

## Cree XBD Series

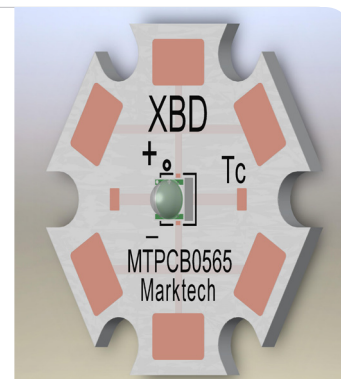
Leveraging Cree's latest silicon carbide technology and expertise, the XBD LED delivers up to 139 lumens and 136 lumens per watt in cool white (6000K) or up to 107 lumens and 105 lumens per watt in warm white (3000K), both at 350 mA and 85°C.

### FEATURES

- > 80-min CRI White and 70-min CRI Cool White
- > 1A Maximum Drive Current
- > Low Thermal Resistance: 6.5°C/W
- > Electrically Neutral Thermal Path

### APPLICATIONS

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



## Flux Characteristics ( $T_j=85^{\circ}\text{C}$ --White)



| COLOR TEMPERATURE | CCT (TYP.)(°K)* | MIN.FLUX (LM) @350MA | KIT USED |
|-------------------|-----------------|----------------------|----------|
| Cool White        | 6000--6500      | 122                  | OF51     |
| Neutral White     | 4750--5000      | 107                  | LDE3     |
| Warm White        | 3000--3250      | 100                  | LBE7     |

\*See Cree Specifications

## \*Absolute Maximum Ratings (Note 1)

| ITEMS   | SYMBOL    | RATING  | UNIT  |
|---|-----------|---------|-------|
| Forward Current (Note 2)                        | $I_F$     | 1000    | mA    |
| Forward Voltage (@350mA, 85°C)                  | $V_F$     | 3.5     | V     |
| Reverse Voltage                                 | $V_R$     | -5.0    | V     |
| Temperature Coefficient of Forward Voltage      | $V_{TC}$  | -2.5    | mV/°C |
| Operating Temperature at $T_c$ Point (Note 2&3) | $T_{OPR}$ | 115     | °C    |
| Junction Temperature                            | $T_J$     | 150     | °C    |
| ESD Classification (HBM per MIL-STD-883D)       | --        | Class 2 | --    |

\* 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.

\* 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/qlamp/discrete-directional/qlamp-xbd>

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.

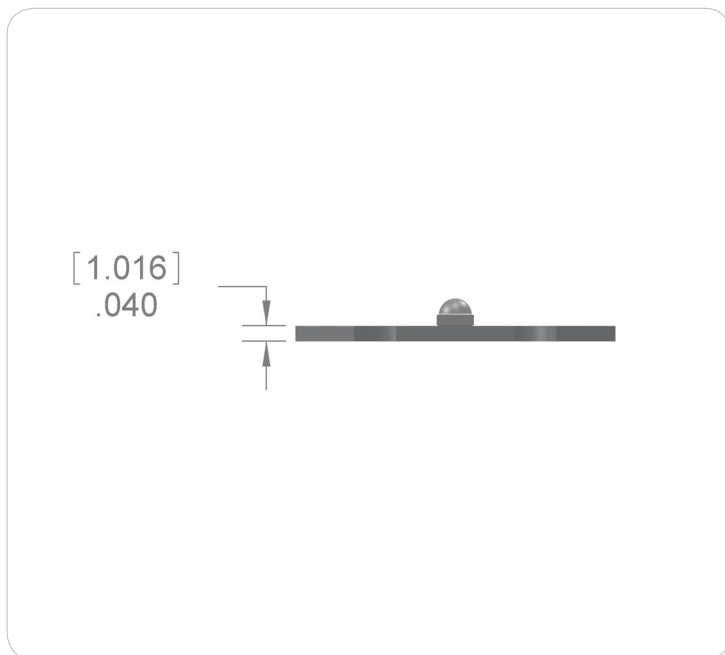
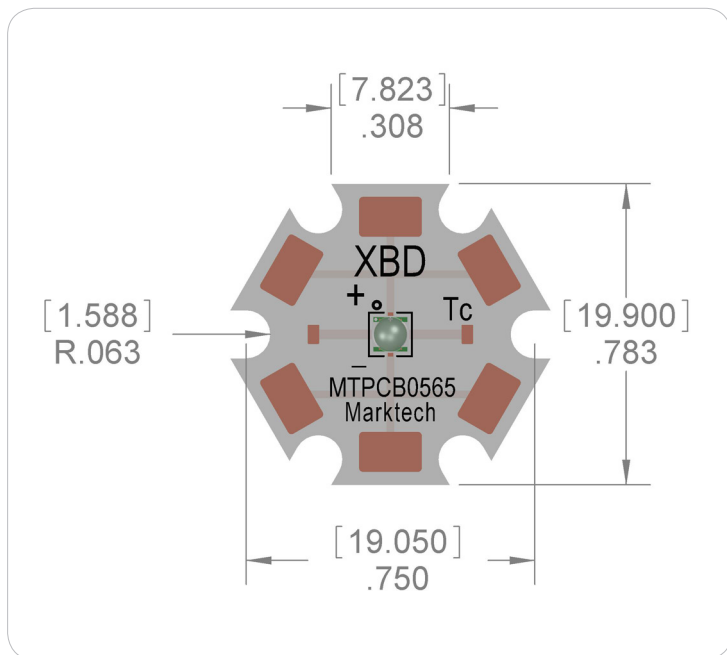
Note 3: The temperature of the LED assembly must be measured at the  $T_c$ -point according to EN60598-1 in a thermally constant status with a temperature sensor or a temperature sensitive label.

**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



The information contained herein is subject to change without notice.

2012-04-18