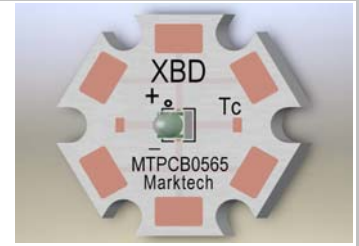


## Cree XB-D Color Series

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  $10^{\circ}\text{C/W}$  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

