

**PRELIMINARY**

## SMB1N-365V-02

Rev. 1.2, 19.12.2018

- UV High Power LED
- 365 nm, 500 mW
- SMD package, PA9T
- Dimension: 5.0 x 5.2 x 5.5 mm
- Viewing Angle: 18°



### Description



**SMB1N-365V-02** is a surface mount AlInGaN High Power LED with a typical peak wavelength of **365 nm** and radiation of **640 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	$P_D$		3200	mW
Forward Current	$I_F$		700	mA
Pulse Forward Current *1	$I_{FP}$		1000	mA
Reverse Voltage	$V_F$	not designed for reverse operation		V
Thermal Resistance	$R_{THJA}$		10	KW
Junction Temperature	$T_J$		90	°C
Operating Temperature	$T_{CASE}$	- 10	+ 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

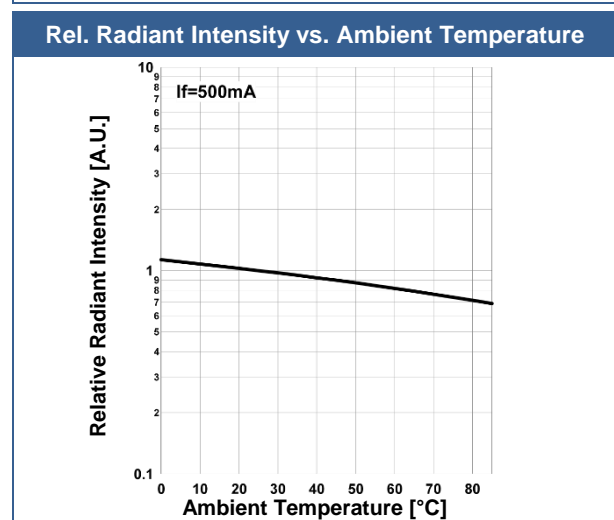
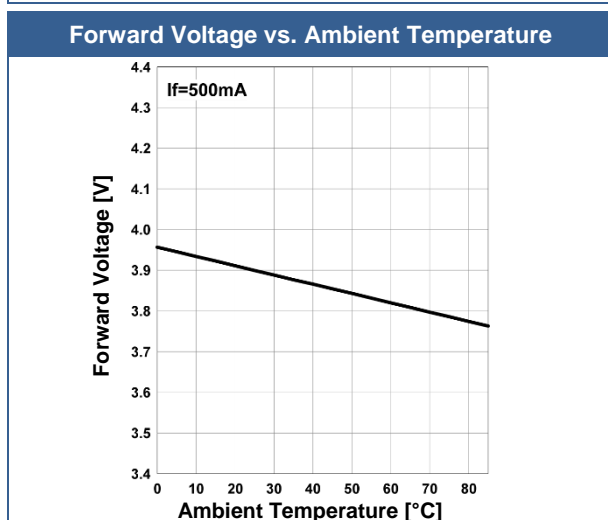
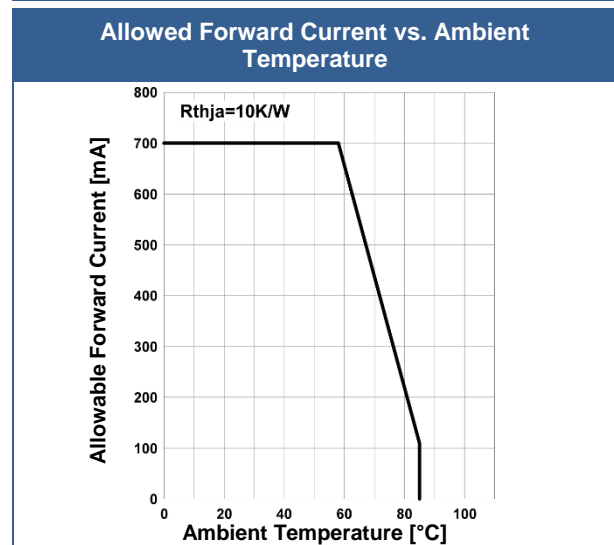
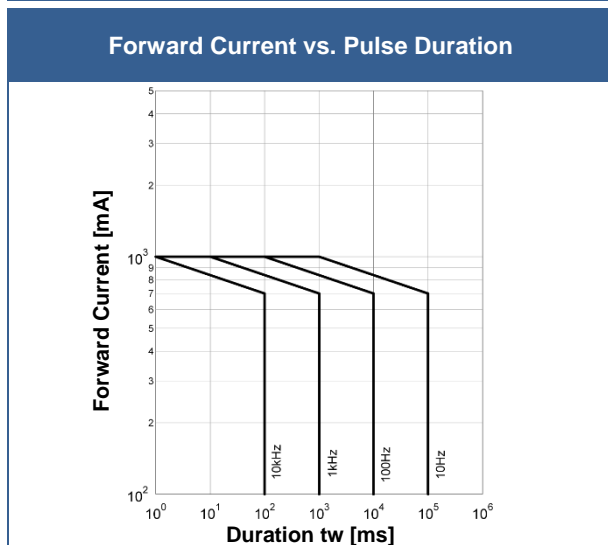
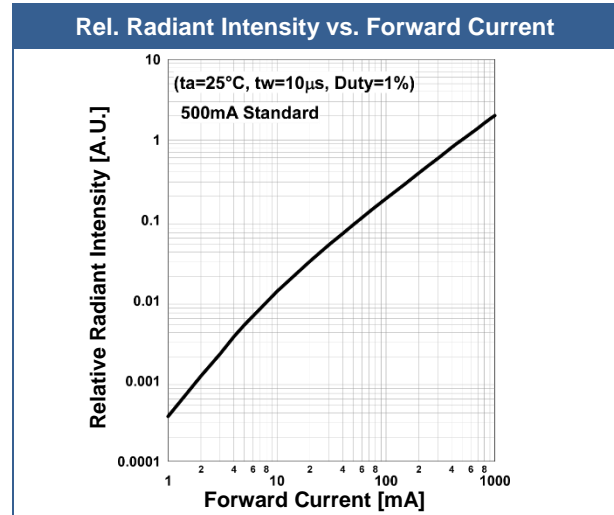
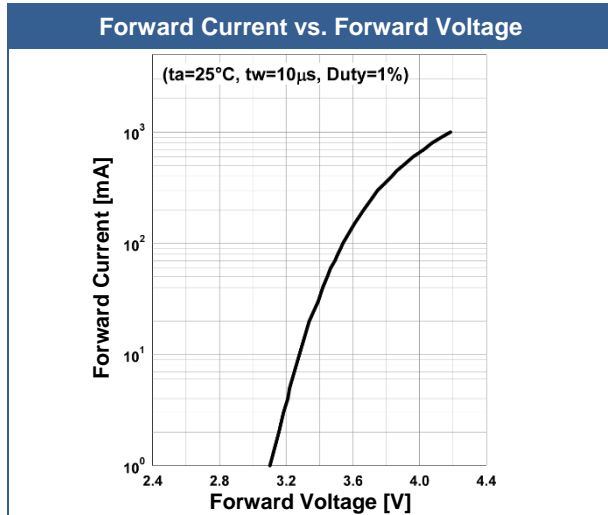
### Electro-Optical Characteristics ( $T_{CASE}=25^{\circ}C$ )

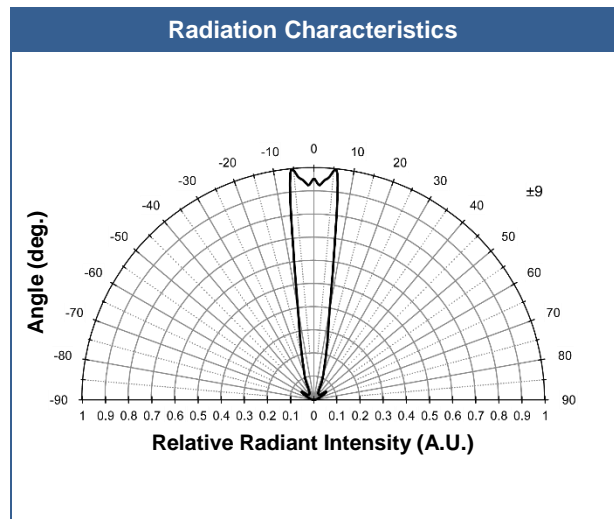
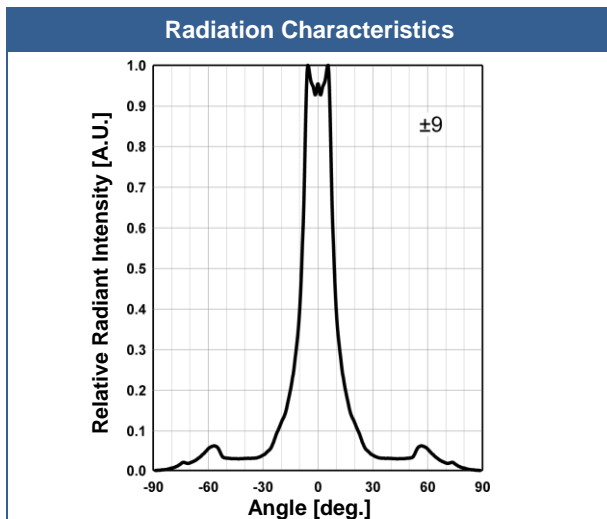
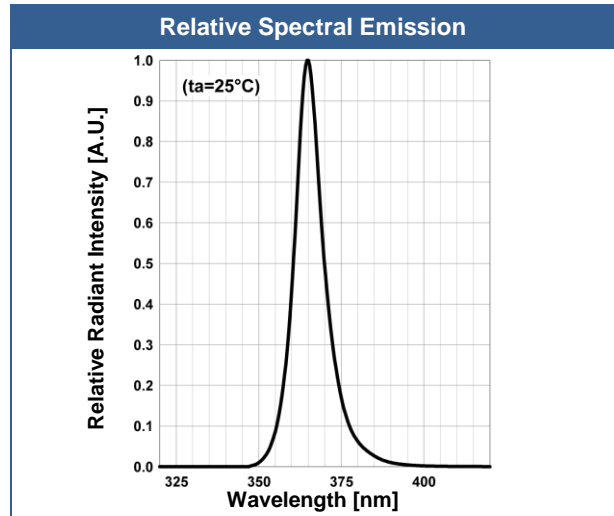
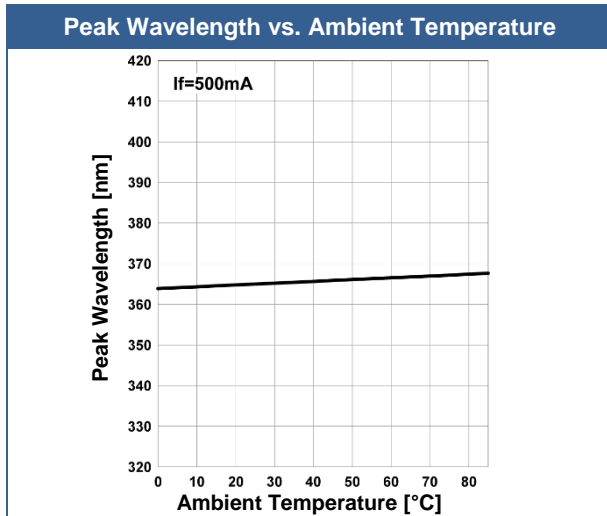
Parameter	Symbol	Conditions	Values			Unit
			Min.	Typ.	Max.	
Peak Wavelength	$\lambda_P$	$I_F=500mA$	360		370	nm
Half Width	$\Delta\lambda$	$I_F=500mA$		9		nm
Forward Voltage	$V_F$	$I_F=500mA$		3.9	4.5	V
	$V_{FP}$	$I_{FP}=700mA$		4.2		
Radiated Power	$P_O$	$I_F=500mA$		640		mW
		$I_{FP}=700mA$		1300		
Radiant Intensity *	$I_E$	$I_F=500mA$		2400		mW/sr
		$I_{FP}=700mA$		4800		
Viewing Angle	$\varphi$	$I_F=100mA$		18		deg.
Rise Time	$t_R$	$I_F=500mA$		20		ns
Fall Time	$t_F$	$I_F=500mA$		35		ns

\*1 measured by CIE127-2007 Condition B



## Typical Performance Curves





## Outline Dimensions

SMB1N
lens

Lead	Description
Pin a1	LED Anode
Pin c1	LED Cathode

All Dimensions in mm



## Precautions

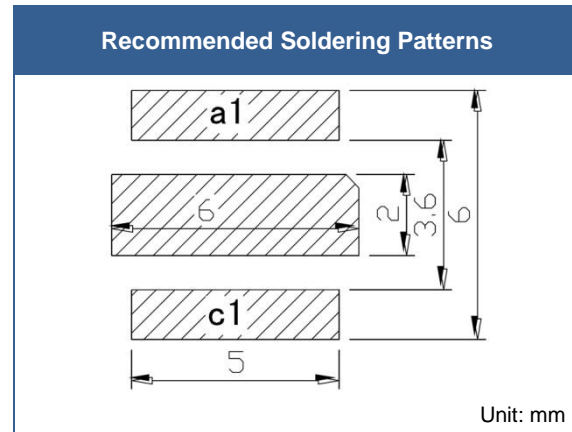
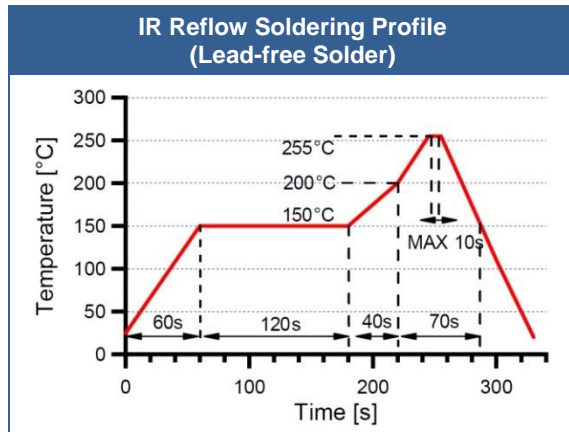
### Soldering:

- 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.