

SMB850D-1100-09-I

High Power type Top LED with Lens

SMB850D-1100-09-I is an AlGaAs LED mounted on copper heat sink with a 5*5 mm package

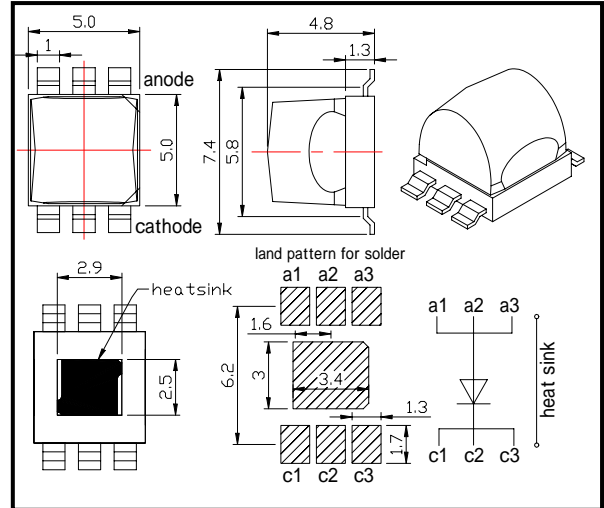
These devices are available to be operated and 1,400mW/sr at IFP=3A.

This device is suitable for application such as driver drowsiness alarm systems.

◆ Specifications

- | | |
|---------------------|-------------------------|
| 1) Product Name | High Power Top LED |
| 2) Type No. | SMB850D-1100-09-I |
| 3) Chip | |
| (1) Chip Material | GaAlAs |
| (2) Chip Dimension | 1000um*1000um |
| (3) Chip Number | 1pce |
| (4) Peak Wavelength | 850nm typ. |
| 4) Package | |
| (1) Lead Frame Die | Silver Plated on Copper |
| (2) Package Resin | PPA Resin |
| (3) Lens | Epoxy Resin |

◆ Outer dimension (Unit: mm)



◆ Absolute Maximum Ratings

Item	Symbol	Maximum Rated Value	Unit	Ambient Temperature
Power Dissipation	P_D	2500	mW	$T_a=25^{\circ}\text{C}$
Forward Current	I_F	1000	mA	$T_a=25^{\circ}\text{C}$
Pulse Forward Current	I_{FP}	3000	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

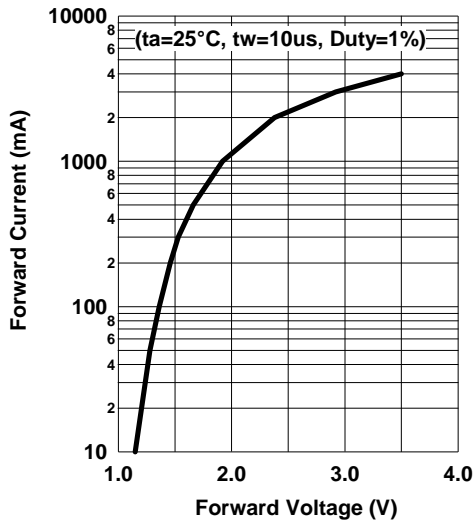
◆ Electro-Optical Characteristics [$T_a=25^{\circ}\text{C}$]

Item	Symbol	Condition	Minimum	Typical	Maximum	Unit
Forward Voltage	V_F/V_{FP}	$I_F=800\text{mA}$		2.0	2.4	V
		$I_{FP}=3\text{A}$		3.5	4.5	
Radiated Power	P_O	$I_F=800\text{mA}$	370	490		mW
		$I_{FP}=3\text{A}$		1,800		
Radiant Intensity	I_E	$I_F=800\text{mA}$		370		mW/sr
		$I_{FP}=3\text{A}$		1,400		
Peak Wavelength	λ_P	$I_F=100\text{mA}$		850		nm
Half Width	$\Delta\lambda$	$I_F=100\text{mA}$		20		nm
Viewing Half Angle	$\theta_{1/2}$	$I_F=100\text{mA}$		long	± 42	deg.
				short	± 24	
Rise Time	t_r	$I_F=100\text{mA}$		25		ns
Fall Time	t_f	$I_F=100\text{mA}$		15		ns

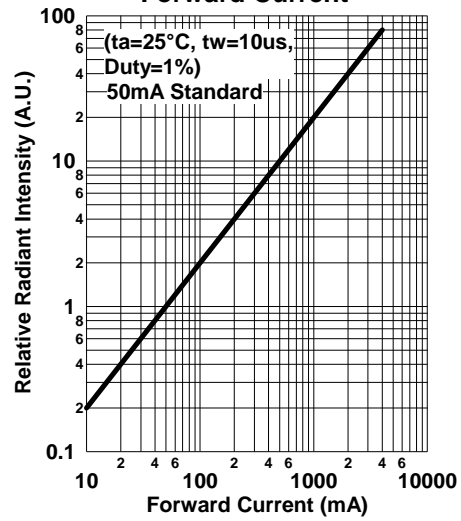
‡Radiated Power is measured by S3584-08.

‡Radiant Intensity is measured by Tektronix J-6512.

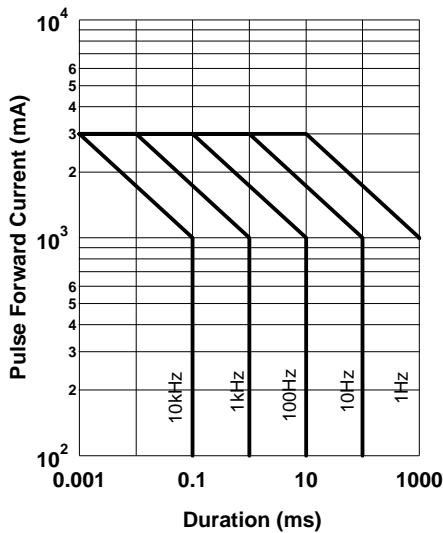
Forward Current - Forward Voltage



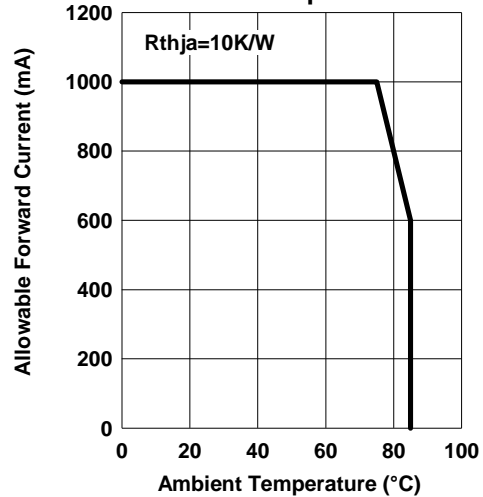
Relative Radiant Intensity - Forward Current



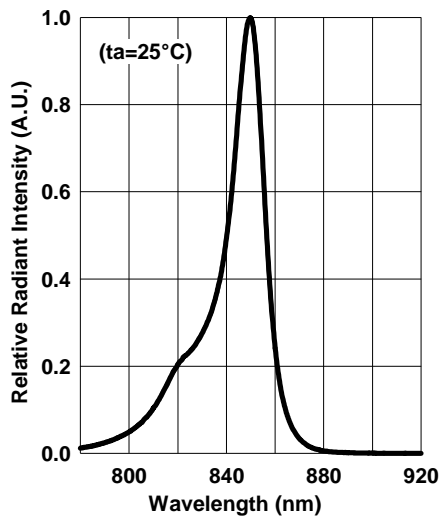
Forward Current-Pulse Duration

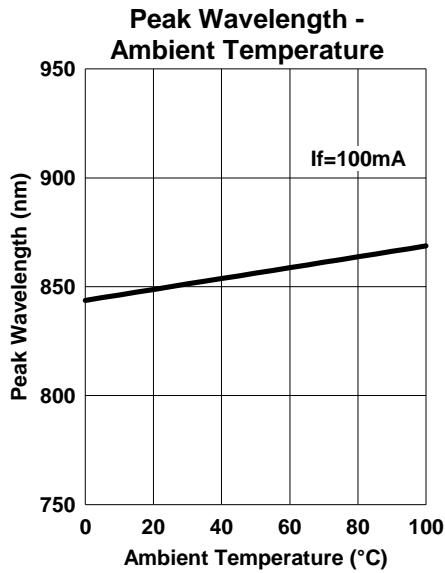
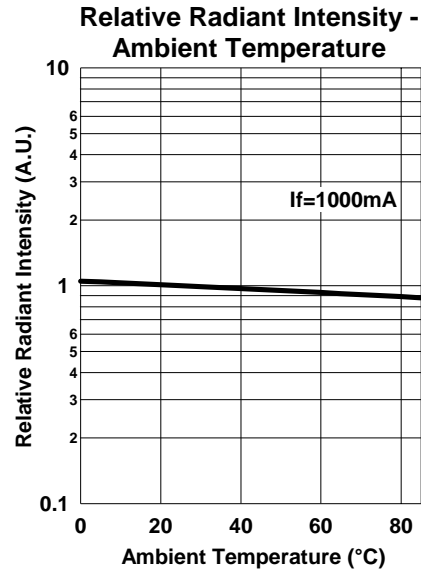
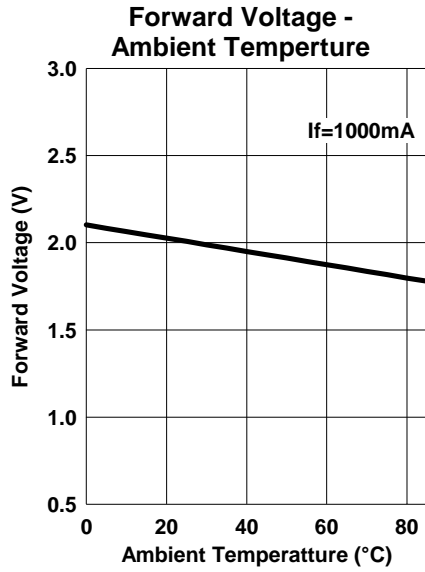


Allowable Forward Current - Ambient Temperature



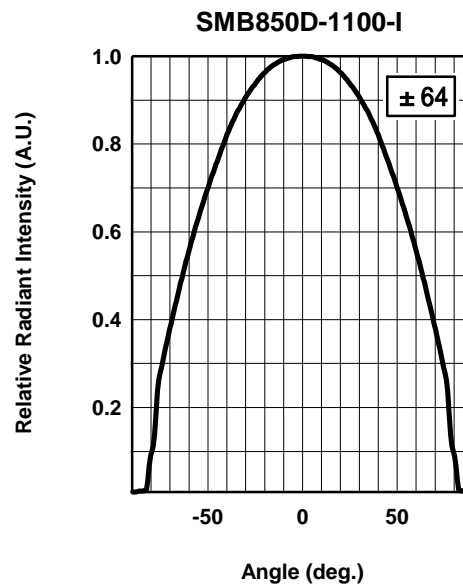
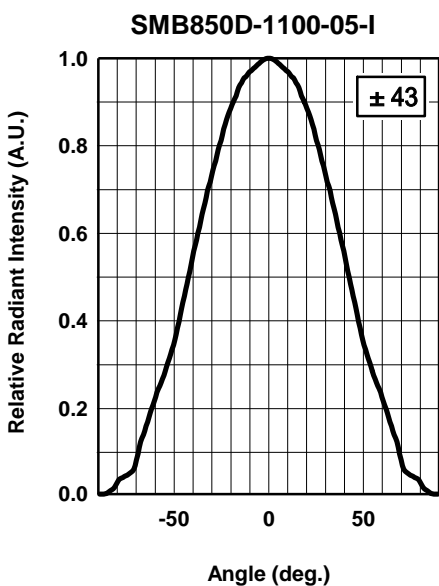
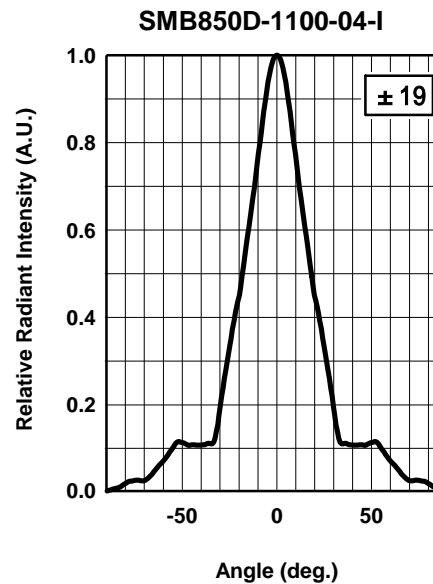
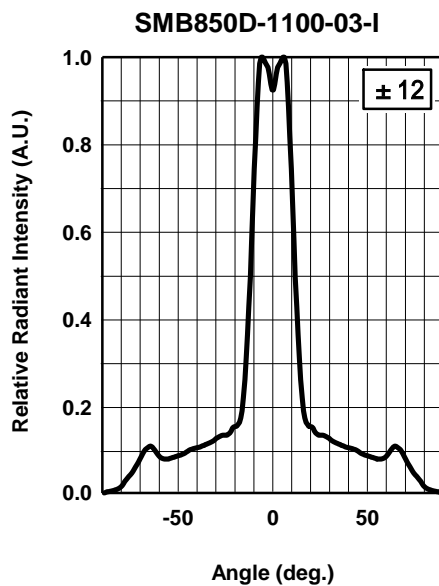
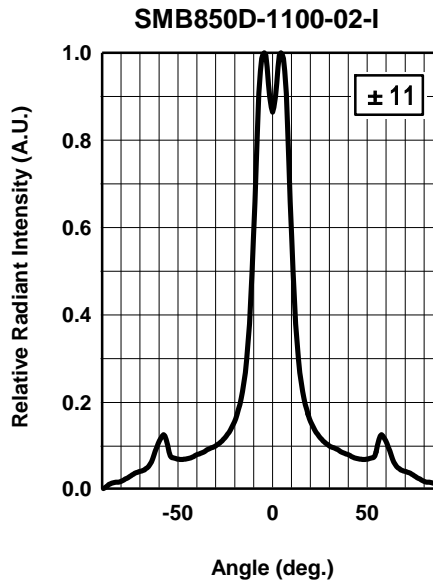
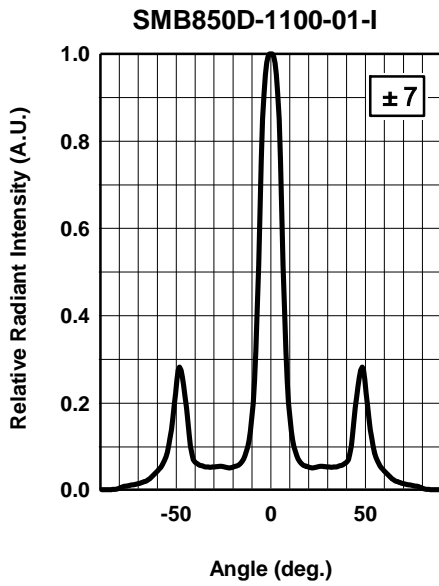
Relative Spectral Emission

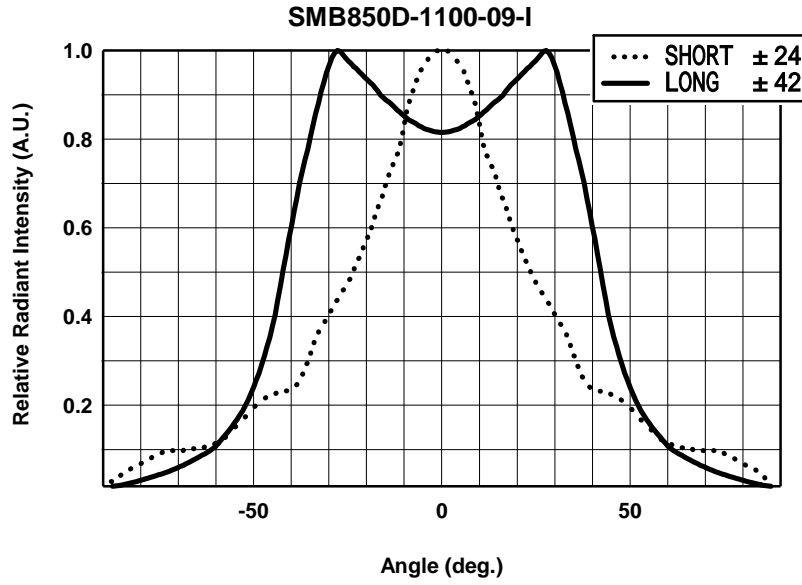




• Wrapping

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





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.