SuperBlue™ LEDs
C430CB290-S0100

Cree's SuperBlue LEDs combine highly efficient GaN with Cree's proprietary G•SiC® substrate to deliver the ultimate price/performance for high-intensity blue LEDs. The C430CB290-S0100 is designed for use in high ambient-light conditions with a typical output of 1150 µW and a 465 nm dominant wavelength (at 20 mA). Cree's CB series chips are sorted onto tape and compatible with most radial and SMT LED assembly processes.

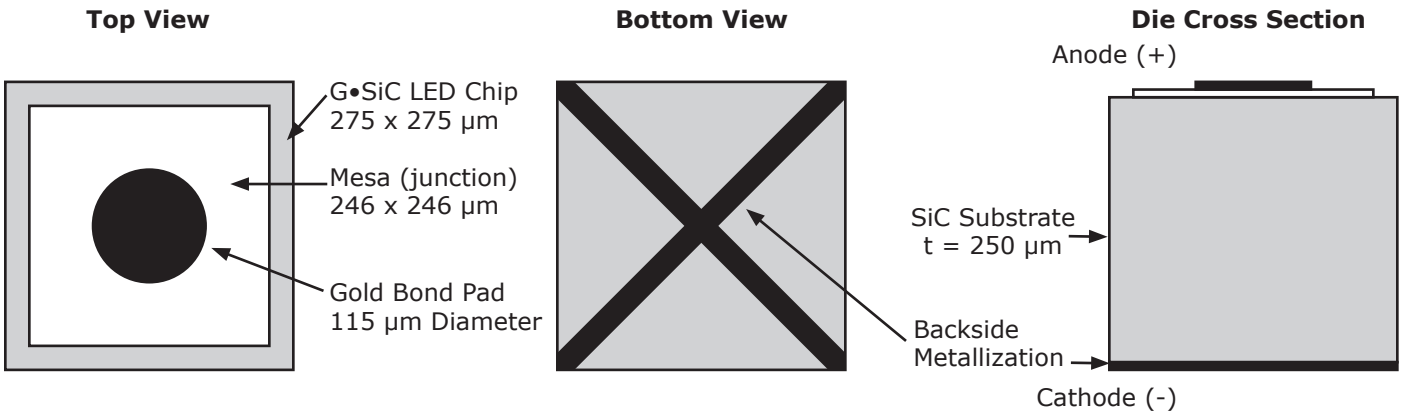
FEATURES

- High Performance – 1150 µW
- Superior SiC Substrate Technology
- 465 nm Dominant Wavelength
- Excellent Chip-to-Chip Consistency
- High Reliability

APPLICATIONS

- Full-Color Displays & Moving Message Signs
- Solid-State Incandescent Replacement Bulbs
- High Ambient Panel Indicators
- Color Printers & Scanners
- Medical & Analytical Instruments

C430CB290-S0100 Chip Diagram



Maximum Ratings at T_A = 25°C Notes 1&3	C430CB290-S0100
DC Forward Current	30 mA
Peak Forward Current (1/10 duty cycle @ 1kHz)	70 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) Note 2	1000 V
Electrostatic Discharge Classification (MIL-STD-883E) Note 2	Class 2

Typical Electrical/Optical Characteristics at T_A = 25°C, If = 20 mA Note 3

Part Number	Forward Voltage (V_f, V)		Radiant Flux (P, µW)		Reverse Current [I(Vr=5V), µA]	Flux (mlm)	Peak Wavelength (λ_d, nm)	Dominant Wavelength (λ_d, nm)			Full Width Half Max (λ_D, nm)
	Typ.	Max.	Min.	Typ.	Max.	Typ.	Typ.	Min.	Typ.	Max.	Typ.
C430CB290-S0100	4.0	4.5	850	1150	10	65	428	462	465	466	60

Mechanical Specifications	C430CB290-S0100	
Description	**Dimension**	**Tolerance**
P-N Junction Area (µm)	246 x 246	± 25
Top Area (µm)	275 x 275	± 25
Bottom Area (µm)	275 x 275	± 25
Chip Thickness (µm)	250	± 25
Au Bond Pad Diameter (µm)	115	± 20
Au Bond Pad Thickness (µm)	1.2	± 0.5
Back Contact Metal Area (µm)	20	-5, +10t

Notes:

1. 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).
2. 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 2 is based on sample testing according to MIL-STD-883E.
3. All products conform to the listed minimum and maximum specifications for electrical and optical characteristics when assembled and operated at 20 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.
4. Specifications are subject to change without notice.

Cree, Inc.
4600 Silicon Drive
Durham, NC 27703
USA Tel: +1.919.313.5300
Fax: +1.919.313.5778
www.cree.com