

Lead (Pb) Free Product – RoHS Compliant

SMB680-1100-03-I

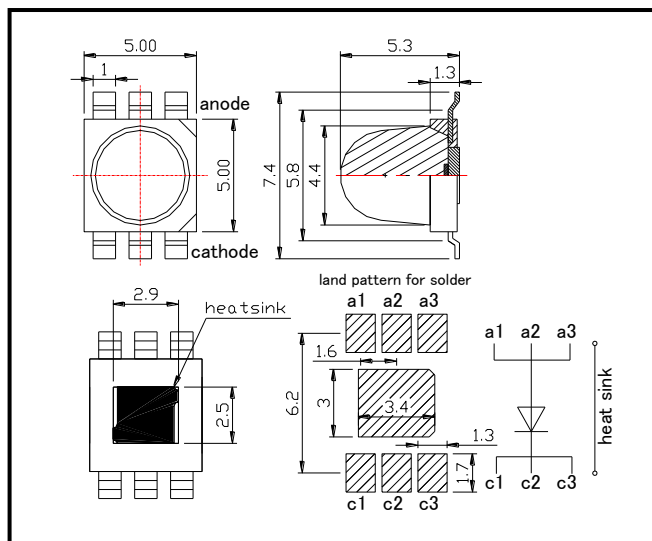
High Power type Top LED with Lens

SMB680-1100-03-I is an AlGaAs LED mounted on copper heat sink with a 5*5 mm package
These devices are available to be operated and 1,200mW/sr at IFP=4A.

◆ Specifications

- 1) Product Name High Power Top LED
- 2) Type No. SMB680-1100-03-I
- 3) Chip
 - (1) Chip Material AlGaAs
 - (2) Chip Dimension 1000um*1000um
 - (3) Chip Number 1pce
 - (4) Peak Wavelength 680nm 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	1600	mW	T _a =25°C
Forward Current	I _F	600	mA	T _a =25°C
Pulse Forward Current	I _{FP}	4000	mA	T _a =25°C
Reverse Voltage	V _R	5	V	T _a =25°C
Thermal Resistance	R _{thja}	10	K/W	
Junction Temperature	T _j	100	°C	
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

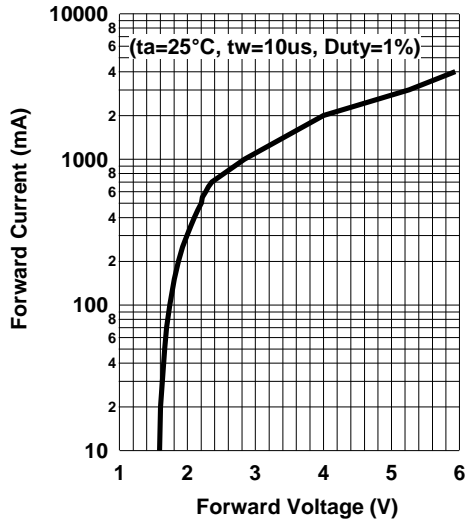
◆ Electro-Optical Characteristics [T_a=25°C]

Item	Symbol	Condition	Minimum	Typical	Maximum	Unit
Forward Voltage	V _F	I _F =500mA		2.4	2.7	V
	V _{FP}	I _{FP} =4A		5.0	6.0	V
Radiated Power	P _O	I _F =500mA		90		mW
		I _{FP} =4A		720		
Radiant Intensity	I _E	I _F =500mA		150		mW/sr
		I _{FP} =4A		1200		
Peak Wavelength	λ _P	I _F =100mA		680		nm
Half Width	Δλ	I _F =100mA		25		nm
Viewing Half Angle	θ _{1/2}	I _F =100mA		±10		deg.
Rise Time	t _r	I _F =100mA		80		ns
Fall Time	t _f	I _F =100mA		80		ns

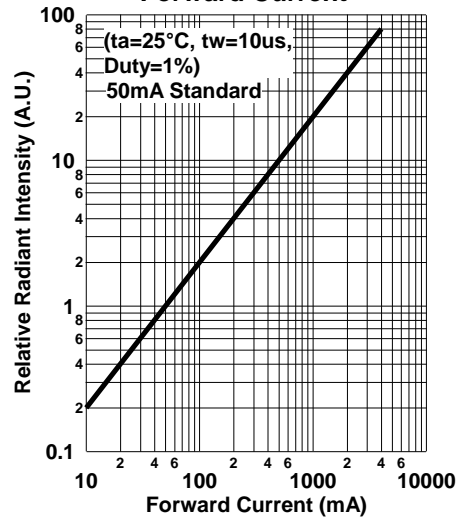
‡Radiated Power is measured by S3584-08.

‡Radiant Intensity is measured by Tektronix J-6512.

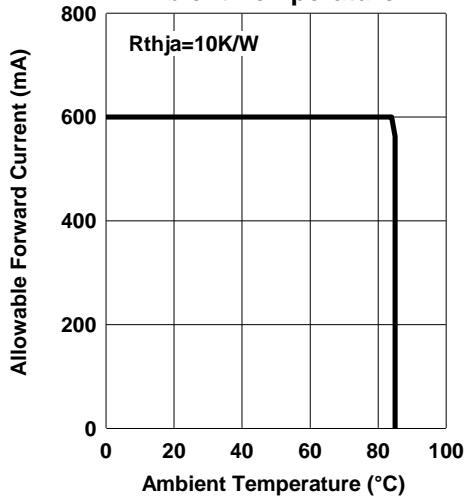
Forward Current - Forward Voltage



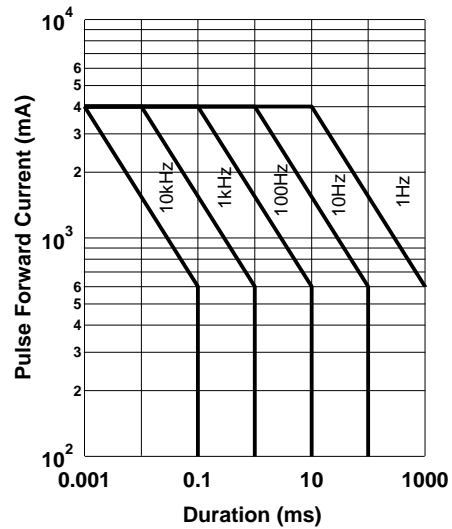
Relative Radiant Intensity - Forward Current



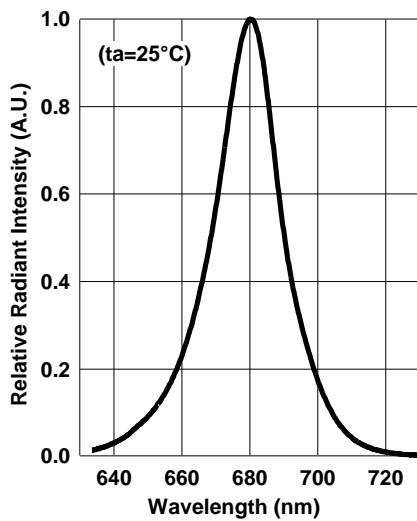
Allowable Forward Current - Ambient Temperature

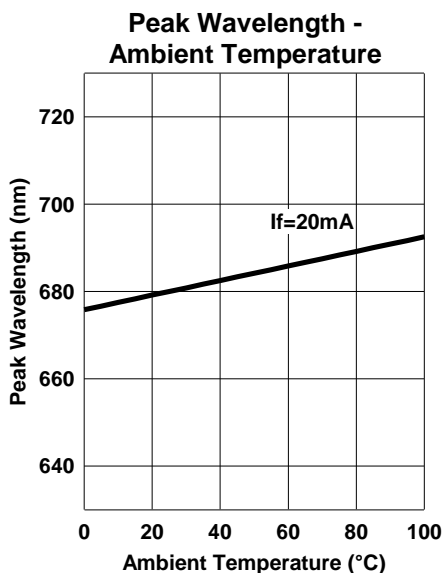
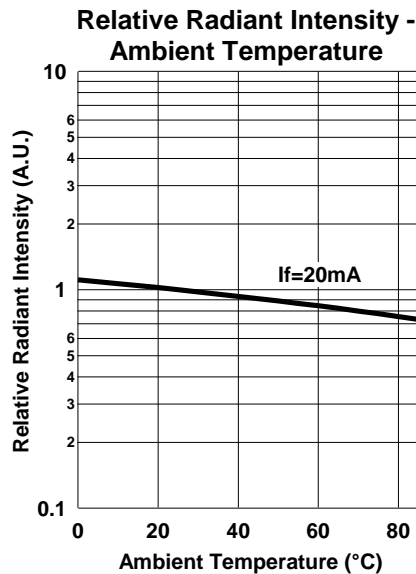
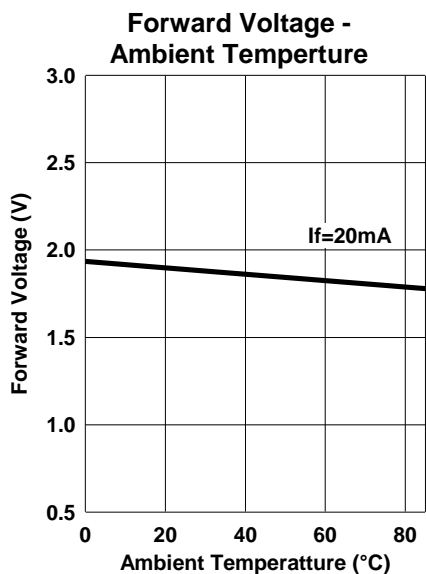


Forward Current-Pulse Duration



Relative Spectral Emission

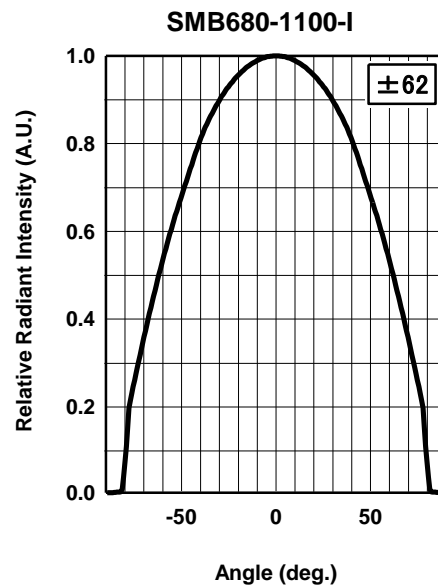
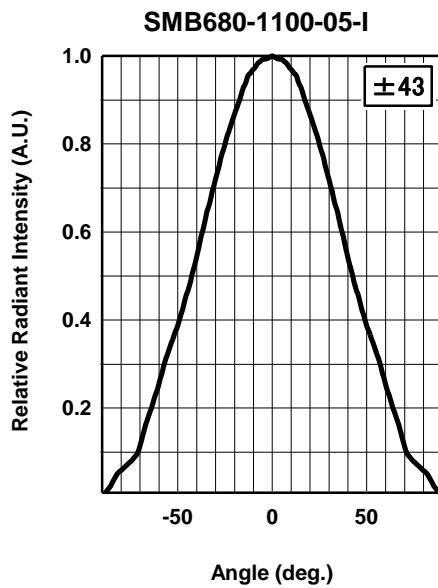
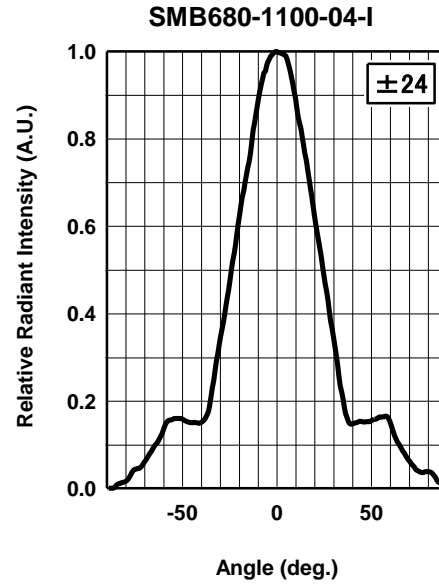
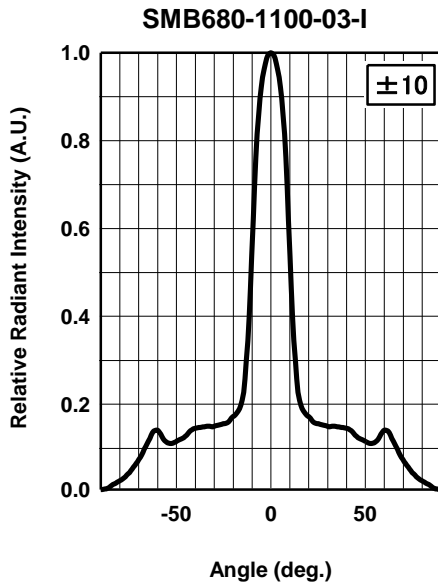
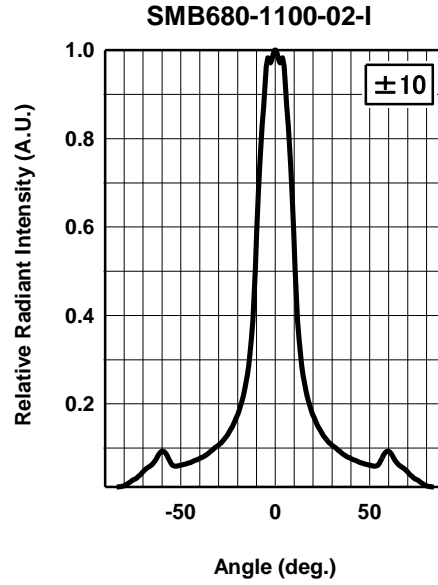
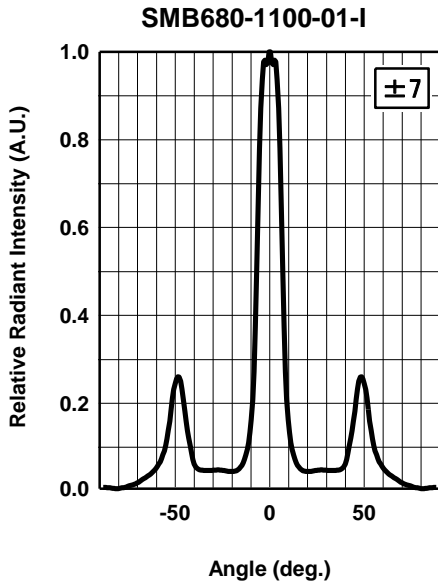




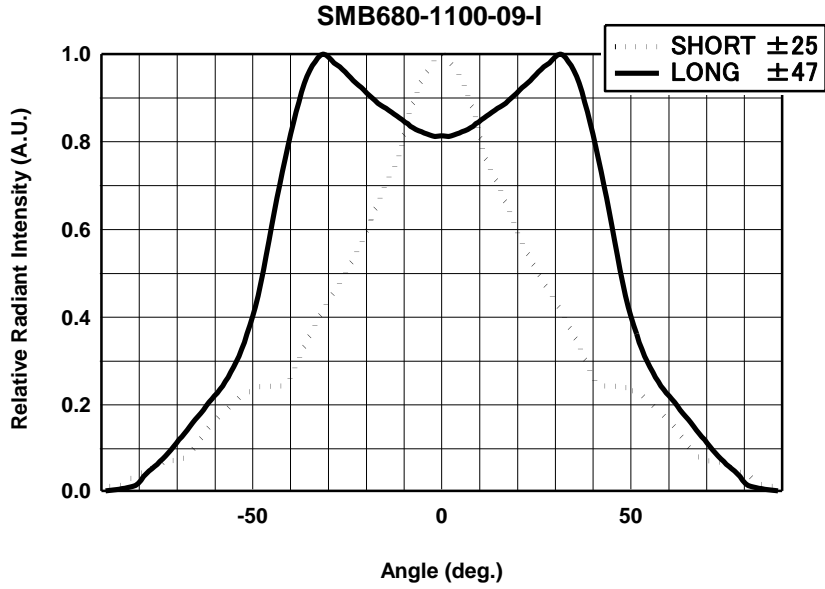
◆ Wrapping

Moisture barrier bag aluminum laminated film with a desiccant to keep out the moisture absorption during the transportation and storage.

Radiation Pattern



Radiation Pattern



SMD LED STORAGE AND HANDLING PRECAUTIONS

< Storage Conditions before Opening a Moisture-Barrier Aluminum Bag >

- Before opening a moisture-barrier aluminum bag, please store it at <30°C, <60%RH. Please note that the maximum shelf life is 12 months under these conditions.

< Storage Conditions after Opening a Moisture-Barrier Aluminum Bag >

- After opening a moisture-barrier aluminum bag, store the aluminum bag and silica gel in a desiccator.
- After opening the bag, please solder the LEDs within 48 hours in a room with 5 - 30°C, <50%RH.
- Please put any unused, remaining LEDs and silica gel back in the same aluminum bag and then vacuum-seal the bag.
- It is recommended to keep the re-sealed bag in a desiccator at <30%RH.

< Notes about Re-sealing a Moisture-Barrier Aluminum Bag >

- When vacuum-sealing an opened aluminum bag, if you find the moisture-indicator of the silica gel has changed to pink from blue (indicating a relative humidity of 30 % or more), please do not use the unused LEDs, the aluminum bag, or the silica gel.

< Notes about Opening a Re-sealed Moisture-Barrier Aluminum Bag >

- When opening a vacuumed and re-sealed aluminum bag in order to use the remaining LEDs stored in the bag, if you find that the moisture-indicator of the silica has changed to pink, please do not use the LEDs.

※The 48 -hour- long floor life does not include the time while LEDs are stored in the moisture-barrier aluminum bag.

However, we strongly recommend to solder the LEDs as soon as possible after opening the aluminum bag.