Lead (Pb) Free Product – RoHS Compliant

SMBD470-1100-02

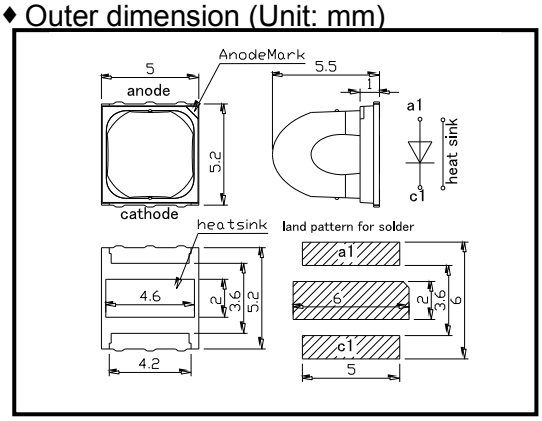
High Power Top LED

SMBD470-1100-02 is an InGaN LED mounted on copper heat sink with a 5x5 mm package.
It emits peak wavelength at 470nm and brightness 35lm typical respectively at ±10° of viewing angle.

♦Specifications

1) Product Name	High Power Top LED
2) Type No.	SMBD470-1100-02
3) Chip	
(1) Chip Material	InGaN
(2) Chip Dimension	1000um*1000um
(3) Chip Number	1pce
(4) Peak Wavelength	470nm typ.
4) Package	
(1) Lead Frame Die	Silver Plated on Copper
(2) Package Resin	PA9T
(3) Lens	Silicone Resin

♦Outer dimension (Unit: mm)



♦Absolute Maximum Ratings [Ta=25°C]

Item	Symbol	Maximum Rated Value	Unit
Power Dissipation	P_D	1500	mW
Forward Current	I_F	350	mA
Pulse Forward Current	I_{FP}	500	mA
Reverse Voltage	V_R	5	V
Thermal Resistance	R_{thja}	10	K/W
Junction Temperature	T_j	100	°C
Operating Temperature	T_{OPR}	-40 ~ +85	°C
Storage Temperature	T_{STG}	-40 ~ +100	°C
Soldering Temperature	T_{SOL}	250	°C

‡Pulse Forward Current condition: Duty=1% and Pulse Width=10us.

‡Soldering condition: Soldering condition must be completed within 5 seconds at 250°C

♦Electro-Optical Characteristics [Ta=25°C typ.]

Item	Symbol	Condition	Minimum	Typical	Maximum	Unit
Forward Voltage	V_F	IF=350mA		3.0	3.8	V
	V_{FP}	IFP=500mA		3.2		
Radiated Power	P_O	IF=350mA		470		mW
		IFP=500mA		650		
Luminous Flux	Φ_V	IF=350mA		35		lm
		IFP=500mA		50		
Radiant Intensity	I_E	IF=350mA		580		mW/sr
		IFP=500mA		800		
Peak Wavelength	λ_P	IF =350mA	460	470	480	nm
Half Width	$\Delta\lambda$	IF =350mA		20		nm
Viewing Half Angle	$\theta_{1/2}$	IF =100mA		±10		deg.
Rise Time	tr	IF =350mA		300		ns
Fall Time	tf	IF =350mA		200		ns

‡Radiated Power is measured by S3584-08.

‡Radiant Intensity is measured by Tektronix J-6512.

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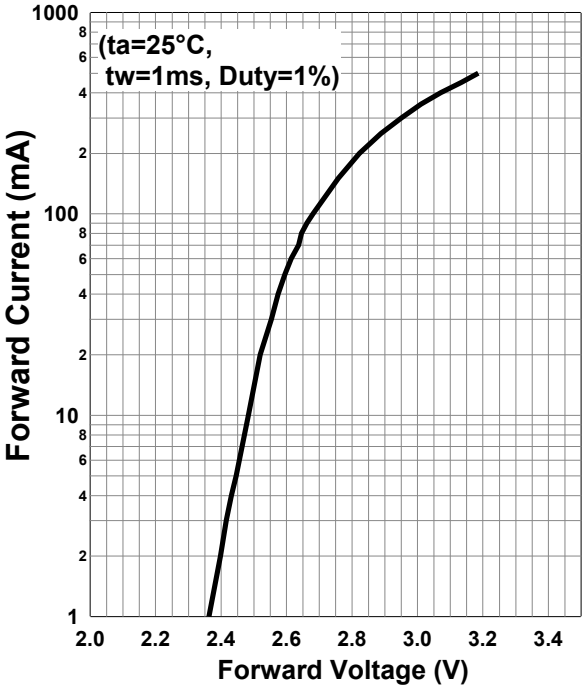
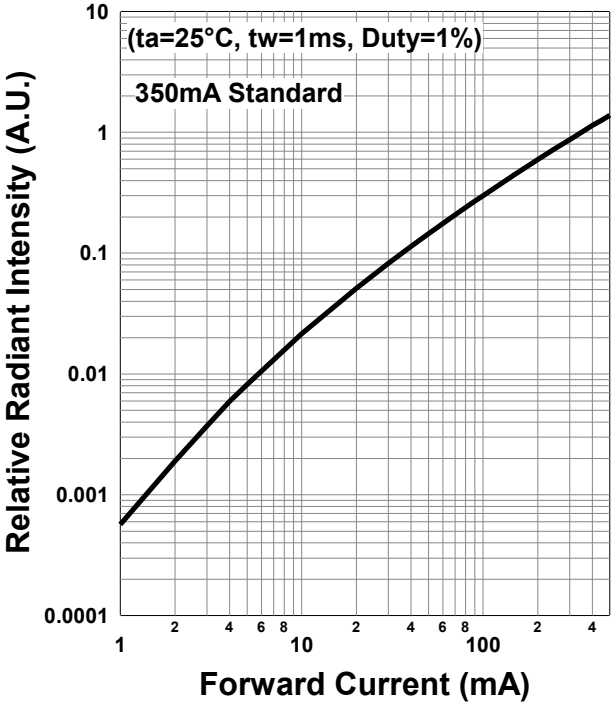
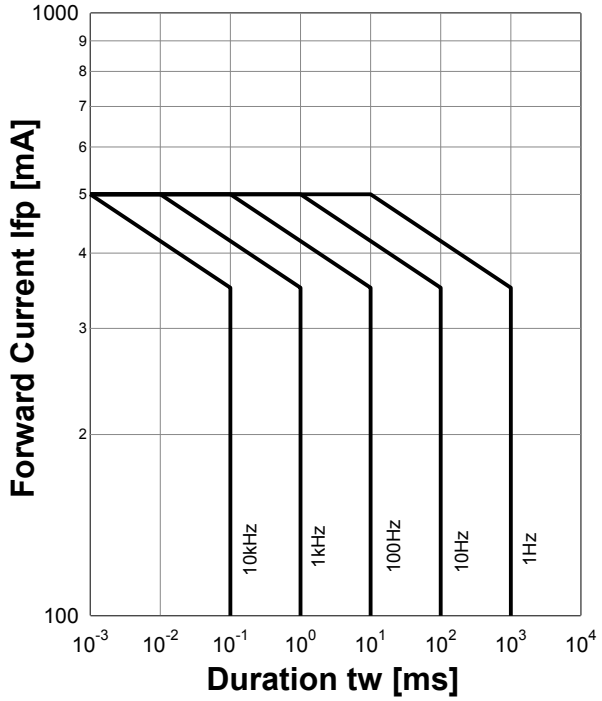
Forward Curent - Forward Voltage



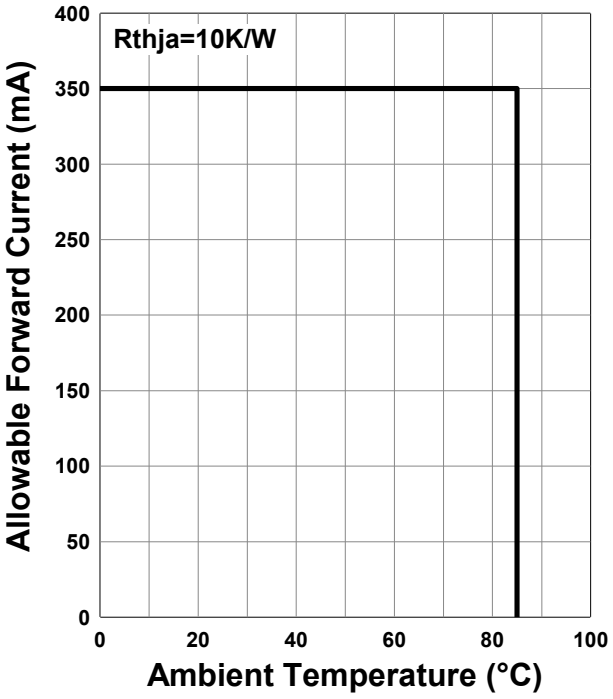
Relative Radiant Intensity - Forward Current



Forward Current - Pulse Duration



Allowable Forward Current - Ambient Temperature



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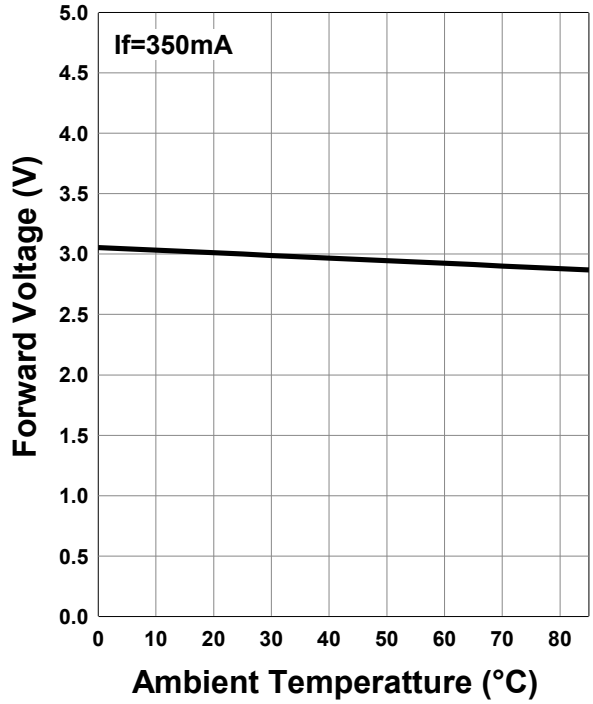
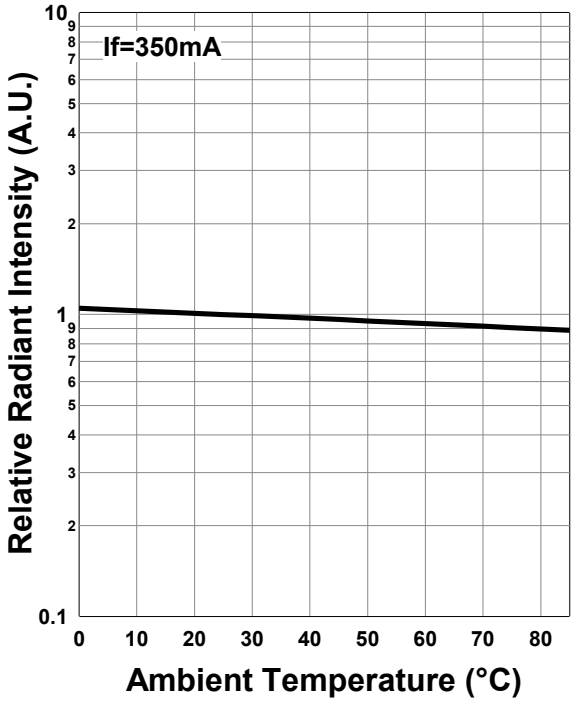
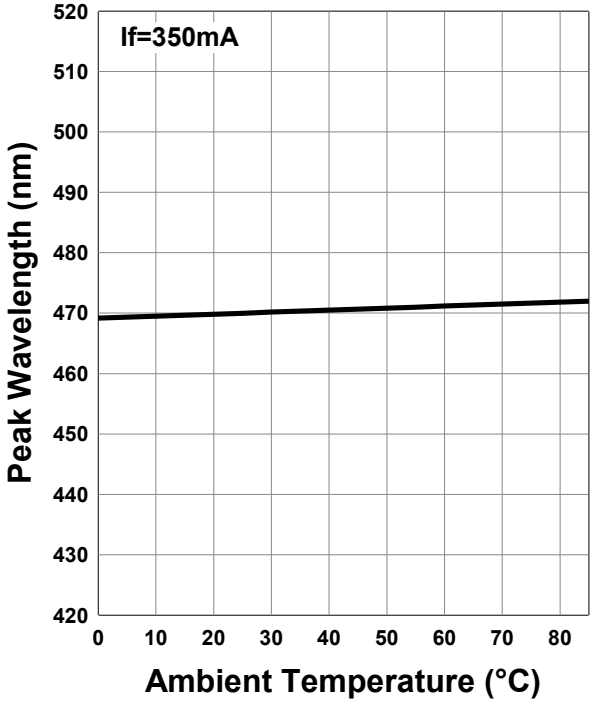
Forward Voltage - Ambient Temperture



Relative Radiant Intensity - Ambient Temperature



Peak Wavelength - Ambient Temperature



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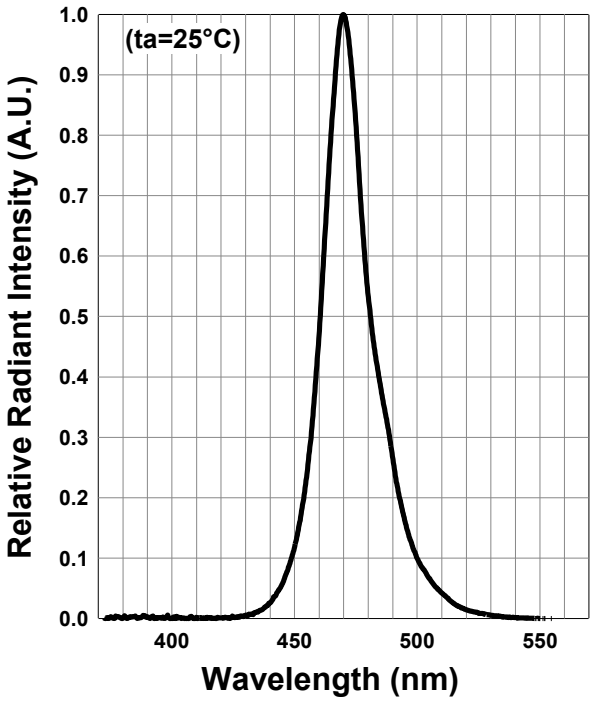
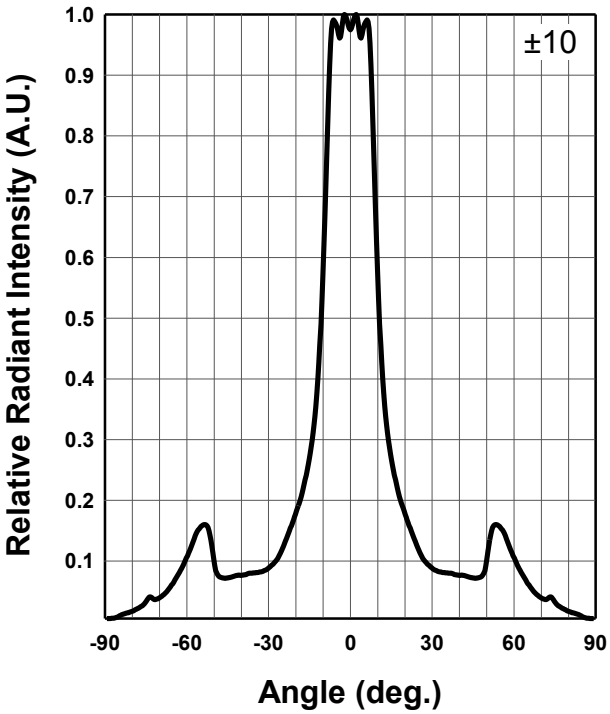
Relative Spectral Emission



Radiation Characteristics



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♦ Wrapping

Moisture barrier bag aluminum laminated film with a desiccant to keep out the moisture absorption during the transportation and storage.

SMD LED STORAGE AND HANDLING PRECAUTIONS

＜Storage Conditions before Opening a Moisture-Barrier Aluminum Bag＞

- Before opening a moisture-barrier aluminum bag, please store it at <30ºC, <60%RH. Please note that the maximum shelf life is 12 months under these conditions.

＜Storage Conditions after Opening a Moisture-Barrier Aluminum Bag＞

- After opening a moisture-barrier aluminum bag, store the aluminum bag and silica gel in a desiccator.
- After opening the bag, please solder the LEDs within 72 hours in a room with 5 - 30ºC, <50%RH.
- Please put any unused, remaining LEDs and silica gel back in the same aluminum bag and then vacuum-seal the bag.
- It is recommended to keep the re-sealed bag in a desiccator at <30%RH.

＜Notes about Re-sealing a Moisture-Barrier Aluminum Bag＞

- When vacuum-sealing an opened aluminum bag, if you find the moisture-indicator of the silica gel has changed to pink from blue (indicating a relative humidity of 30 % or more), please do not use the unused LEDs, the aluminum bag, or the silica gel.

＜Notes about Opening a Re-sealed Moisture-Barrier Aluminum Bag＞

- When opening a vacuumed and re-sealed aluminum bag in order to use the remaining LEDs stored in the bag, if you find that the moisture-indicator of the silica has changed to pink, please do not use the LEDs.

※The 72-hour- long floor life does not include the time while LEDs are stored in the moisture-barrier aluminum bag.
However, we strongly recommend to solder the LEDs as soon as possible after opening the aluminum bag.

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Disclaimer

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Product data and parameters in this catalog are typical values based on reasonably up-to-date measurements. Product data and parameters may vary by user application and over time.

Products shown in this catalog are intended to be used for general electronic equipment. Products are not guaranteed for applications where product malfunction or failure may cause personal injury or death, including but not limited to life-supporting / saving devices, medical devices, safety devices, airplanes, aerospace equipment, automobiles, traffic control systems, and nuclear reactor control systems.

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