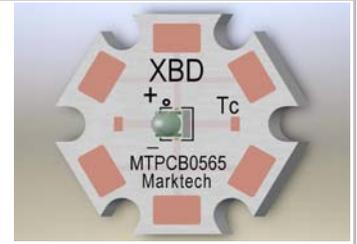


Cree XB-D Color Series

Cree XLamp XB-D color LEDs extend the double lumens-per-dollar performance of the XB package to color LEDs, delivering up to 40% higher maximum light output than XP-E color LEDs. The combination of performance and small size of XB-D color LEDs enable better color mixing and lower system cost.



FEATURES

- > Cree's smallest lighting class LED: 2.45 x 2.45 mm
- > 1A Maximum Drive Current
- > Wide viewing angle: 115°(white) to 140° (red)
- > Electrically Neutral Thermal Path

APPLICATIONS

- > Non-Directional
- > Directional
- > Downlight
- > Consumer Portable

FLUX CHARACTERISTICS @ 85°C

| COLOR | DWL (nm) | MIN.FLUX (LM) @350MA | KIT USED |
|------------|----------|----------------------|----------|
| Blue | 465-485 | 35.2 | 0Z01 |
| Green | 520-535 | 93.9 | 0B01 |
| Red-Orange | 610-620 | 80.6 | 0901 |
| Red | 620-630 | 67.2 | 0701 |

| CHARACTERISTICS | UNIT | MINIMUM | TYPICAL | MAXIMUM |
|--|---------|---------|---------|---------|
| Thermal resistance, junction to solder point - white, royal blue, blue | °C/W | | 6.5 | |
| Thermal resistance, junction to solder point - green | °C/W | | 11 | |
| Thermal resistance, junction to solder point - amber | °C/W | | 7 | |
| Thermal resistance, junction to solder point - red-orange, red | °C/W | | 5 | |
| Viewing angle (FWHM) - white | degrees | | 115 | |
| Viewing angle (FWHM) - royal blue, blue, green | degrees | | 135 | |
| Viewing angle (FWHM) - amber, red-orange, red | degrees | | 140 | |
| Temperature coefficient of voltage - white | mV/°C | | -2.5 | |
| Temperature coefficient of voltage - royal blue, blue, green | mV/°C | | -3.3 | |
| Temperature coefficient of voltage - amber, red-orange, red | mV/°C | | -2 | |
| ESD classification (HBM per Mil-Std-883D) | | | Class 2 | |
| DC forward current | mA | | | 1000 |
| Reverse voltage | V | | | -5 |
| Forward voltage (@ 350 mA, 85 °C) - white | V | | 2.9 | 3.5 |
| Forward voltage (@ 350 mA, 25 °C) - royal blue, blue | V | | 3.1 | 3.7 |
| Forward voltage (@ 350 mA, 25 °C) - green | V | | 3.3 | 3.9 |
| Forward voltage (@ 350 mA, 25 °C) - amber, red-orange, red | V | | 2.25 | 2.6 |
| LED junction temperature | °C | | | 150 |

It is highly recommended for the user to review the CREE XBD Series page for additional and most recent technical data at:
<http://www.cree.com/led-components-and-modules/products/xlamp/discrete-directional/xlamp-xbd>

- * Exceeding maximum ratings may damage the LED and cause potential safety hazards.
- * Elevated operating temperatures can be expected to negatively impact the service life (lumen output)
- * All data is related to entire assembly. Data reflects statistical mean values. Actual data may differ depending on variances in the manufacturing process.
- * End users need to take into account the lumen depreciation as the temperature rises with various thermal solutions installed.

Note 1: Using continuously under elevated loads (i.e. the application of high temperature/current/voltage or a significant change in temperature, etc.) may cause this product to significantly decrease in reliability even if the operating conditions are within the absolute maximum ratings.

Note 2: The thermal resistance from the LED junction to ambient temperature, $R_{th(j-a)}$, should be kept below 100C/W so that the LED is not exposed to a condition beyond the absolute maximum ratings.

Note 3: The temperature of the LED assembly must be measured at the TC-point according to EN60598-1 in a thermally constant status with a temperature sensor or a temperature sensitive label.

Hardware (not included)

- > Mount with #4 Machine Screws.
- > 16AWG Maximum Wire Gauge.
- > Use only with constant current power supplies.

PCB Fabrication

- > Layer Count: 1
- > Core Material: 6061-T6 Aluminum
- > Single Layer Copper Weight: 1oz
- > Solder Mask: White
- > Finishing Plating: Pb Free HASL