

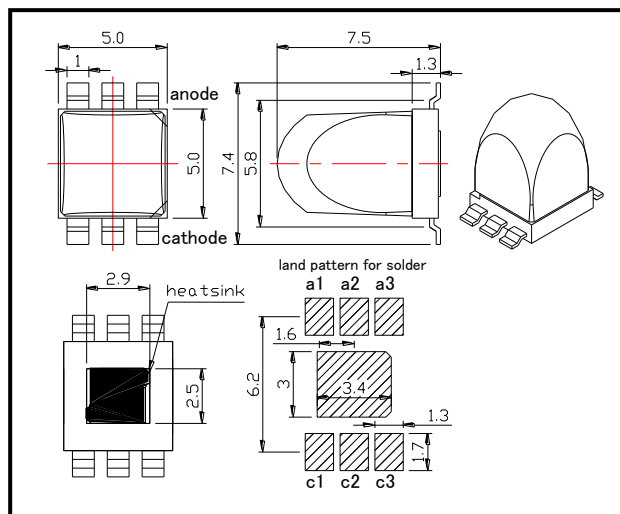
SMB870-1100-01-I High Power type Top LED with Lens

SMB870-1100-01 is an AlGaAs LED mounted on insulating heat sink with a 5*5 mm package and with super beam epoxy resin lens and is 3200mW/sr at I_{FP}=4A.

◆ Specifications

- 1) Product Name High Power Top LED
- 2) Type No. SMB870-1100-01-I
- 3) Chip
 - (1) Chip Material GaAlAs
 - (2) Chip Dimension 1000um*1000um
 - (3) Chip Number 1pce
 - (4) Peak Wavelength 870nm typ.
- 4) Package
 - (1) Lead Frame Die Silver Plated on Copper
 - (2) Insulator AlN ceramics
 - (3) Package Resin PPA Resin
 - (4) Lens Epoxy Resin

◆ Outer dimension (Unit: mm)



◆ Absolute Maximum Ratings

Item	Symbol	Maximum Rated Value	Unit	Ambient Temperature
Power Dissipation	P _D	1800	mW	T _a =25°C
Forward Current	I _F	800	mA	T _a =25°C
Pulse Forward Current	I _{FP}	4000	mA	T _a =25°C
Reverse Voltage	V _R	10	V	T _a =25°C
Thermal Resistance	R _{thja}	10	K/W	
Operating Temperature	T _{OPR}	-30 ~ +85	°C	
Storage Temperature	T _{STG}	-30 ~ +100	°C	
Soldering Temperature	T _{SOL}	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

‡Thermal resistance: junction-ambient air flow

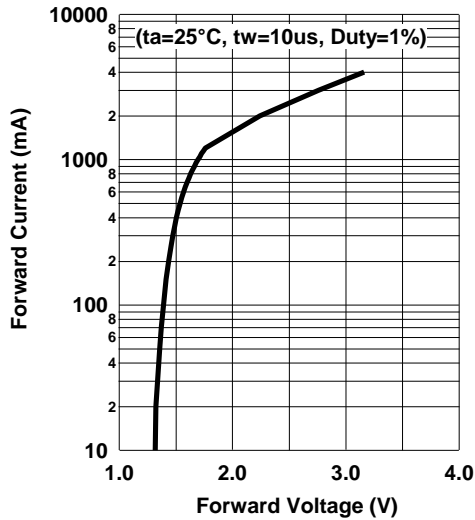
◆ Electro-Optical Characteristics [T_a=25°C]

Item	Symbol	Condition	Minimum	Typical	Maximum	Unit
Forward Voltage	V _F	I _F =600mA		1.7	2.1	V
	V _{FP}	I _{FP} =4A		4.2	5.5	
Radiated Power	P _O	I _F =600mA	160	230		mW
		I _{FP} =4A		1500		
Radiant Intensity	I _E	I _F =600mA		490		mW/sr
		I _{FP} =4A		3200		
Peak Wavelength	λ _P	I _F =100mA		870		nm
Half Width	Δλ	I _F =100mA		45		nm
Viewing Half Angle	θ _{1/2}	I _F =100mA		±7		deg.
Rise Time	t _r	I _F =100mA		15		ns
Fall Time	t _f	I _F =100mA		10		ns

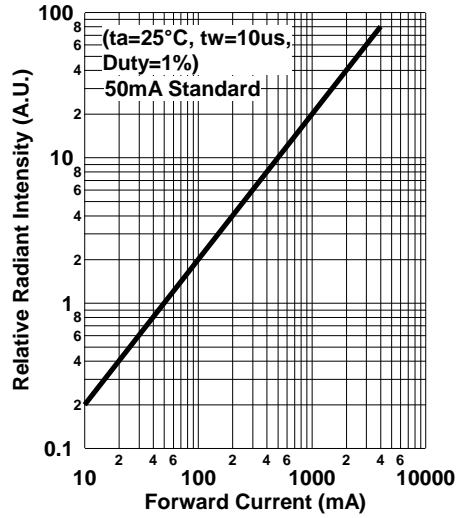
‡Radiated Power is measured by S3584-08.

‡Radiant Intensity is measured by Tektronix J-6512.

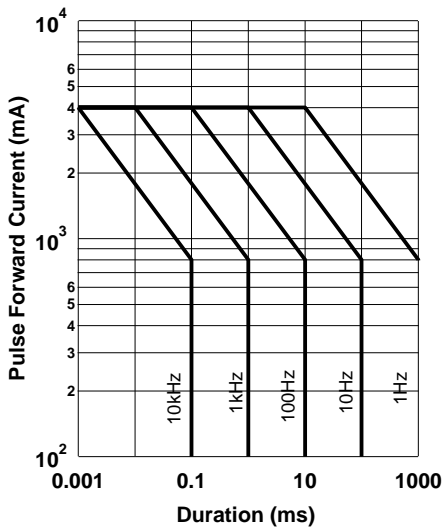
Forward Current - Forward Voltage



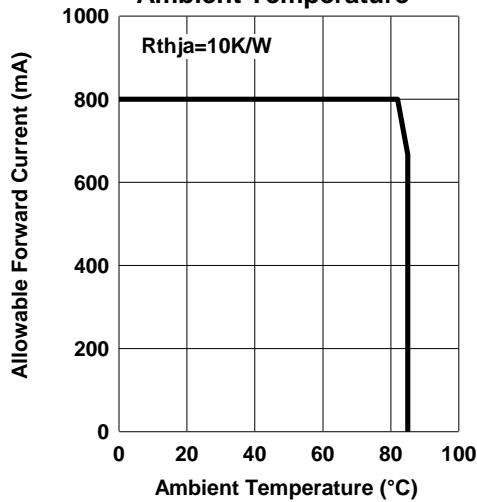
Relative Radiant Intensity - Forward Current



Forward Current-Pulse Duration



Allowable Forward Current - Ambient Temperature



Relative Spectral Emission

