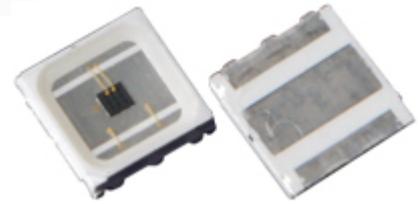




## SMB1N-525V

- Green High Power LED
- 525 nm, 230 mW
- SMD package, PA9T
- Dimension: 5.0 x 5.2 x 1.0 mm
- Viewing Angle: 126°



### Description



**SMB1N-525V** is a surface mount InGaN High Power LED with a typical peak wavelength of **525 nm** and radiation of **230 mW**. It comes in SMD package (PA9T) with silver plated soldering pads (lead free solderable), copper heat sink, and molded with silicone resin.

### Maximum Ratings ( $T_{CASE}=25^{\circ}C$ )

| Parameter                  | Symbol     | Values |       | Unit |
|----------------------------|------------|--------|-------|------|
|                            |            | Min.   | Max.  |      |
| Power Dissipation          | $P_D$      |        | 1300  | mW   |
| Forward Current            | $I_F$      |        | 350   | mA   |
| Pulse Forward Current *1   | $I_{FP}$   |        | 1000  | mA   |
| Reverse Voltage            | $V_F$      |        | 5     | V    |
| Thermal Resistance         | $R_{THJA}$ |        | 6     | KW   |
| Junction Temperature       | $T_J$      |        | 100   | °C   |
| Operating Temperature      | $T_{CASE}$ | - 40   | + 85  | °C   |
| Storage Temperature        | $T_{STG}$  | - 40   | + 100 | °C   |
| Lead Solder Temperature *2 | $T_{SLD}$  |        | + 250 | °C   |

\*1 duty=1%, pulse width = 10  $\mu$ s

\*2 must be completed within 5 seconds

### Electro-Optical Characteristics ( $T_{CASE}=25^{\circ}C$ )

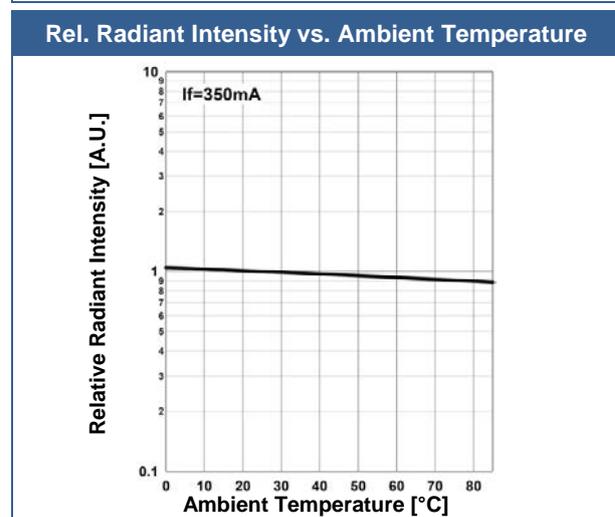
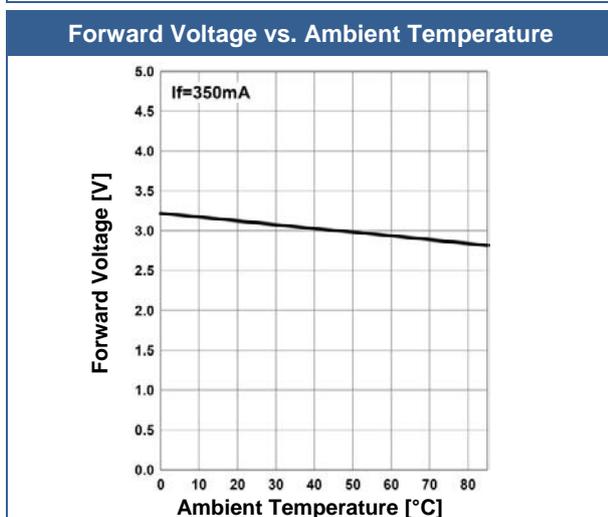
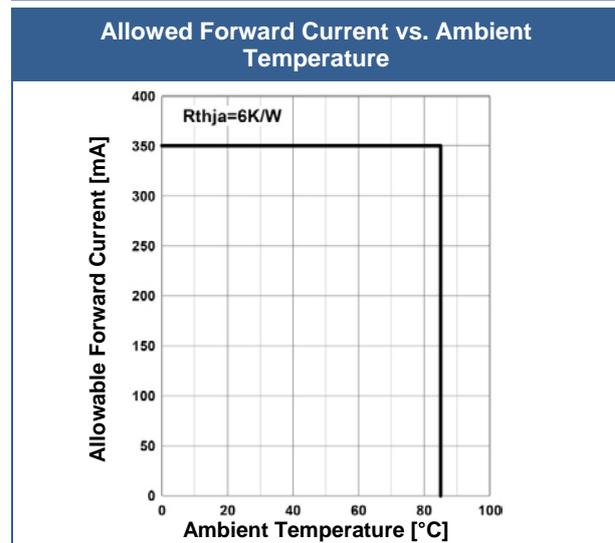
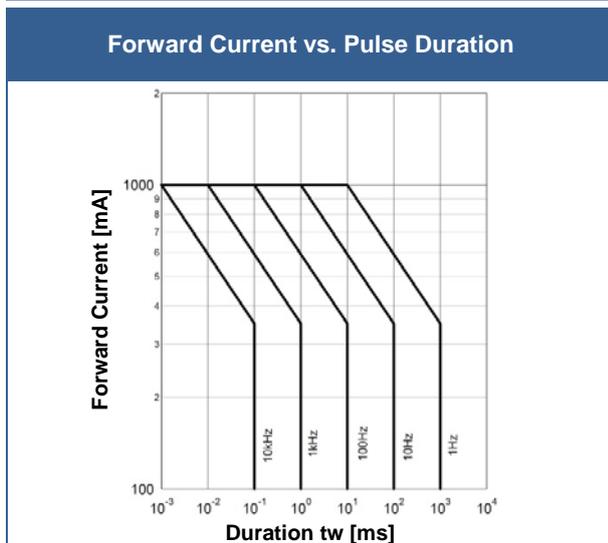
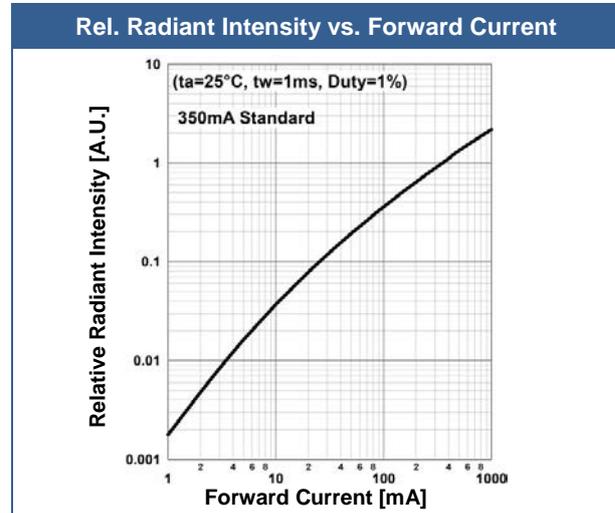
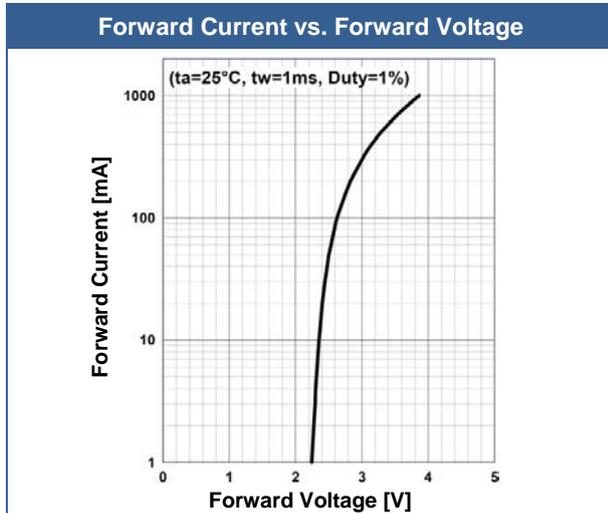
| Parameter            | Symbol          | Conditions      | Values |      |      | Unit  |
|----------------------|-----------------|-----------------|--------|------|------|-------|
|                      |                 |                 | Min.   | Typ. | Max. |       |
| Peak Wavelength      | $\lambda_P$     | $I_F=350mA$     |        | 525  |      | nm    |
| Half Width           | $\Delta\lambda$ | $I_F=350mA$     |        | 35   |      | nm    |
| Dominant Wavelength  | $\lambda_D$     | $I_F=350mA$     |        | 535  |      | nm    |
| Forward Voltage      | $V_F$           | $I_F=350mA$     |        | 3.1  | 3.6  | V     |
|                      | $V_{FP}$        | $I_{FP}=1000mA$ |        | 4.1  |      |       |
| Radiated Power *1    | $P_O$           | $I_F=350mA$     |        | 230  |      | mW    |
|                      |                 | $I_{FP}=1000mA$ |        | 460  |      |       |
| Brightness           | $I_V$           | $I_F=350mA$     |        | 37   |      | cd    |
|                      |                 | $I_{FP}=1000mA$ |        | 80   |      |       |
| Radiant Intensity *2 | $I_E$           | $I_F=350mA$     |        | 80   |      | mW/sr |
|                      |                 | $I_{FP}=1000mA$ |        | 170  |      |       |
| Viewing Angle        | $\varphi$       | $I_F=100mA$     |        | 126  |      | deg.  |
| Rise Time            | $t_R$           | $I_F=350mA$     |        | 250  |      | ns    |
| Fall Time            | $t_F$           | $I_F=350mA$     |        | 250  |      | ns    |

\*1 measured by S3584-08

\*2 measured by Tektronix J-6512

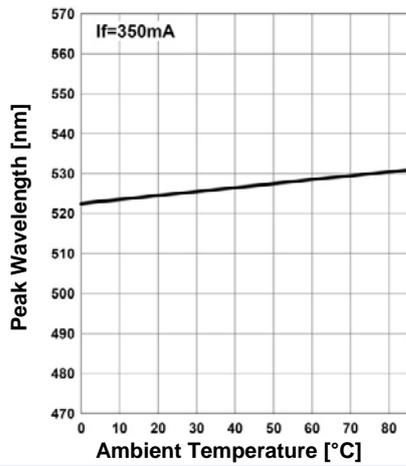


## Typical Performance Curves

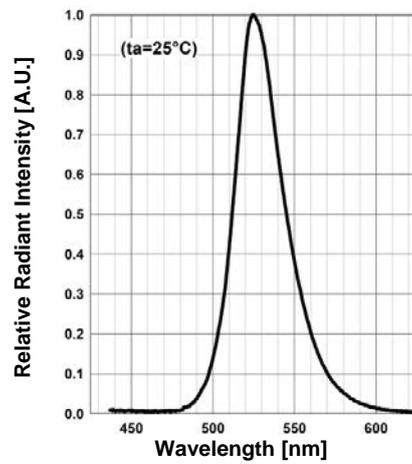




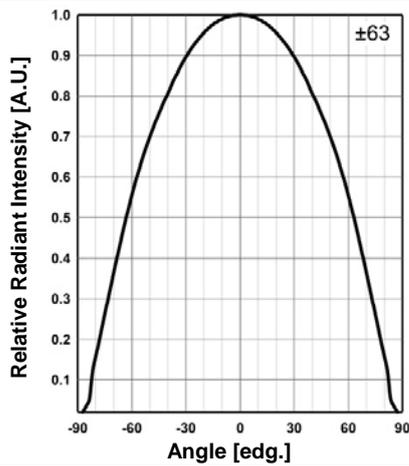
Peak Wavelength vs. Ambient Temperature



Relative Spectral Emission



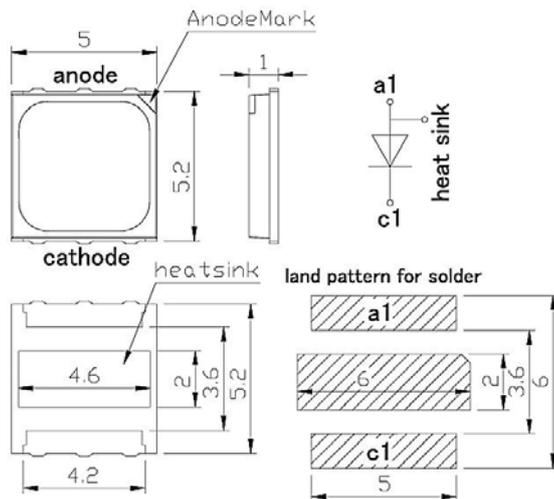
Radiation Characteristics



## Outline Dimensions

SMB1N

flat



| Lead   | Description |
|--------|-------------|
| Pin a1 | LED Anode   |
| Pin c1 | LED Cathode |

All Dimensions in mm



## Precautions

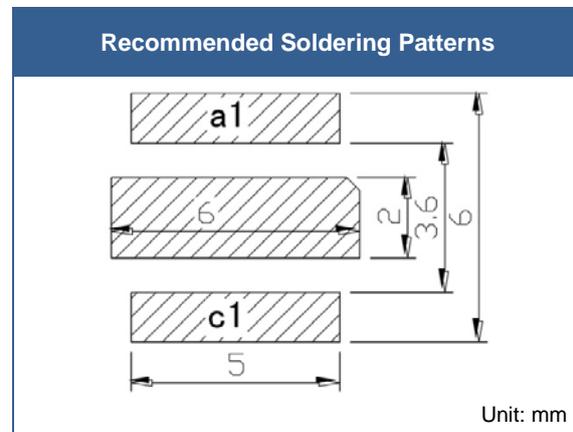
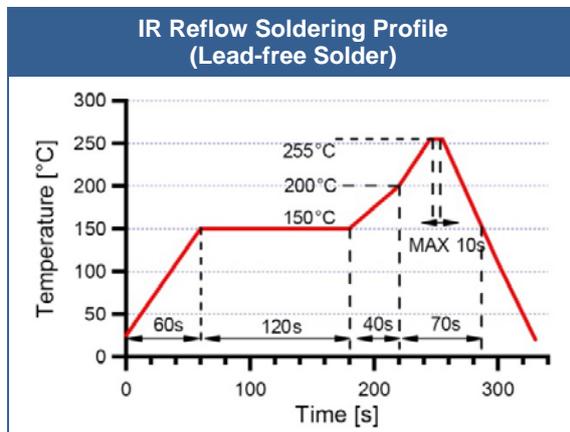
### Soldering:

- Do avoid overheating of the LED
- Do avoid electrostatic discharge (ESD)
- Do avoid mechanical stress, shock, and vibration
- Do only use non-corrosive flux
- Do not apply current to the LED until it has cooled down to room temperature after soldering

### Recommended soldering conditions:

This LED is designed to be reflow soldered on to a PCB. If dip soldered or hand soldered, its reliability cannot be guaranteed.

Nitrogen reflow soldering is recommended. Air flow soldering conditions can cause optical degradation, caused by heat and/or atmosphere.



Above table specifies the maximum allowed duration and temperature during soldering. It is strongly advised to perform soldering at the shortest time and lowest temperature possible.

### Cleaning:

**Cleaning with isopropyl alcohol, propanol, or ethyl alcohol is recommended**

DO NOT USE acetone, chloroform, trichloroethylene, or MKS

DO NOT USE ultrasonic cleaners

### Static Electricity:

**LEDs are sensitive to electrostatic discharge (ESD).** Precautions against ESD must be taken when handling or operating these LEDs. Surge voltage or electrostatic discharge can result in complete failure of the device.

### Radiation:

During operation these LEDs do emit **high intensity light**, which is hazardous to skin and eyes, and may cause cancer. Do avoid exposure to the emitted light. **Protective glasses are recommended.** It is further advised to attach a warning label on products/systems.

### Operation:

**Do only operate LEDs with a current source.**

Running these LEDs from a voltage source will result in complete failure of the device.

Current of a LED is an exponential function of the voltage across it. Usage of current regulated drive circuits is mandatory.