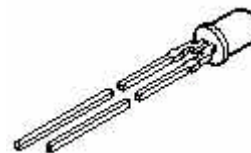


Features

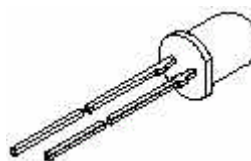
- High performance
- 3.5mw optical power (450nm)Deep Blue
- Single Wire Bond Structure
- Class II ESD Rating



03

Applications

- Outdoor LED Video Displays
- White LEDs
- Automotive Dashboard Lighting
- Cellular Phone Backlighting
- Audio Product Display Lighting
- Traffic Signals



05

Description

TheWin CB series of super bright LEDs are a new generation of solid state LED emitters which combine Highly efficient InGaN materials with TheWin proprietary SiC substrate to deliver excellent price performance For high intensity blue and green LEDs. These LED chips have an industry standard vertical chip structure which requires only a single wire bond connection. TheWin CB series chips are individually tested for conformity to optical And electrical specifications and the ability to withstand 1000V ESD. These LEDs are useful in a broad range of applications such as outdoor and indoor full motion LED video signs, transportation signaling and white LEDs, yet can also be used in most radial and SMT LED assembly processes.

Type	Color of Emission	Color of Package	Luminous Intensity $I_F = 20 \text{ mA}$ $I_v (\text{mcd})$
KS5450A-M KS5450A-N KS5450A-O KS5450A-P KS5450A-Q	Deep Blue	Colorless clear	700 1000 1200 (typ.) 1300 1500

Luminous intensity is specified at a current pulse duration of 25 ms.

InGaNSiC Technology

The Leader in Silicon Carbide Solid State Technology

KSx450x-x



Maximum Ratings at $T_A=25^{\circ}\text{C}$ (Notes 1&3)

KSx450x-x-CB290-E1000	
DC Forward Current	30mA
Peak Forward Current (1/10duty cycle @1kHz)	100mA
LED Junction Temperature Range	125 $^{\circ}\text{C}$
Reverse Voltage	5V
Operating Temperature Range	-20 $^{\circ}\text{C}$ to +80 $^{\circ}\text{C}$
Storage Temperature Range	-30 $^{\circ}\text{C}$ to +100 $^{\circ}\text{C}$
Electrostatic Discharge Threshold (HBM)(Note2)	1000V
Electrostatic Discharge Classification (MIL-STD-883E)(Note2)	Class 2

Typical Electrical/Optical Characteristics at $T_A=25^{\circ}\text{C}$, $I_f=20\text{mA}$ (Note 3)

Part Number	Forward Voltage (V _f V)		Radiant Flux (P,mW)		Reverse Current [I(V _r =5v), μA]	Flux (mlm)	Peak Wavelength (λ_p ,nm)	Dominant Wavelength (λ_d ,nm)			Halfwidth (λ_D ,nm)	Optical Rice Time (τ ,ns)
	Typ	Max	Min	Typ	Max	Typ	Typ	Min	Typ	Max	Typ	Typ
KS450	3.5	4.0	2.5	3.5	10	112	445	445	450	455	20	30

Mechanical Specifications

KSx450x-x-CB290-E1000			2000-07-142000-07-14		
Description	Dimension		Tolerance		
P-N Junction Area (μm)	240 x 240		± 25		
Bottom Area (μm)	260 x 260		± 25		
Chip Thickness(μm)	250		± 25		
Au Bond Pad Diameter (μm)	120		± 20		
Au Bond Pad Thickness(μm)	1.2		± 0.5		
Back Contact Grid Spacing(μm)	140		± 15		
Back Contact Metal Width(μm)	15		-5,+10		

Fig.1 Forward Voltage vs.Forward Current .

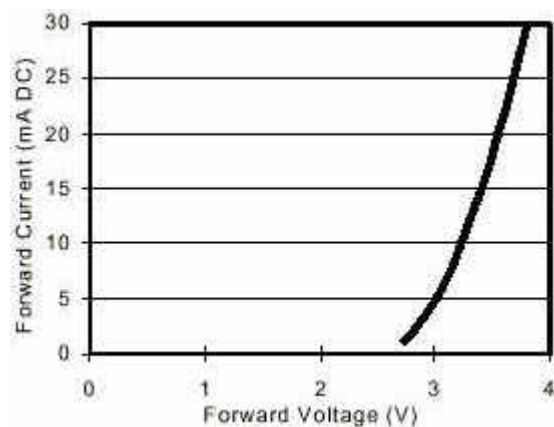


Fig.2 Relative Intensity vs.Wavelength.

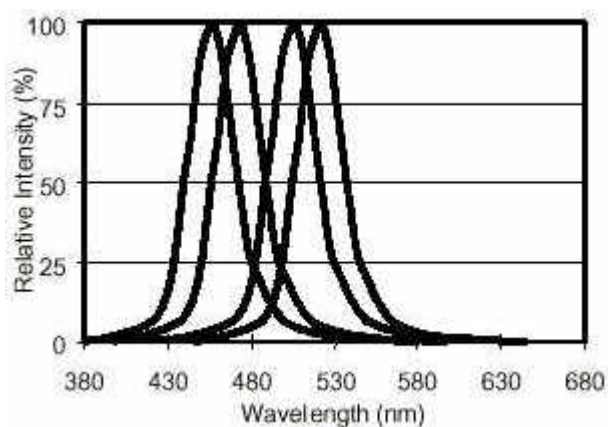
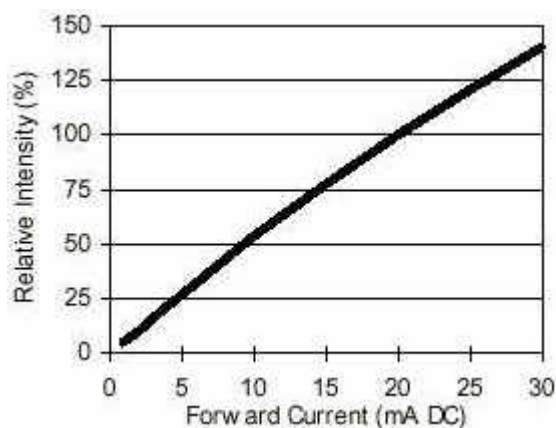


Fig.3 Relative Intensity vs. Forward Current.



**Fig.4 Relative Intensity vs.Lead Temperature
(Pulsed 20ma;300 μ s pulse,10ms period).**

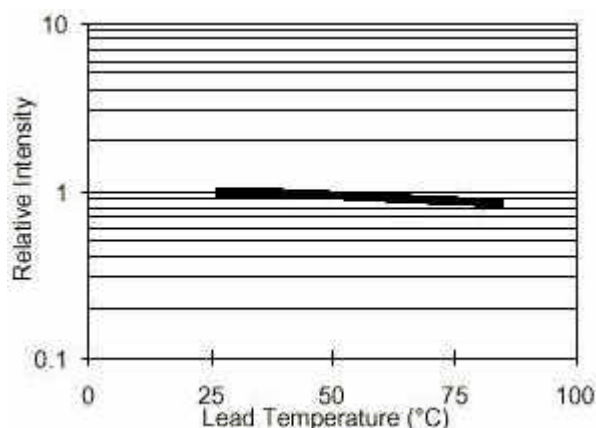
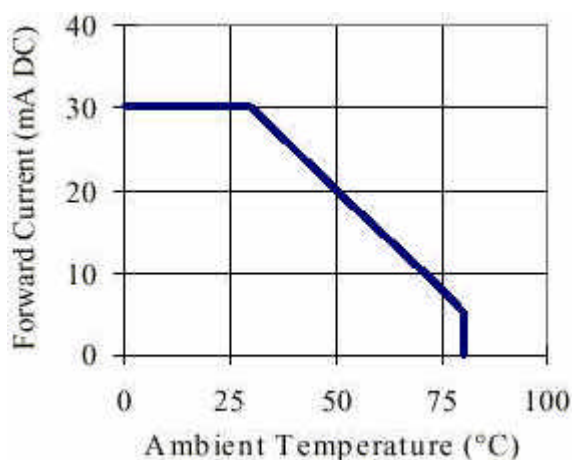


Fig.5 Forward Current vs. Ambient Temperature.



**Fig.6 Peak Forward Voltage vs. Forward Current
(100 μ s test pulse,1%duty cycle).**

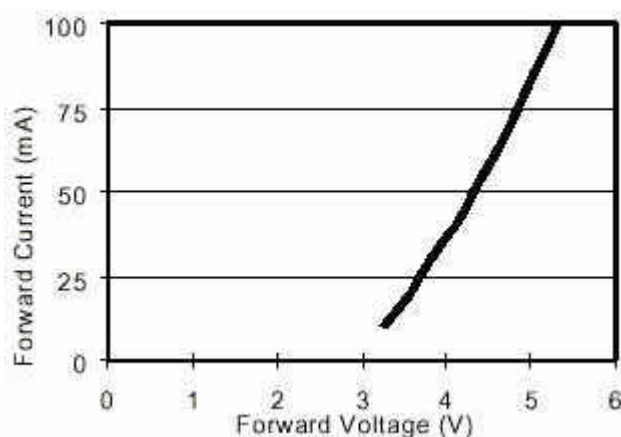


Fig.7 Relative Intensity vs. Peak Forward Current (300 μ s pulse width; 10ms Period).

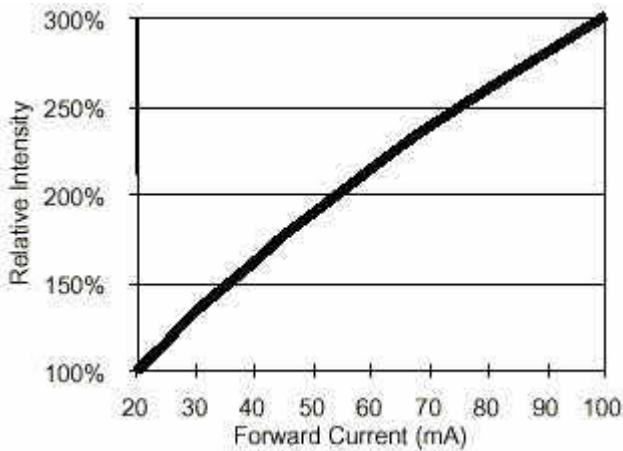


Fig.8 Pulse Derating Curve.

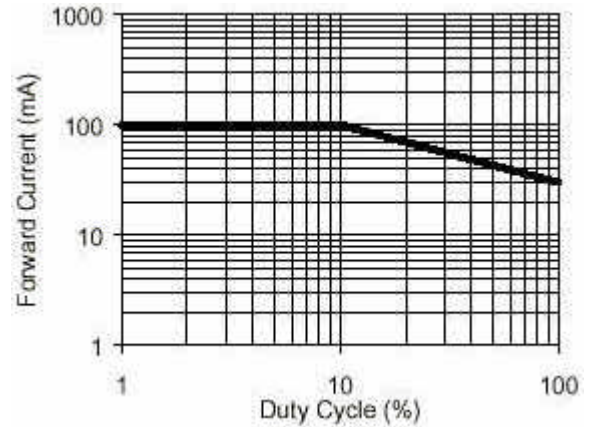


Fig.9 Wavelength Derating Curve.

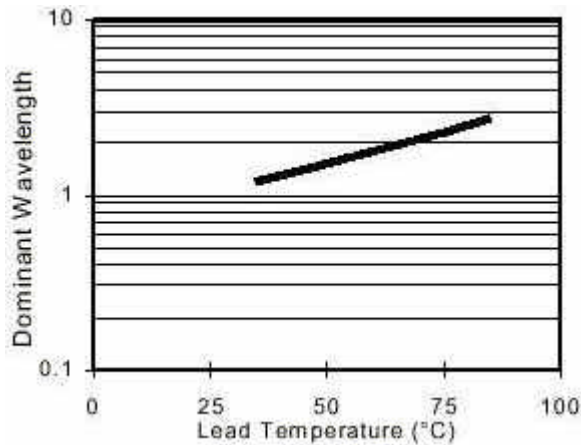
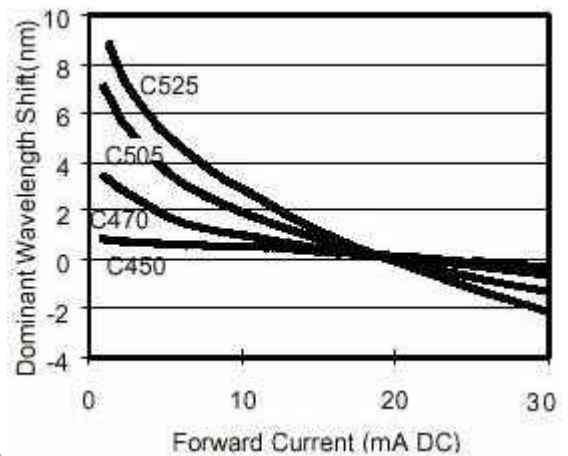


Fig.10 Dominant Wavelength vs. Forward Current.



Package Outlines (Dimensions in mm, unless otherwise specified)

