

SMB940-1100-02-I

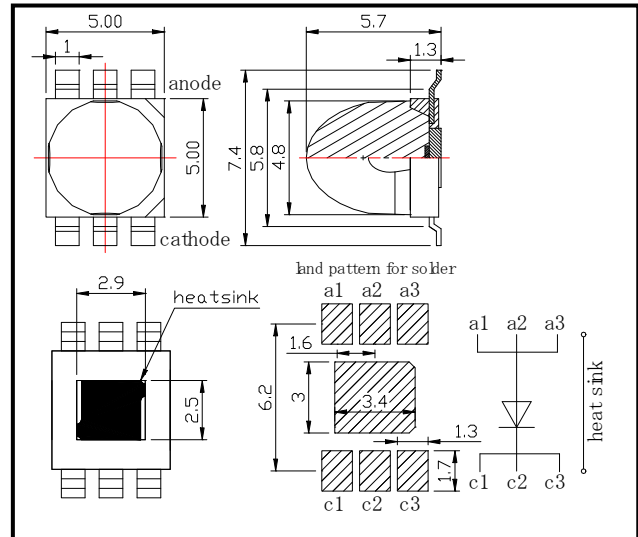
High Power type Top LED with Lens

SMB940-1100-02-I is an AlGaAs LED mounted on copper heat sink with a 5*5 mm package
 These devices are available to be operated and 1920mW/sr at IFP=4A.

◆ Specifications

- | | |
|---------------------|-------------------------|
| 1) Product Name | High Power Top LED |
| 2) Type No. | SMB940-1100-02-I |
| 3) Chip | |
| (1) Chip Material | GaAs |
| (2) Chip Dimension | 1000um*1000um |
| (3) Chip Number | 1pcs |
| (4) Peak Wavelength | 940nm 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 | 1000 | 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 3 seconds at 265°C

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

| Item | Symbol | Condition | Minimum | Typical | Maximum | Unit |
|--------------------|------------------|-----------------------|---------|---------|---------|-------|
| Forward Voltage | V _F | I _F =500mA | | 1.4 | 1.65 | V |
| | V _{FP} | I _{FP} =4A | | 2.6 | 3.5 | |
| Radiated Power | P _O | I _F =500mA | 70 | 120 | | mW |
| | | I _{FP} =4A | | 960 | | |
| Radiant Intensity | I _E | I _F =500mA | | 240 | | mW/sr |
| | | I _{FP} =4A | | 1920 | | |
| Peak Wavelength | λ _P | I _F =100mA | | 940 | | nm |
| Half Width | Δλ | I _F =100mA | | 60 | | nm |
| Viewing Half Angle | θ _{1/2} | I _F =100mA | | ±12 | | deg. |
| Rise Time | t _r | I _F =100mA | | 1000 | | ns |
| Fall Time | t _f | I _F =100mA | | 500 | | ns |

‡Radiated Power is measured by S3584-08.

‡Radiant Intensity is measured by Tektronix J-6512

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

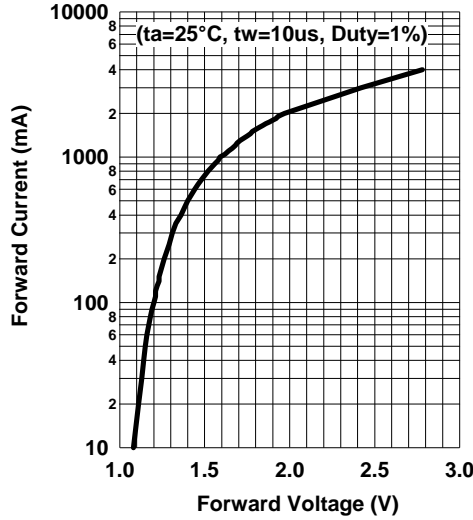
Sky Park, Breguetlaan 16-18, 1438 BC, Oude Meer, The Netherlands

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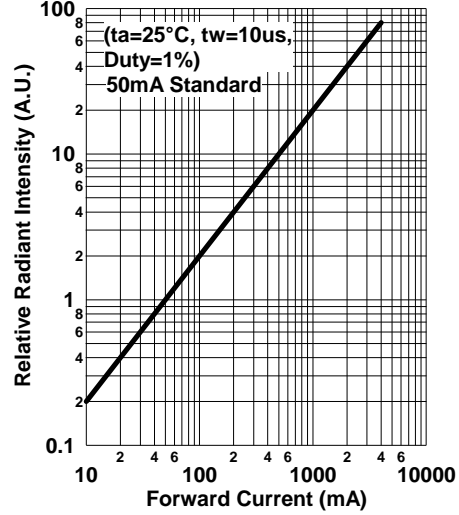
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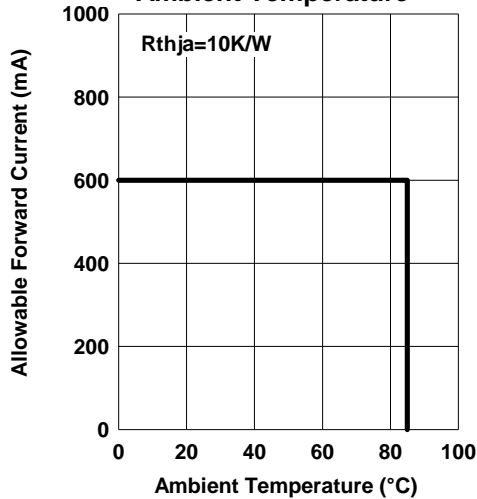
Forward Current - Forward Voltage



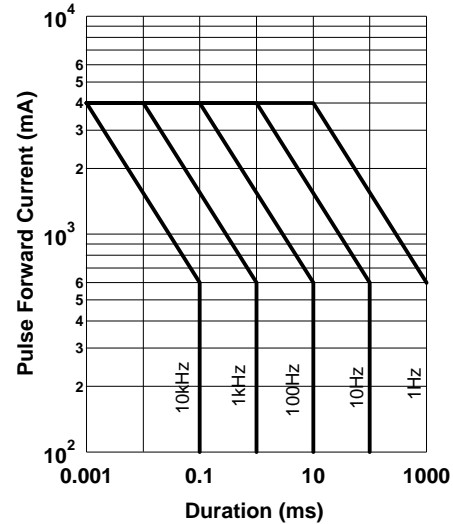
Relative Radiant Intensity - Forward Current



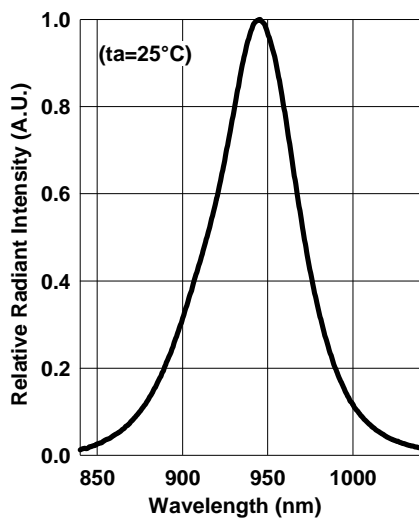
Allowable Forward Current - Ambient Temperature



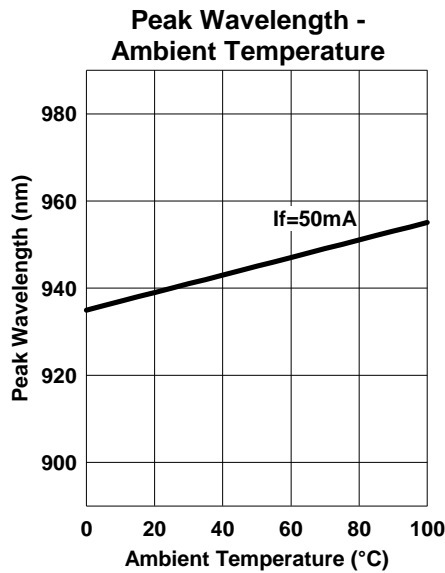
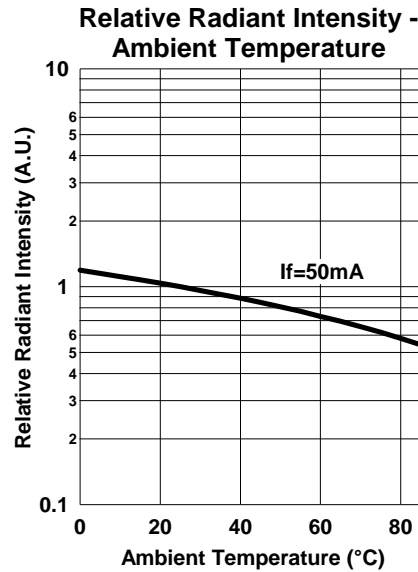
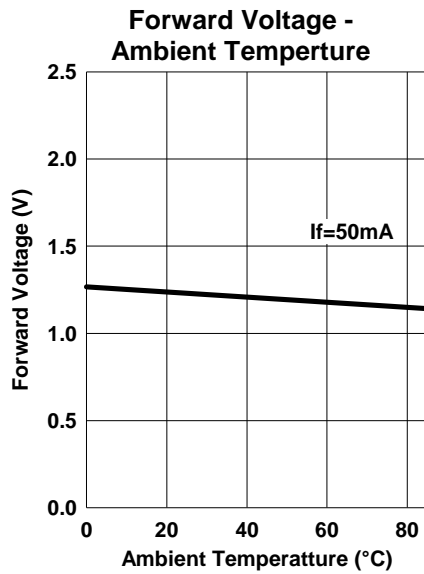
Forward Current-Pulse Duration



Relative Spectral Emission



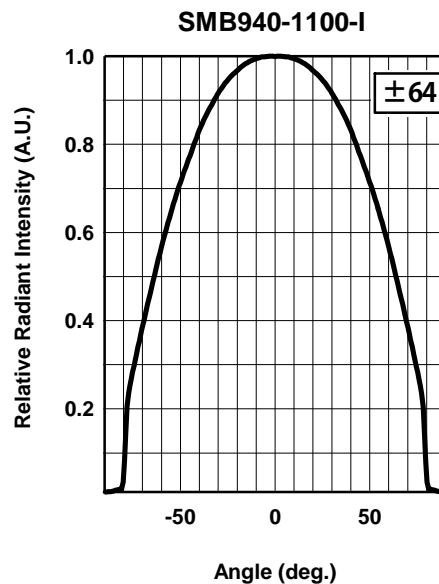
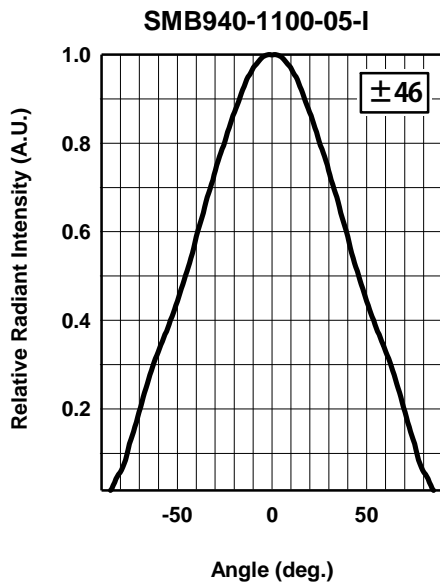
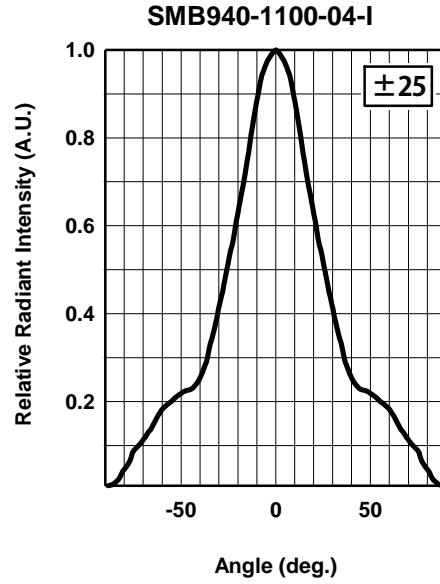
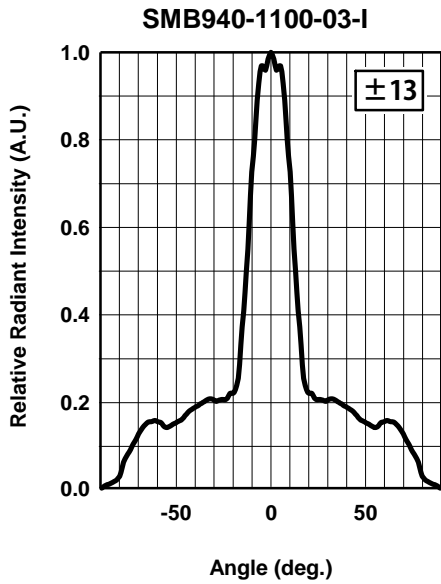
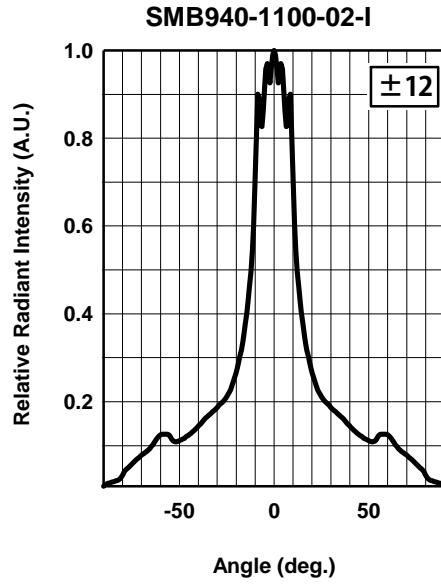
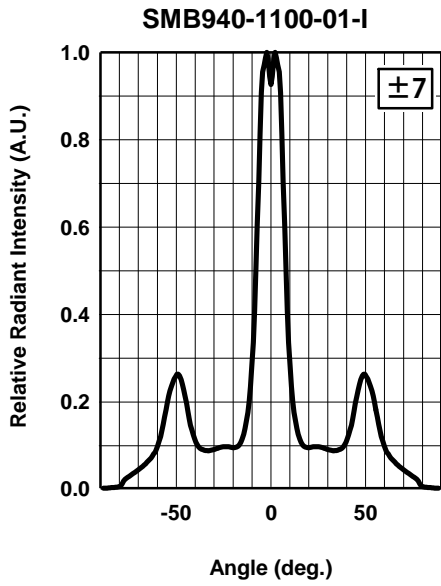
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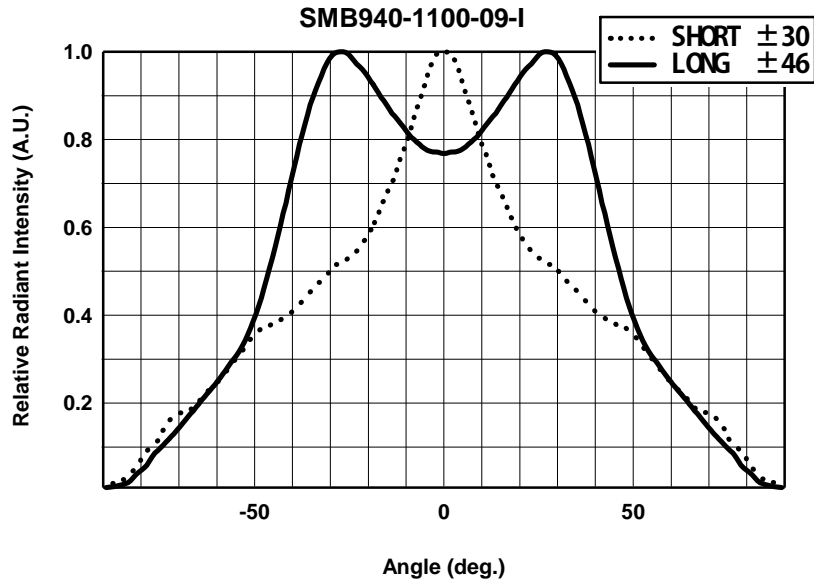


◆ Wrapping

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

Compliant
Radiation Pattern





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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.