

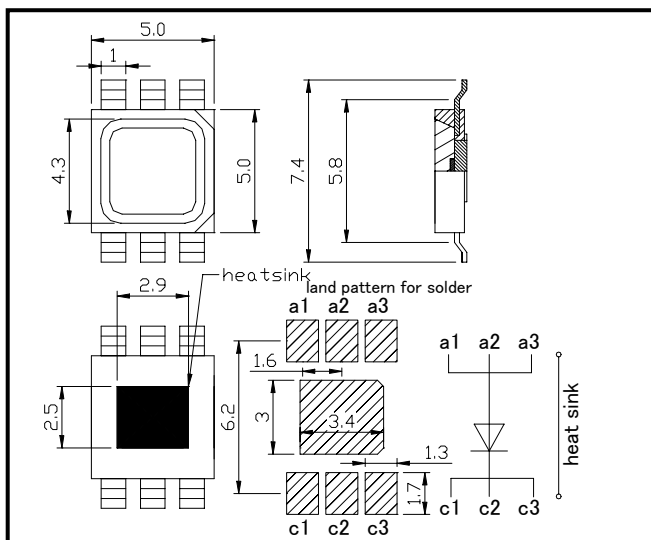
SMB680-1100-I High Power type Top LED with Lens

SMB680-1100-I is an AlGaAs LED mounted on copper heat sink with a 5*5 mm package
 These devices are available to be operated and 280mW/sr at IFP=4A.

◆ Specifications

- 1) Product Name High Power Top LED
- 2) Type No. SMB680-1100-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	$T_a=25^{\circ}\text{C}$
Forward Current	I_F	600	mA	$T_a=25^{\circ}\text{C}$
Pulse Forward Current	I_{FP}	4000	mA	$T_a=25^{\circ}\text{C}$
Reverse Voltage	V_R	5	V	$T_a=25^{\circ}\text{C}$
Thermal Resistance	R_{thja}	10	K/W	
Junction Temperature	T_j	100	$^{\circ}\text{C}$	
Operating Temperature	T_{OPR}	-30 ~ +85	$^{\circ}\text{C}$	
Storage Temperature	T_{STG}	-30 ~ +100	$^{\circ}\text{C}$	
Soldering Temperature	T_{SOL}	255	$^{\circ}\text{C}$	

‡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 [$T_a=25^{\circ}\text{C}$]

Item	Symbol	Condition	Minimum	Typical	Maximum	Unit
Forward Voltage	V_F	$I_F=500\text{mA}$		2.4	2.7	V
	V_{FP}	$I_{FP}=4\text{A}$		5.0	6.0	V
Radiated Power	P_O	$I_F=500\text{mA}$		90		mW
		$I_{FP}=4\text{A}$		720		
Radiant Intensity	I_E	$I_F=500\text{mA}$		35		mW/sr
		$I_{FP}=4\text{A}$		280		
Peak Wavelength	λ_P	$I_F=100\text{mA}$		680		nm
Half Width	$\Delta\lambda$	$I_F=100\text{mA}$		25		nm
Viewing Half Angle	$\theta_{1/2}$	$I_F=100\text{mA}$		± 62		deg.
Rise Time	t_r	$I_F=100\text{mA}$		80		ns
Fall Time	t_f	$I_F=100\text{mA}$		80		ns

‡Radiated Power is measured by S3584-08.

‡Radiant Intensity is measured by Tektronix J-6512.

USHIO EUROPE B.V. (www.ushio.eu)

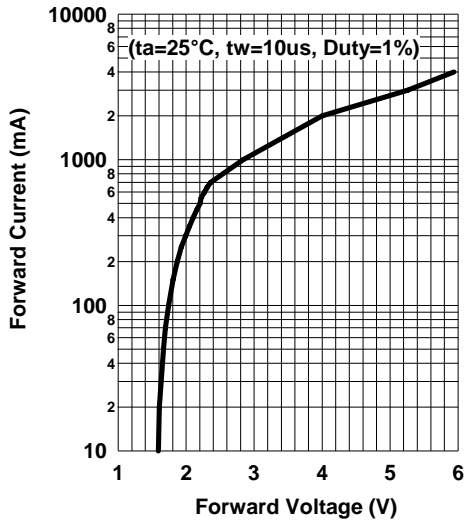
Sky Park, Breguetlaan 16-18, 1438 BC, Oude Meer, The Netherlands

Tel: +31-20-4469-333

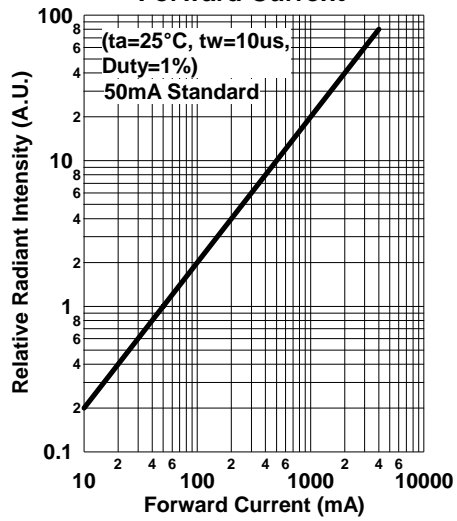
Fax: +31-20-4469-360

E-mail: led@ushio-europe.nl

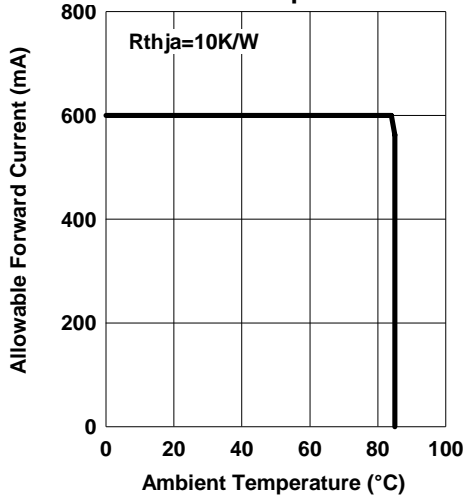
Forward Current - Forward Voltage



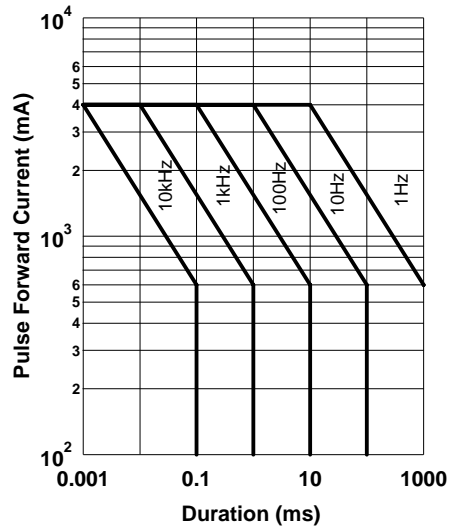
Relative Radiant Intensity - Forward Current



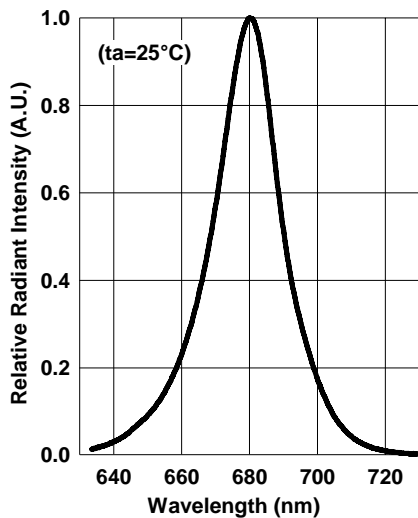
Allowable Forward Current - Ambient Temperature

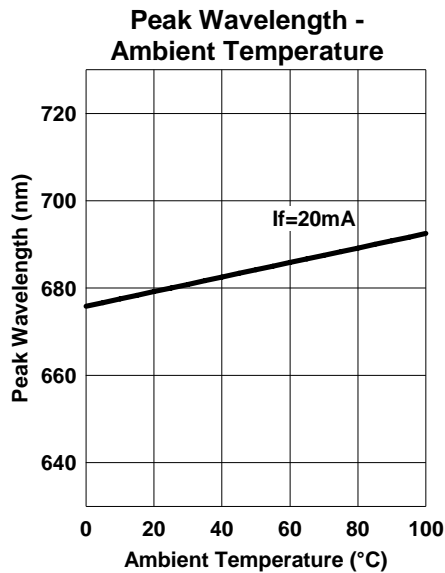
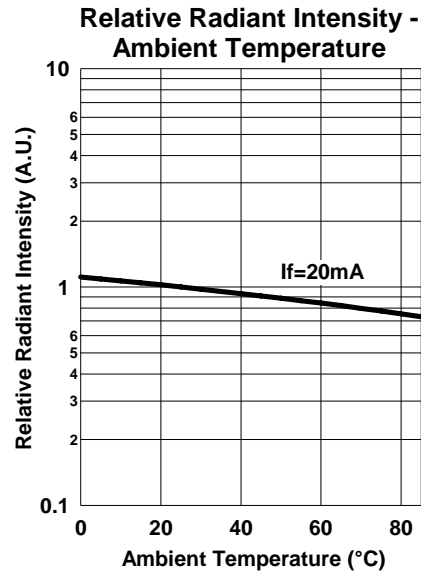
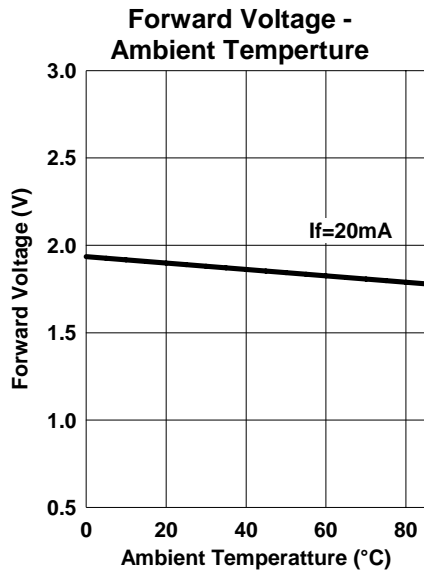


Forward Current-Pulse Duration



Relative Spectral Emission

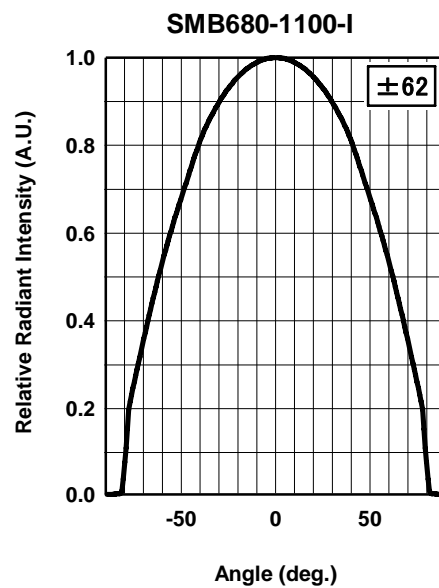
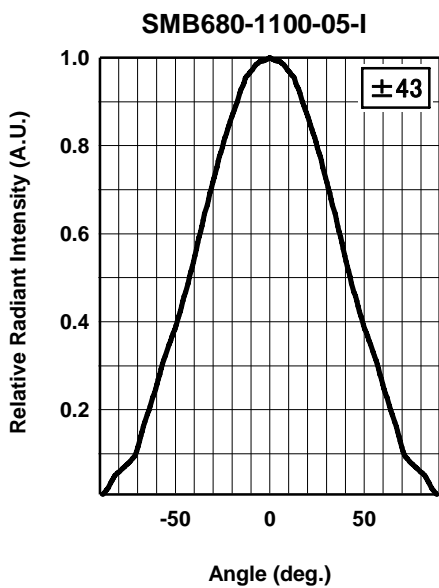
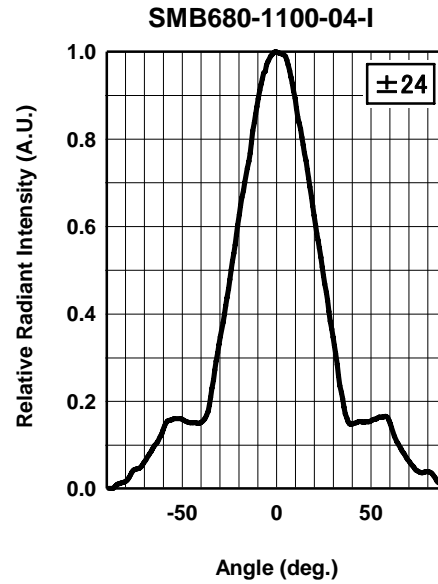
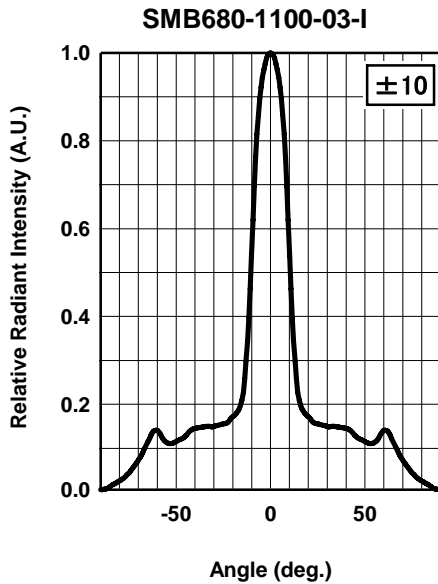
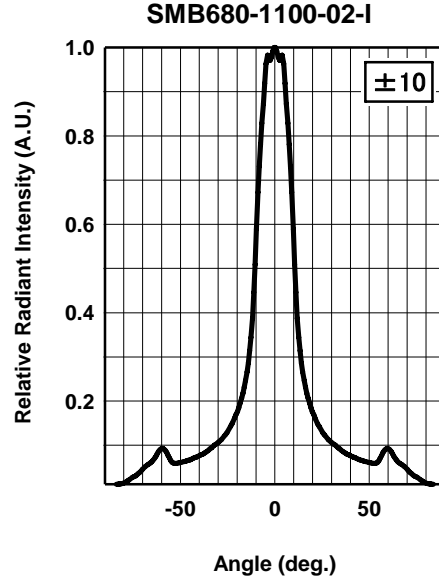
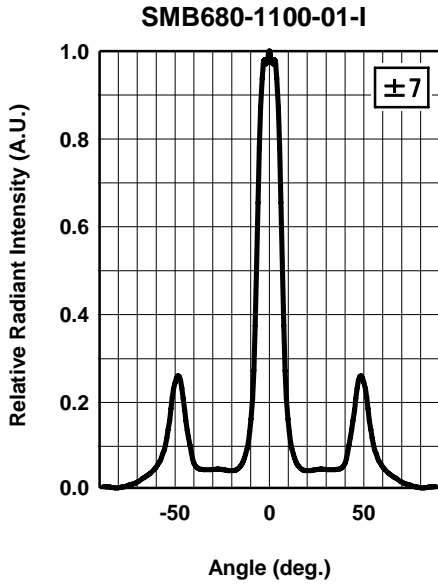


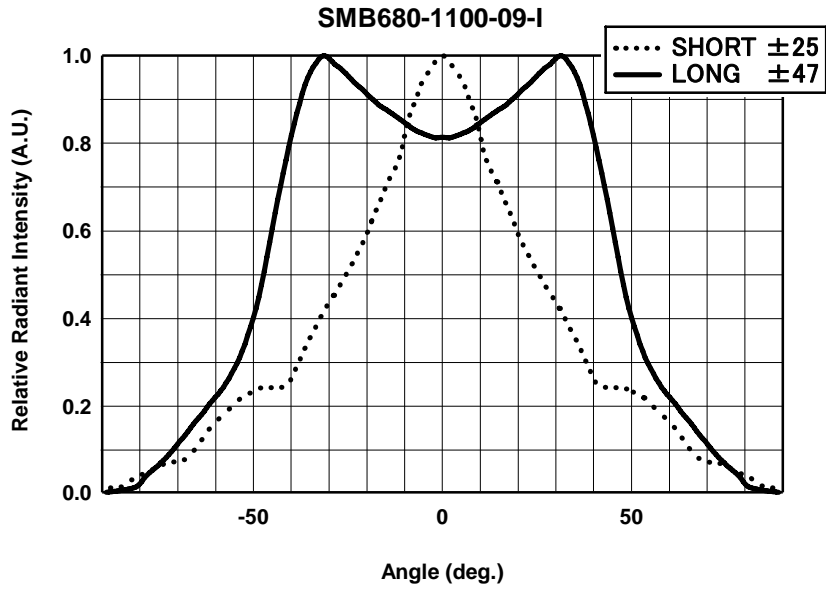


◆ Wrapping

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

Radiation Pattern





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 72 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 72-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.