



SMB1N-1550D-02

- Infrared High Power LED
- 1550 nm, 52 mW
- InGaAsP chip, 1000 x 1000 μm
- PA9T SMD package
- Beam Angle: $\pm 10^\circ$



Description

SMB1N-1550D-02 is a surface mount InGaAsP based high power infrared LED, with a typical peak wavelength of 1550 nm and optical output power of 52 mW @ 1 A. It comes in polyamide resin SMD package (PA9T) with silver plated soldering pads (lead free solderable), copper heat sink, and silicone resin molded lens. Additional variants with different beam angles are available on request.

Maximum Ratings*

Parameter	Symbol	Values		Unit
		Min.	Max.	
Power Dissipation	P_D		1700	mW
Forward Current	I_F		1000	mA
Pulse Forward Current **	I_{FP}		2000	mA
Reverse Voltage	U_F		3	V
Thermal Resistance	R_{THJA}		10	K/W
Junction Temperature	T_J		120	$^\circ\text{C}$
Operating Temperature	T_{CASE}	- 40	+ 100	$^\circ\text{C}$
Storage Temperature	T_{STG}	- 40	+ 100	$^\circ\text{C}$
Lead Solder Temperature (t_{max} 5s)	T_{SLD}		+ 250	$^\circ\text{C}$

* Operating close to or exceeding these parameters may damage the device

** duty cycle = 1 %, pulse width = 10 μs

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

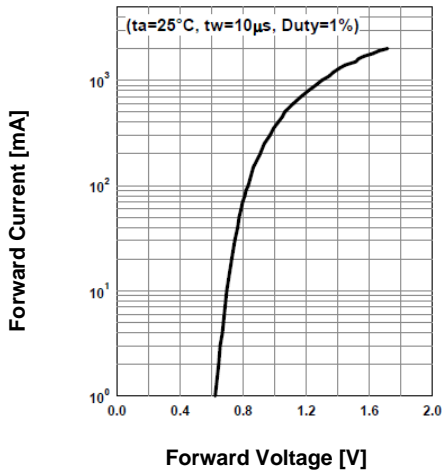
Parameter	Symbol	Conditions	Values			Unit
			Min.	Typ.	Max.	
Peak Wavelength	λ_P	$I_F=1\text{ A}$	1500		1600	nm
Half Width	λ_Δ	$I_F=1\text{ A}$		120		nm
Forward Voltage	V_F	$I_F=1\text{ A}$		1.3	1.7	V
	V_{FP}	$I_{FP}=2\text{ A}^*$		1.7		
Total Radiated Power	P_O	$I_F=1\text{ A}$	30	52		mW
		$I_{FP}=2\text{ A}^*$		80		
Radiant Intensity	I_E	$I_F=1\text{ A}$		410		mW/sr
		$I_{FP}=2\text{ A}^*$		630		
Beam Angle	$2\theta_{1/2}$	$I_F=100\text{ mA}$		20		deg.
Rise Time	t_r	$I_F=1\text{ A}$		90		ns
Fall Time	t_f	$I_F=1\text{ A}$		30		ns

* duty cycle = 1 %, pulse width = 10 μs

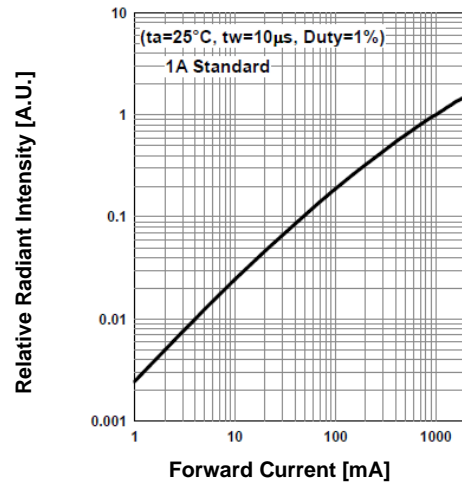


Typical Performance Curves

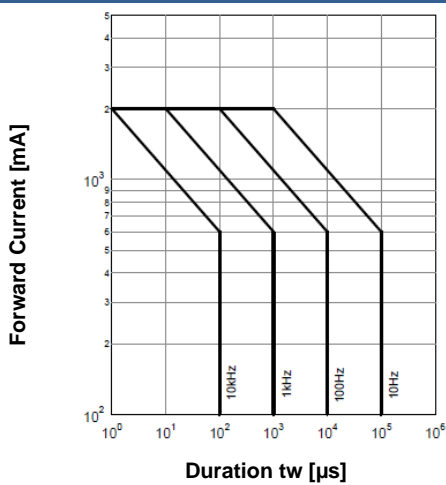
Forward Current vs. Forward Voltage



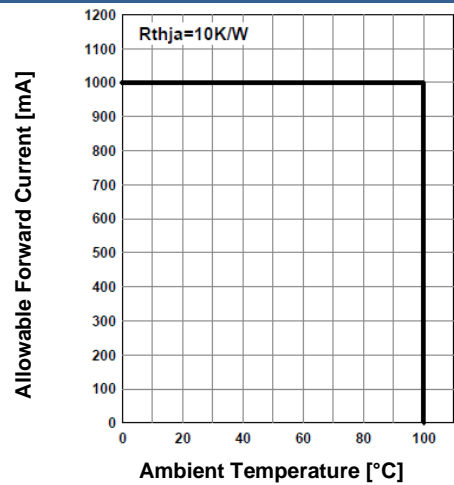
Relative Radiant Intensity vs. Forward Current



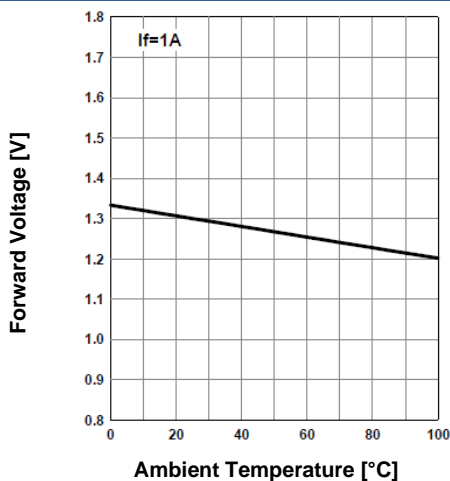
Forward Current vs. Pulse Duration



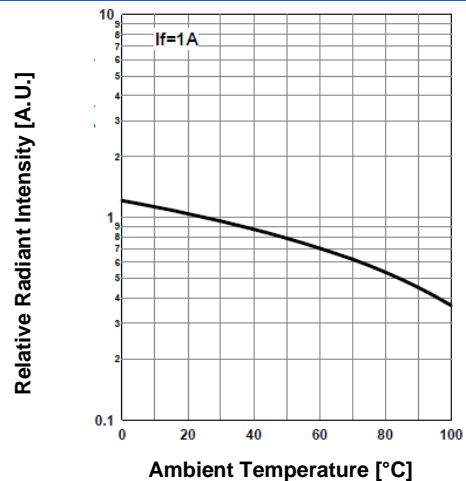
Allowed Forward Current vs. Amb. Temperature



Forward Voltage vs. Ambient Temperature



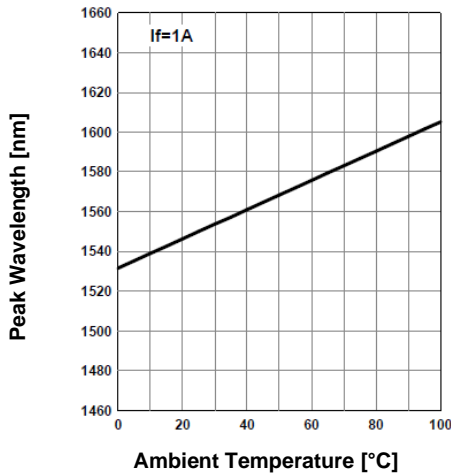
Rel. Radiant Intensity vs. Ambient Temperature



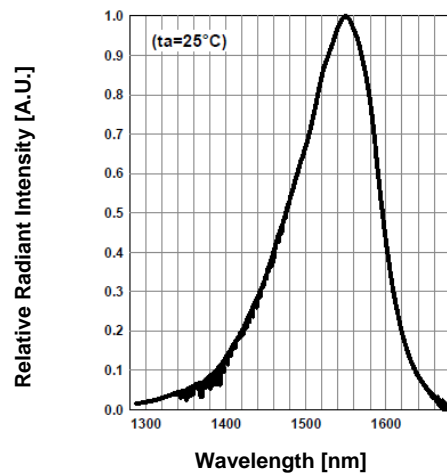


Typical Performance Curves

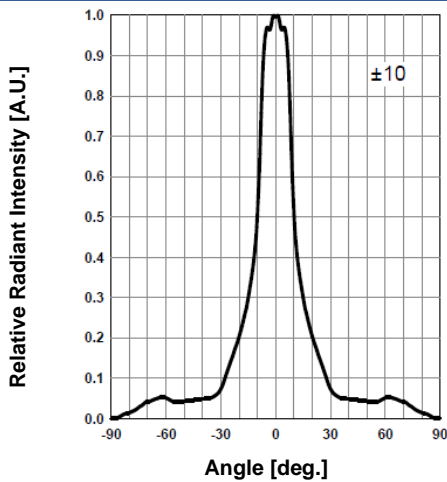
Peak Wavelength vs. Amb. Temp.



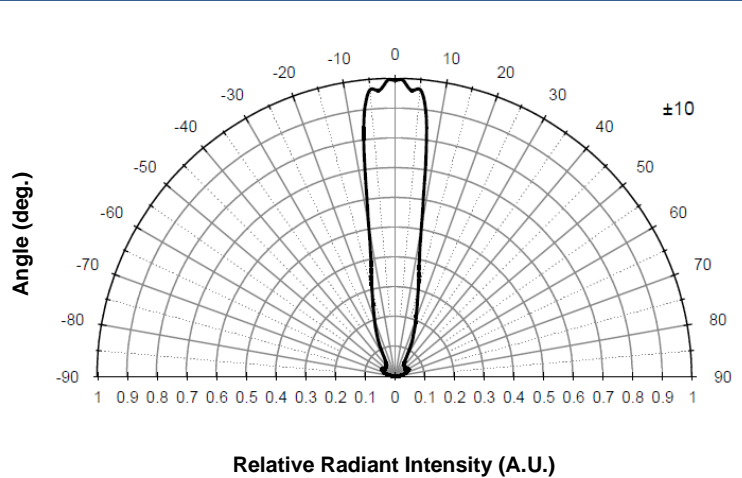
Relative Spectral Emission



Radiation Characteristics

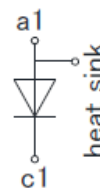
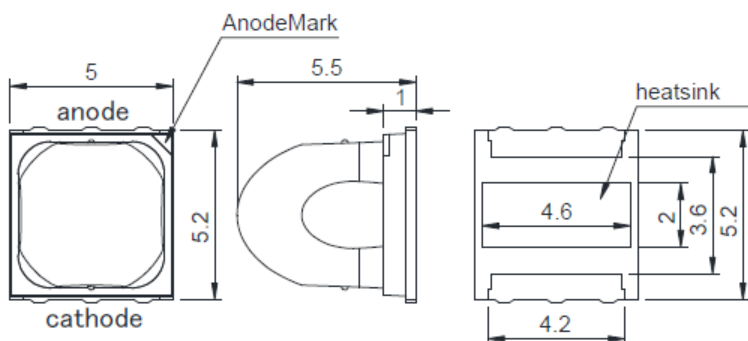


Radiation Characteristics



Outline Dimensions

PA9T



Lead	Function
Pin a1	Anode
Pin c1	Cathode

all dimensions in mm

