

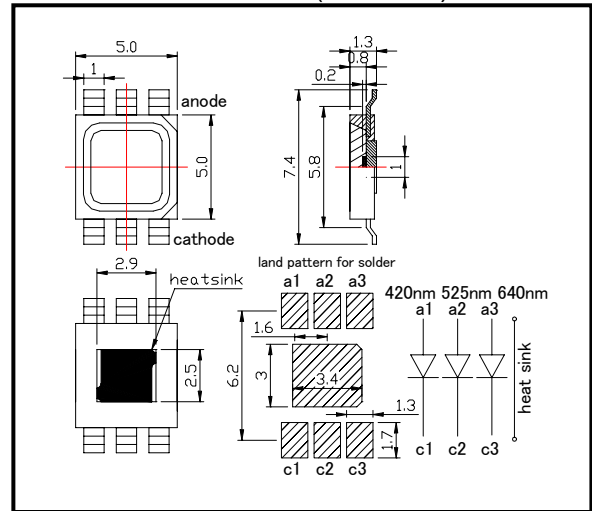
# SMB420/525/640-3100-I High Power Top LED

SMB420/525/640-3100-I is composed with 420nm, 525nm and 640nm LED on AlN ceramics and is provided copper heat sink for high current driving.

## ◆ Specifications

- |                     |                         |
|---------------------|-------------------------|
| 1) Product Name     | High Power Top LED      |
| 2) Type No.         | SMB420/525/640-3100-I   |
| 3) Chip             |                         |
| (1) Chip Material   | InGaN and GaInAsP       |
| (2) Chip Dimension  | 1000um*1000um           |
| (3) Chip Number     | 1pce each wavelength    |
| (4) Peak Wavelength | 420nm, 525nm, 640nm typ |
| 4) Package          |                         |
| (1) Lead Frame Die  | Silver Plated on Copper |
| (2) Insulator       | AlN ceramics            |
| (3) Package Resin   | PPA Resin               |
| (4) Lens            | Silicone Resin          |

## ◆ Outer dimension (Unit: mm)



## ◆ Absolute Maximum Ratings

Item	Symbol	Maximum Rated Value			Unit	Ambient Temperature
		420nm	525nm	640nm		
Power Dissipation	P <sub>D</sub>	1200	1200	1800	mW	T <sub>a</sub> =25°C
Forward Current	I <sub>F</sub>	300	300	600	mA	T <sub>a</sub> =25°C
Pulse Forward Current	I <sub>FP</sub>	1000	1000	2000	mA	T <sub>a</sub> =25°C
Reverse Voltage	V <sub>R</sub>	5			V	T <sub>a</sub> =25°C
Junction Temperature	T <sub>J</sub>	100			°C	
Thermal Resistance	R <sub>thja</sub>	9	9	6	K/W	
Operating Temperature	T <sub>OPR</sub>	-30 ~ +85			°C	
Storage Temperature	T <sub>STG</sub>	-40 ~ +100			°C	
Soldering Temperature	T <sub>SOL</sub>	255			°C	

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

‡Soldering condition: Soldering condition must be completed within 5 seconds at 255°C

## ◆ Electro-Optical Characteristics [T<sub>a</sub>=25°C]

Item	Symbol	Condition	Minimum			Typical			Maximum			Unit
			420	525	640	420	525	640	420	525	640	
Forward Voltage	V <sub>F</sub>	I <sub>F</sub> =300mA				3.5	3.3	2.6				V
Radiated Power	P <sub>O</sub>	I <sub>F</sub> =300mA				115	60	110				mW
Radiant Intensity	I <sub>E</sub>	I <sub>F</sub> =300mA				30	20	35				mW/sr
Half Width	Δλ	I <sub>F</sub> =50mA				12	20	13				nm
Viewing Half Angle	θ <sub>1/2</sub>	I <sub>F</sub> =50mA				±62						deg.

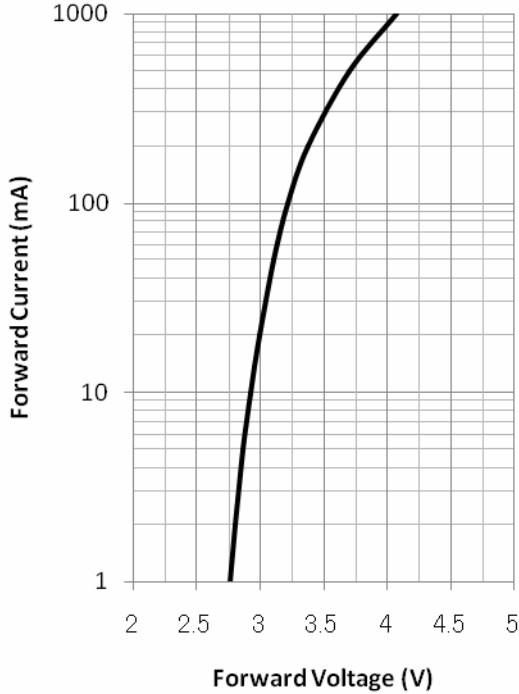
‡Radiated Power is measured by S3584-08

‡Radiant Intensity is measured by Tektronix J-6512.

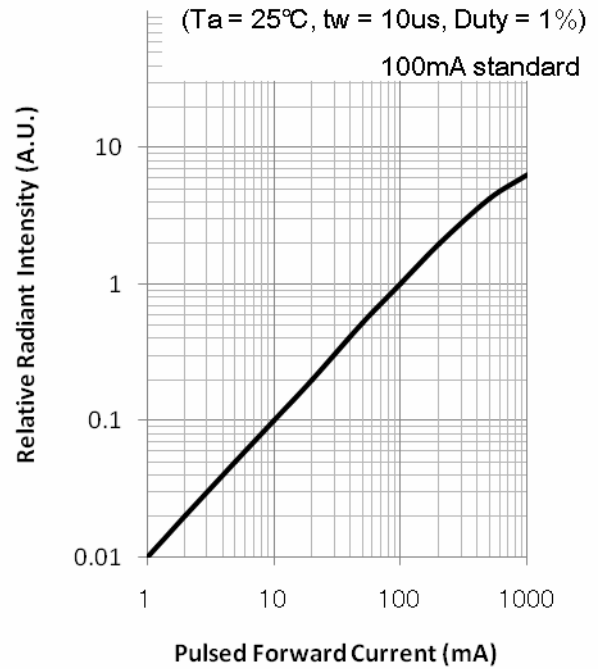


420nm Datasheet

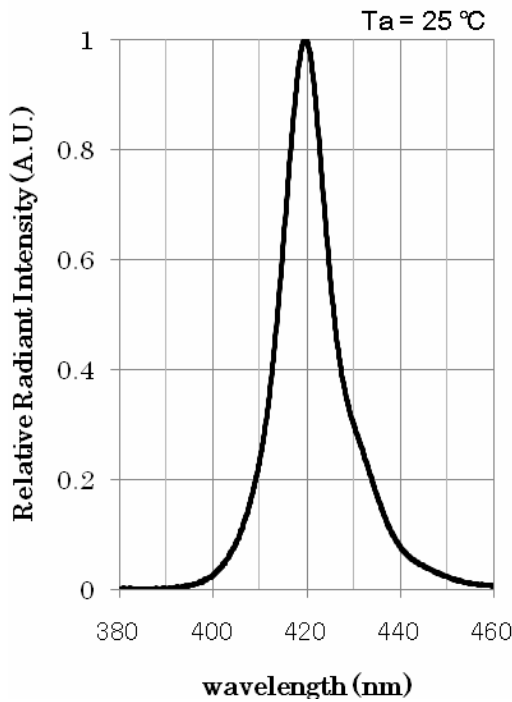
Forward current-Forward Voltage  
 $T_a = 25^\circ\text{C}$ ,  $t_w = 10\mu\text{s}$ , Duty = 1%



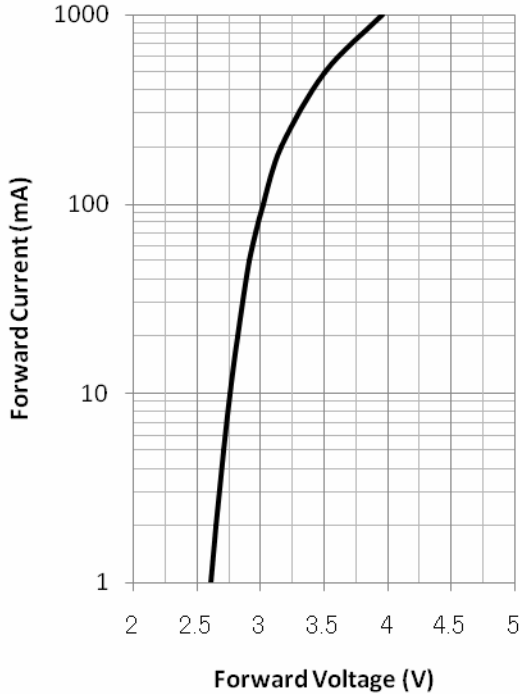
Relative Radiant Intensity - Pulsed Forward Current



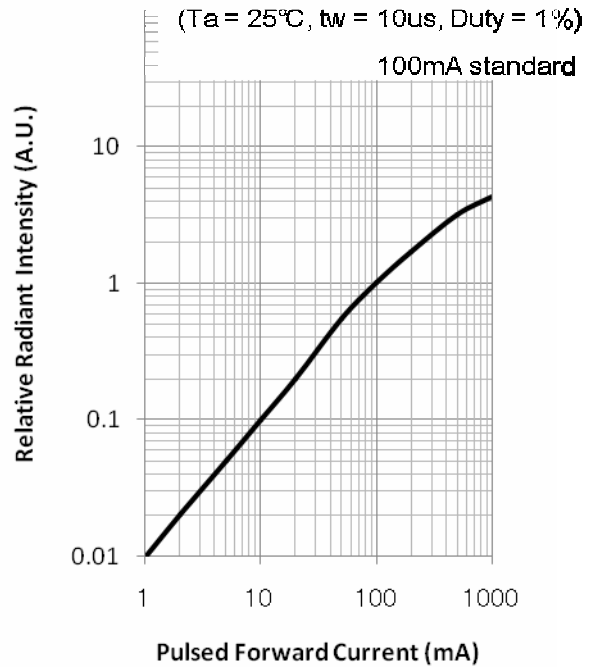
Peak Wavelength



Forward current-Forward Voltage  
Ta = 25°C, tw = 10us, Duty = 1%



Relative Radiant Intensity - Pulsed Forward Current



Peak Wavelength

