

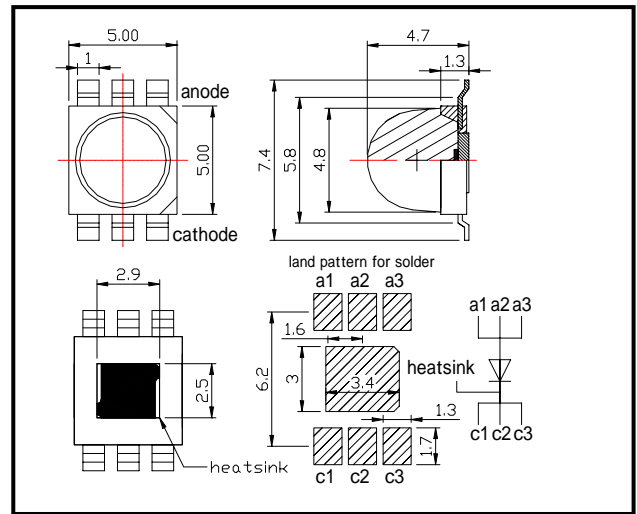
SMB870-1100-04 High Power type Top LED

SMB870-1100-04 is an AlGaAs LED mounted on insulating heat sink with a 5*5 mm package
 These devices are available to be operated and 1700mW at I_{FP}=4A.

◆ Specifications

- | | |
|---------------------|-------------------------|
| 1) Product Name | High Power Top LED |
| 2) Type No. | SMB870-1100-04 |
| 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) 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°C
Forward Current	I _F	1000	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	
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

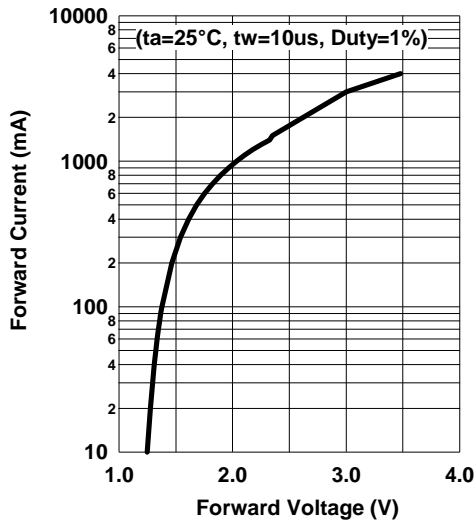
◆ Electro-Optical Characteristics [T_a=25°C]

Item	Symbol	Condition	Minimum	Typical	Maximum	Unit
Forward Voltage	V _F	I _F =1000mA		2.1	2.5	V
	V _{FP}	I _{FP} =4A		4.2	5.5	
Radiated Power	P _O	I _F =1000mA	280	430		mW
		I _{FP} =4A		1700		
Radiant Intensity	I _E	I _F =1000mA		540		mW/sr
		I _{FP} =4A		2150		
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		±17		deg.
Rise Time	t _r	I _F =100mA		15		ns
Fall Time	t _f	I _F =100mA		10		ns

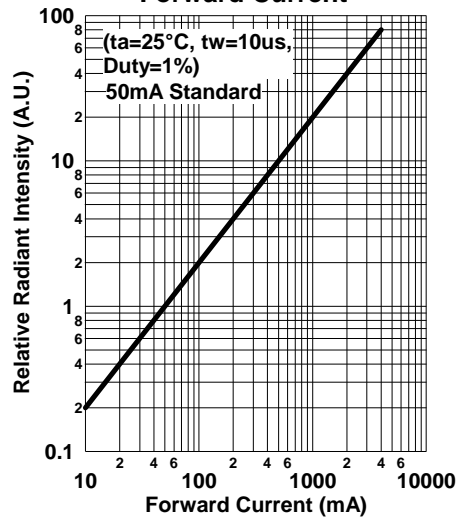
‡Radiated Power is measured by S3584-08.

‡Radiant Intensity is measured by Tektronix J-6512.

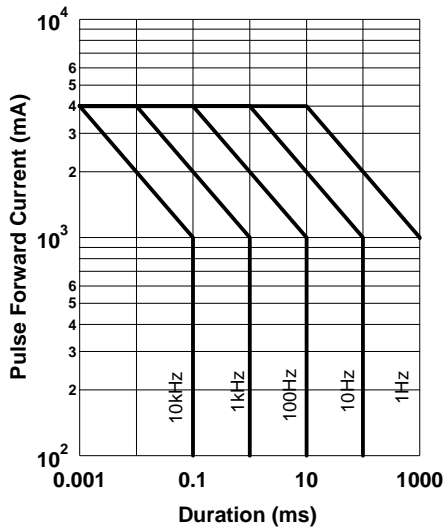
Forward Current - Forward Voltage



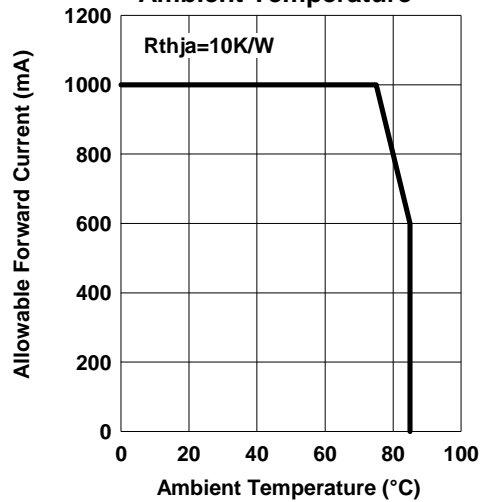
Relative Radiant Intensity - Forward Current



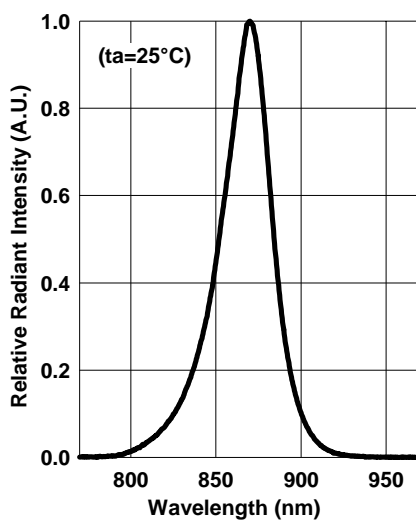
Forward Current-Pulse Duration

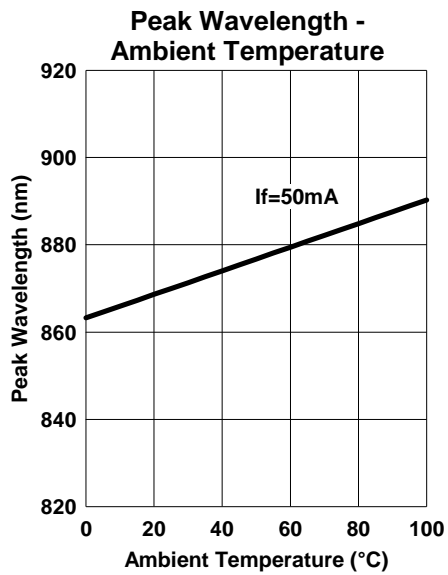
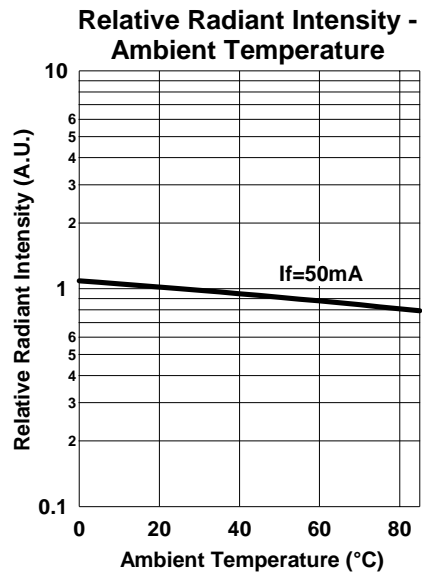
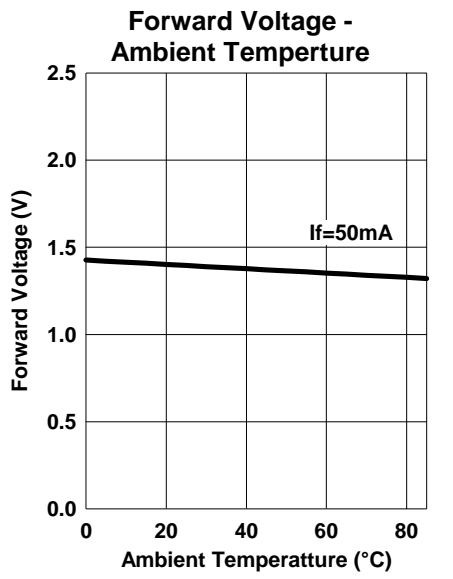


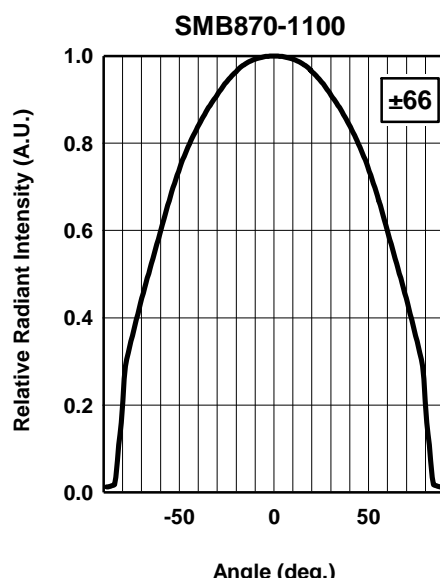
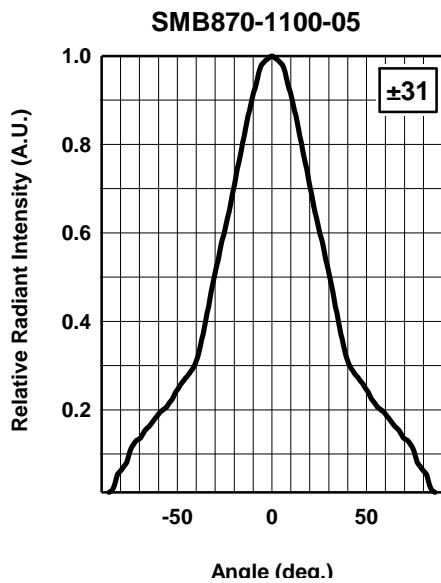
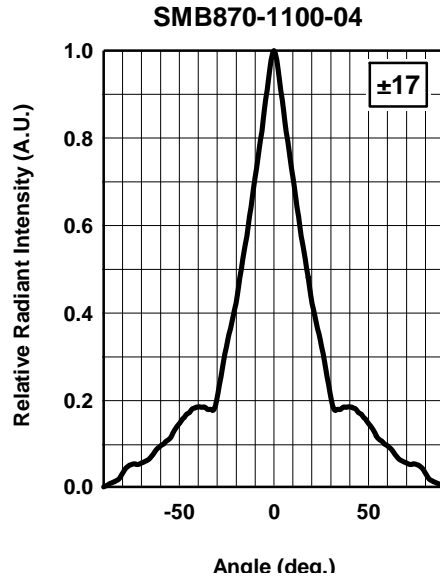
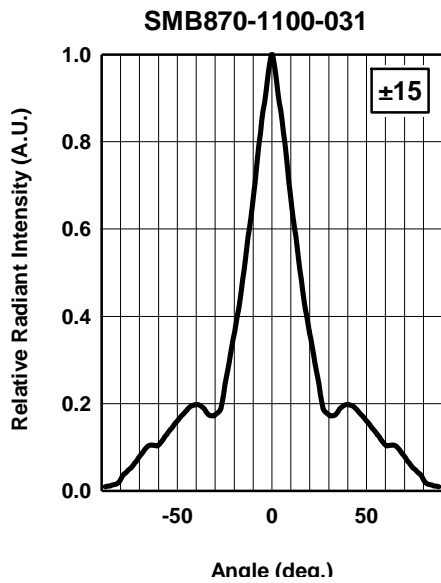
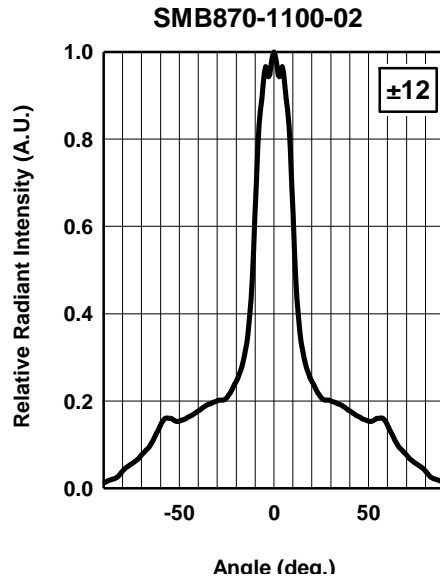
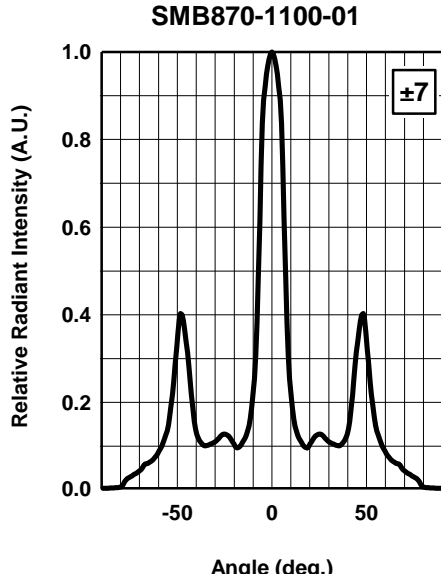
Allowable Forward Current - Ambient Temperature

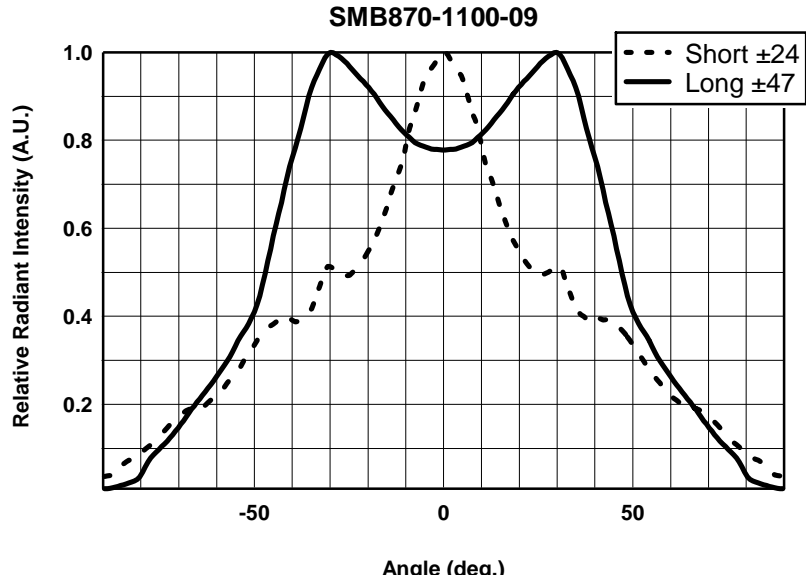


Relative Spectral Emission









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.