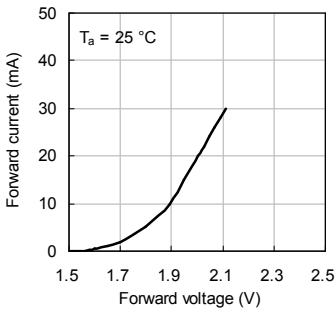


SPATIAL DISTRIBUTION

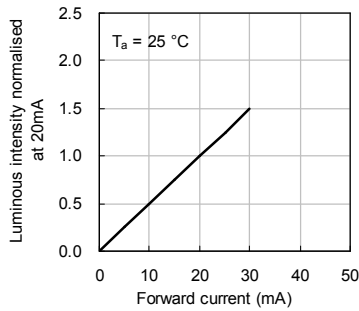


HIGH EFFICIENCY RED

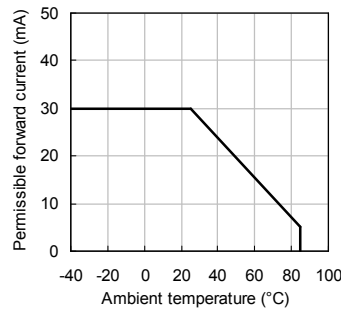
Forward Current vs. Forward Voltage



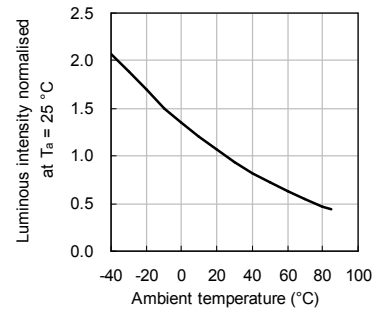
Luminous Intensity vs. Forward Current



Forward Current Derating Curve

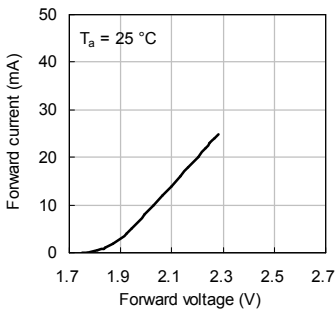


Luminous Intensity vs. Ambient Temperature

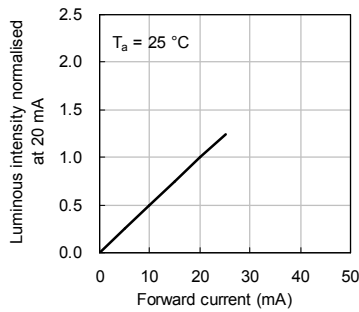


GREEN

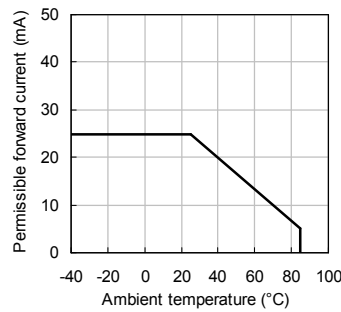
Forward Current vs. Forward Voltage



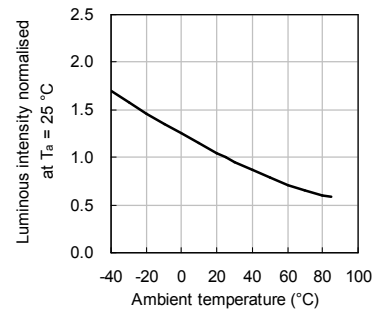
Luminous Intensity vs. Forward Current



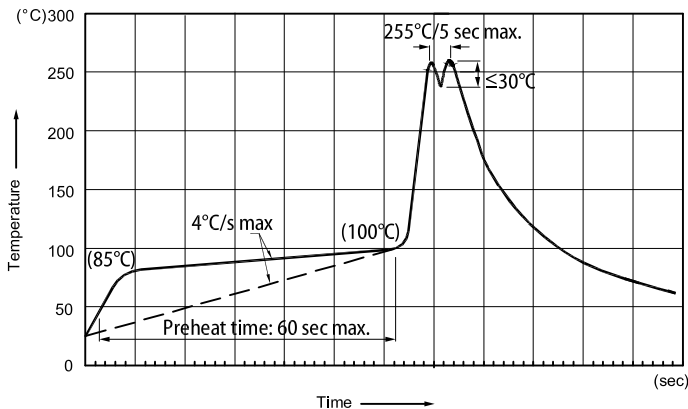
Forward Current Derating Curve



Luminous Intensity vs. Ambient Temperature



RECOMMENDED WAVE SOLDERING PROFILE



Notes:

1. Recommend pre-heat temperature of $105\text{ }^\circ\text{C}$ 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 $260\text{ }^\circ\text{C}$.
2. Peak wave soldering temperature between $245\text{ }^\circ\text{C}$ ~ $255\text{ }^\circ\text{C}$ for 3 sec (5 sec max).
3. Do not apply stress to the epoxy resin while the temperature is above $85\text{ }^\circ\text{C}$.
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.