

# SuperBlue™ LEDs

## C430CB230-S0100

Cree's low-current SuperBlue LEDs combine highly efficient GaN with Cree's proprietary G•SiC® substrate to deliver the ultimate price/performance for blue LEDs. The C430CB230-S0100 is designed for use in backlighting and display applications. Cree's CB chips are sorted onto tape and compatible with most radial and SMT LED assembly processes.

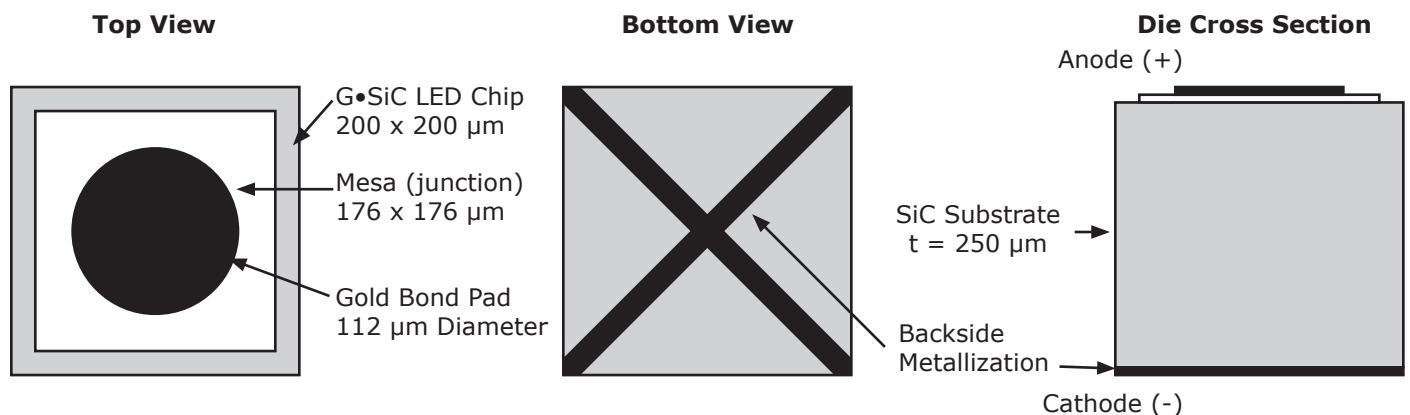
### FEATURES

- High Performance
  - 650  $\mu$ W (465 nm)
- Single Wire Bond Structure
- Class 2 ESD Rating

### APPLICATIONS

- Segmented Displays
- High-Resolution Video Displays

### C430CB230-S0100 Chip Diagram



Maximum Ratings at $T_A = 25^\circ\text{C}$ <small>Notes 1&amp;3</small>		C430CB230-S0100
DC Forward Current		15 mA
Peak Forward Current (1/10 duty cycle @ 1kHz)		35 mA
LED Junction Temperature		125°C
Reverse Voltage		5 V
Operating Temperature Range		-40°C to +100°C
Storage Temperature Range		-40°C to +100°C
Electrostatic Discharge Threshold (HBM) <sup>Note 2</sup>		1000 V
Electrostatic Discharge Classification (MIL-STD-883E) <sup>Note 2</sup>		Class 2

Typical Electrical/Optical Characteristics at $T_A = 25^\circ\text{C}$ , $I_f = 10\text{ mA}$ <small>Note 3</small>											
Part Number	Forward Voltage ( $V_f$ , V)		Radiant Flux (P, $\mu\text{W}$ )		Reverse Current [ $I(V_r=5V)$ , $\mu\text{A}$ ]	Flux (mIm)	Peak Wavelength ( $\lambda_d$ , nm)	Dominant Wavelength ( $\lambda_d$ , nm)			Full Width Half Max ( $\lambda_D$ , nm)
	Typ.	Max.	Min.	Typ.	Max.	Typ.	Typ.	Min.	Typ.	Max.	Typ.
C430CB230-S0100	4.0	4.5	425	650	10	40	428	462	465	466	60

Mechanical Specifications			C430CB230-S0100		
Description	Dimension		Tolerance		
P-N Junction Area ( $\mu\text{m}$ )	176 x 176		$\pm 25$		
Top Area ( $\mu\text{m}$ )	200 x 200		$\pm 25$		
Bottom Area ( $\mu\text{m}$ )	200 x 200		$\pm 25$		
Chip Thickness ( $\mu\text{m}$ )	250		$\pm 25$		
Au Bond Pad Diameter ( $\mu\text{m}$ )	112		$\pm 20$		
Au Bond Pad Thickness ( $\mu\text{m}$ )	1.2		$\pm 0.5$		
Back Contact Metal Area ( $\mu\text{m}$ )	20		$\pm 10$		

#### Notes:

- Maximum ratings are package dependent. The above ratings were determined using a T-1 3/4 package (with Hysol OS4000 epoxy) for characterization. Ratings for other packages may differ. The forward currents (DC and Peak) are not limited by the die but by the effect of the LED junction temperature on the package. The junction temperature limit of 125°C is a limit of the T-1 3/4 package; junction temperature should be characterized in a specific package to determine limitations. Assembly processing temperature must not exceed 325°C (<5 seconds).
- Product resistance to electrostatic discharge (ESD) according to the HBM is measured by simulating ESD using a rapid avalanche energy test (RAET). The RAET procedures are designed to approximate the maximum ESD ratings shown. The RAET procedure is performed on each die. The ESD classification of Class II is based on sample testing according to MIL-STD-883E.
- All products conform to the listed minimum and maximum specifications for electrical and optical characteristics, when assembled and operated at 10 mA within the maximum ratings shown above. Efficiency decreases at higher currents. Typical values given are within the range of average values expected by the manufacturer in large quantities and are provided for information only. All measurements were made using lamps in T-1 3/4 packages (with Hysol OS4000 epoxy). Optical characteristics measured in an integrating sphere using Illuminance A.
- Specifications are subject to change without notice.