

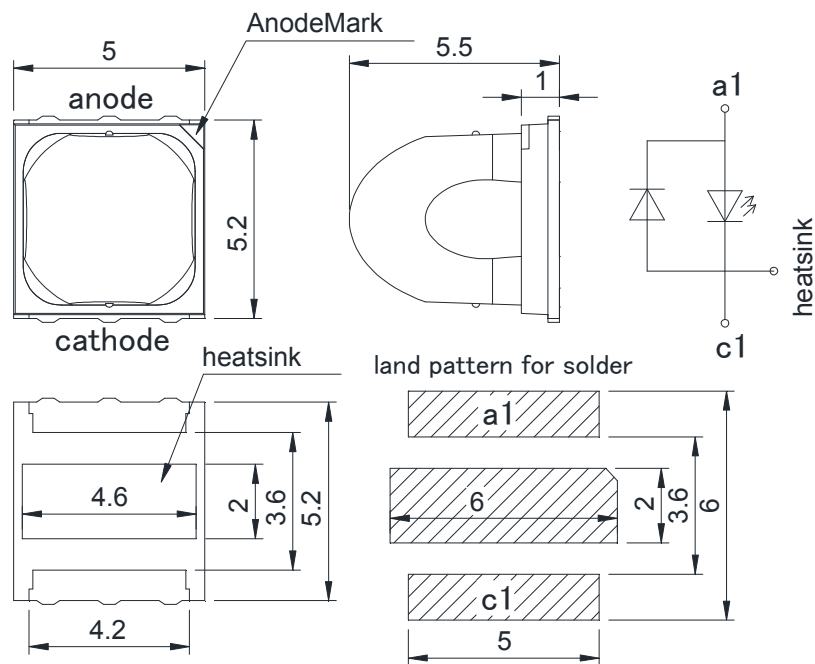
# Data Sheet

**PRELIMINARY**

## SMBB415H-1100-02Z (SMBB415H-1100-02)

415nm High Power TOP LED

### Outline and Internal Circuit



(Unit : mm)

### Features

- Chip Material : InGaN
- Chip Dimension : 1000um \* 1000um
- Number of Chips : 1pce
- Peak Wavelength : 415nm typ.
- Lead Frame Die : Silver Plated on Copper
- Package Resin : PA9T
- Lens : Silicone Resin

## Absolute Maximum Ratings (Tc=25°C)

Item	Symbol	Ratings	Unit
Power Dissipation	PD	1600	mW
Forward Current	IF	350	mA
Pulse Forward Current	IFP	500	mA
Reverse Voltage	VR	Not designed for reverse operation	V
Thermal Resistance	Rthja	10	K/W
Junction Temperature	Tj	120	°C
Operating Temperature	Topr	-40 ~ +100	°C
Storage Temperature	Tstg	-40 ~ +100	°C
Soldering Temperature	TSOL	250	°C

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

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

## Optical and Electrical Characteristics (Tc=25°C)

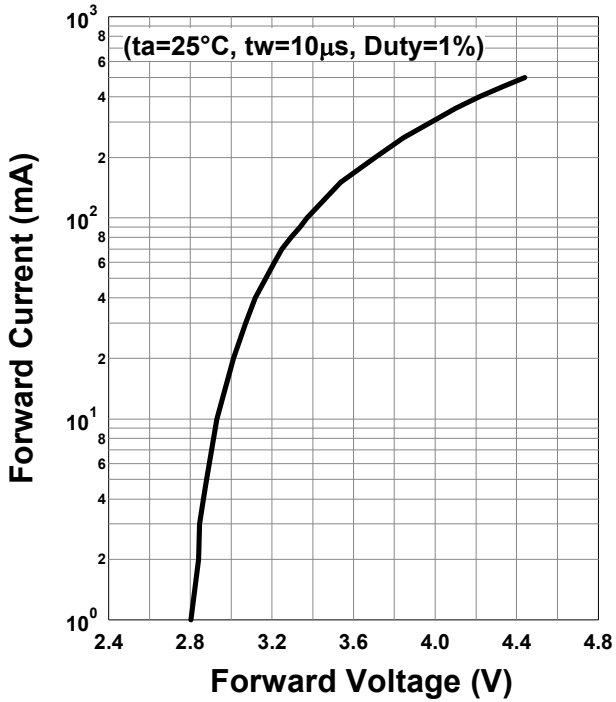
Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage	VF		4.1	4.5	V	IF=350mA
	VFP		4.4			IFP=500mA
Total Radiated Power	PO		300		mW	IF=350mA
			410			IFP=500mA
Radiant Intensity	IE		800		mW/sr	IF=350mA
			1100			IFP=500mA
Peak Wavelength	$\lambda_p$	410		420	nm	IF=350mA
Half Width	$\Delta\lambda$		15		nm	IF=350mA
Viewing Half Angle	$\theta_{1/2}$		$\pm 11$		deg.	IF=100mA
Rise Time	tr		90		ns	IF=350mA
Fall Time	tf		75		ns	IF=350mA

‡ Radiated Power is measured by S3584-08.

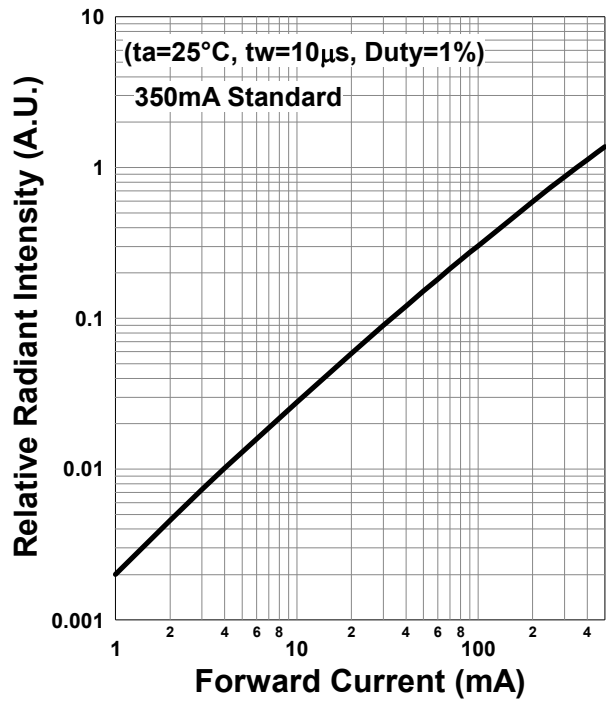
‡ Radiant Intensity is measured by CIE127-2007 Condition B.

## Typical Characteristic Curves

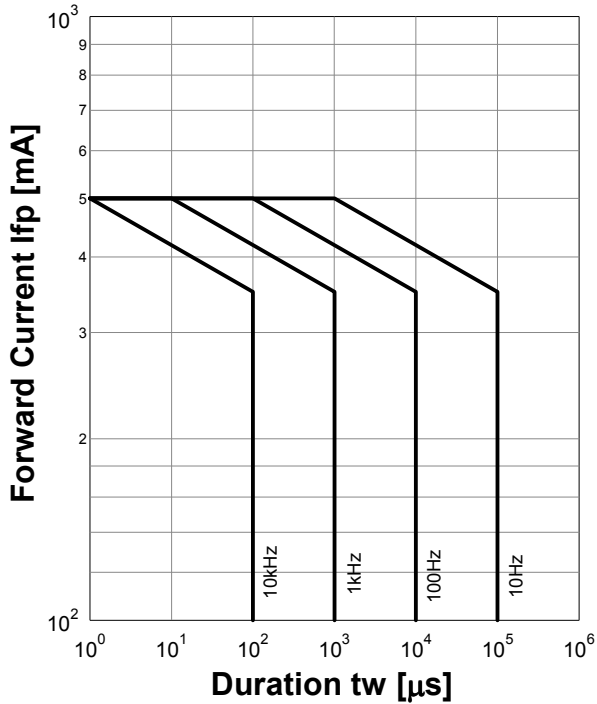
### Forward Current - Forward Voltage



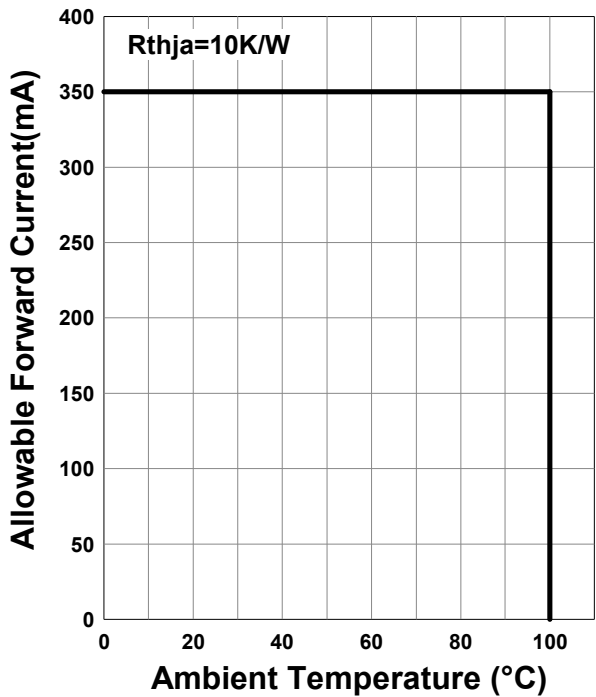
### Relative Radiant Intensity - Forward Current



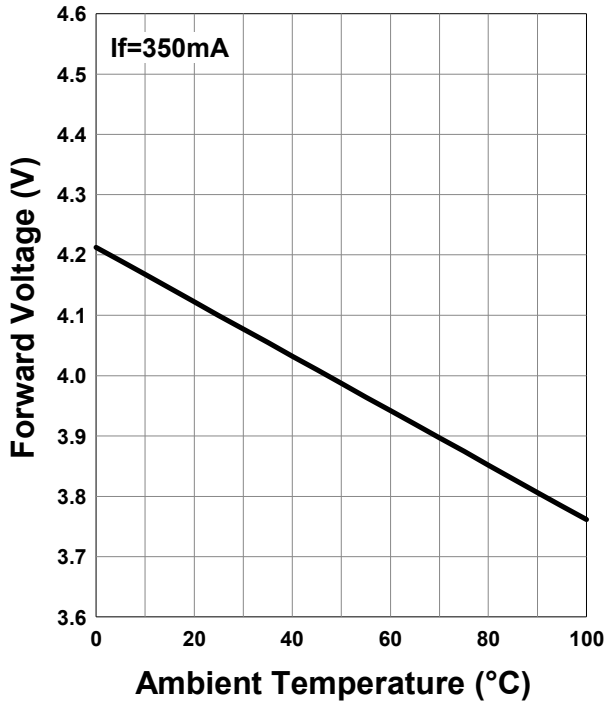
### Forward Current - Pulse Duration



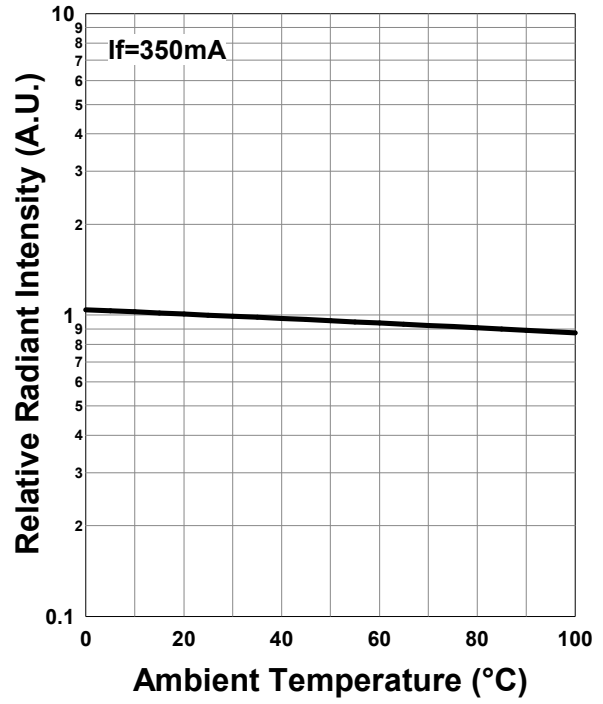
### Allowable Forward Current - Ambient Temperature



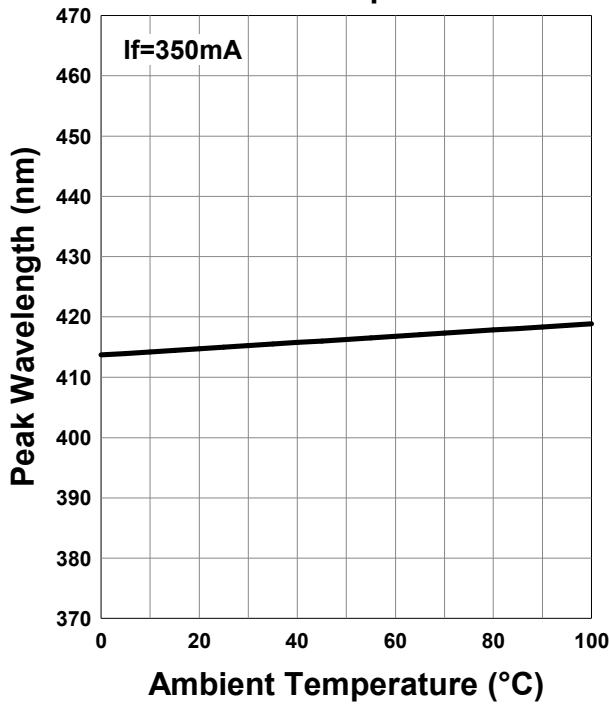
**Forward Voltage - Ambient Temperature**



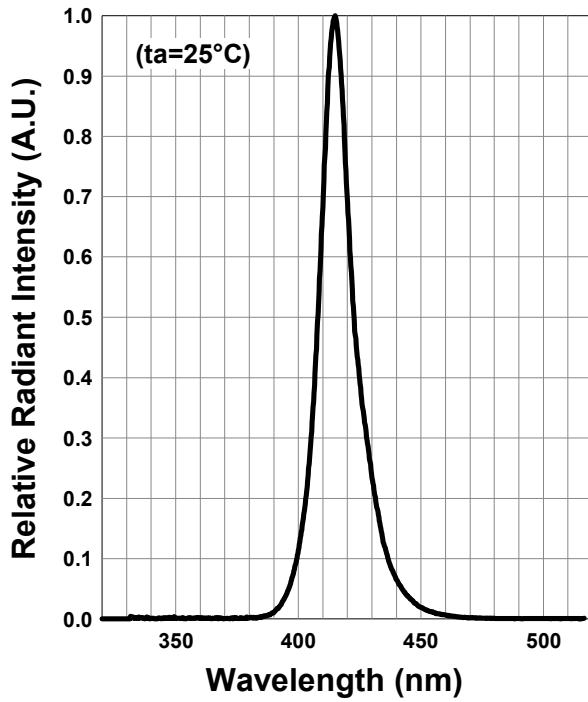
**Relative Radiant Intensity - Ambient Temperature**



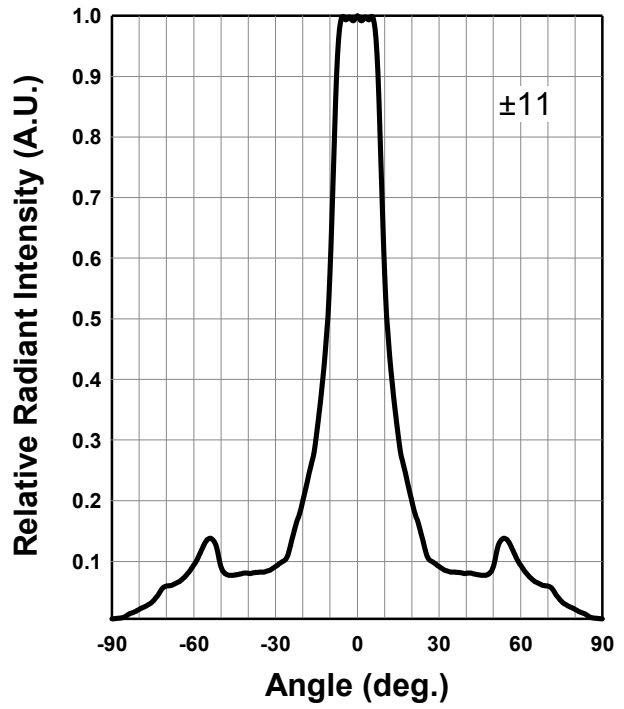
**Peak Wavelength - Ambient Temperature**



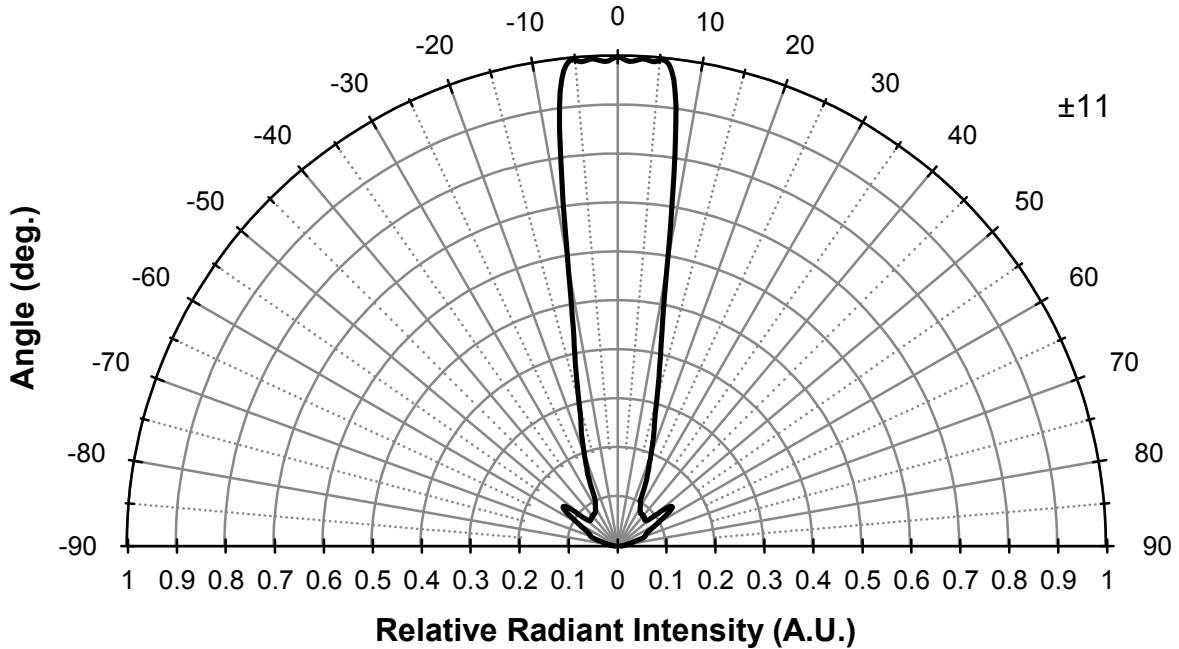
### Relative Spectral Emission



### Radiation Characteristics



### Radiation Characteristics



## 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 <30°C, <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 - 30°C, <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.
- 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

### 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.

Marubeni America Corporation  
Tel: 408-330-0650 | Email: sales@tech-led.com | URL: www.tech-led.com

## 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.

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