

# SMB810N-1100-01-I

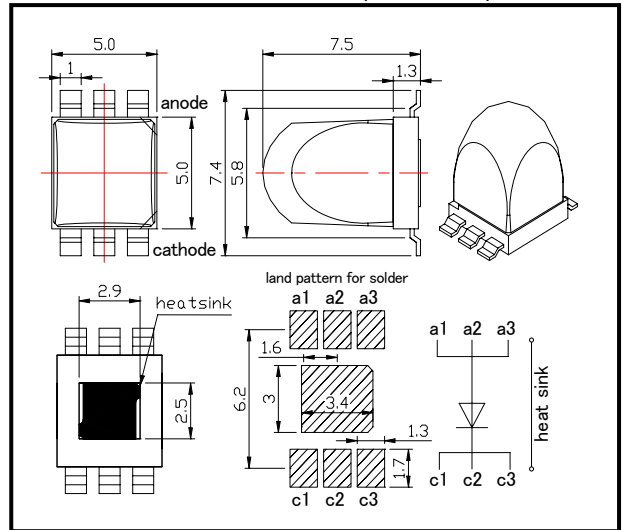
High Power type Top LED with Lens

SMB810N-1100-01-I is an AlGaAs LED mounted on copper heat sink with a 5\*5 mm package  
 These devices are available to be operated and 3,100mW/sr at IFP=4A.

### ◆ Specifications

- 1) Product Name High Power Top LED
- 2) Type No. SMB810N-1100-01-I
- 3) Chip
  - (1) Chip Material GaAlAs
  - (2) Chip Dimension 1000um\*1000um
  - (3) Chip Number 1pce
  - (4) Peak Wavelength 810nm 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     | $P_D$      | 2000                | mW                 | $T_a=25^{\circ}\text{C}$ |
| Forward Current       | $I_F$      | 1000                | 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

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

| Item               | Symbol          | Condition          | Minimum | Typical | Maximum | Unit  |
|--------------------|-----------------|--------------------|---------|---------|---------|-------|
| Forward Voltage    | $V_F/V_{FP}$    | $I_F=800\text{mA}$ |         | 1.7     | 2.2     | V     |
|                    |                 | $I_{FP}=4\text{A}$ |         | 3.2     | 4.2     |       |
| Radiated Power     | $P_O$           | $I_F=800\text{mA}$ | 220     | 320     |         | mW    |
|                    |                 | $I_{FP}=4\text{A}$ |         | 1600    |         |       |
| Radiant Intensity  | $I_E$           | $I_F=800\text{mA}$ |         | 625     |         | mW/sr |
|                    |                 | $I_{FP}=4\text{A}$ |         | 3,100   |         |       |
| Peak Wavelength    | $\lambda_P$     | $I_F=100\text{mA}$ |         | 810     |         | nm    |
| Half Width         | $\Delta\lambda$ | $I_F=100\text{mA}$ |         | 35      |         | nm    |
| Viewing Half Angle | $\theta_{1/2}$  | $I_F=100\text{mA}$ |         | $\pm 8$ |         | deg.  |
| 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.

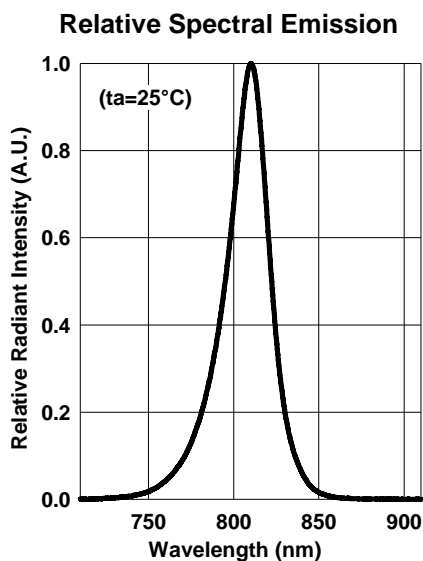
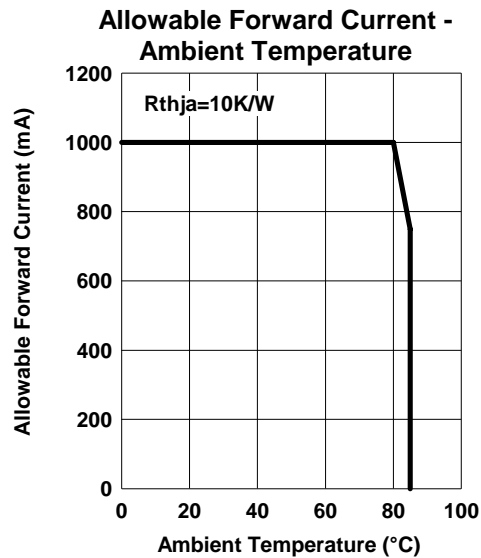
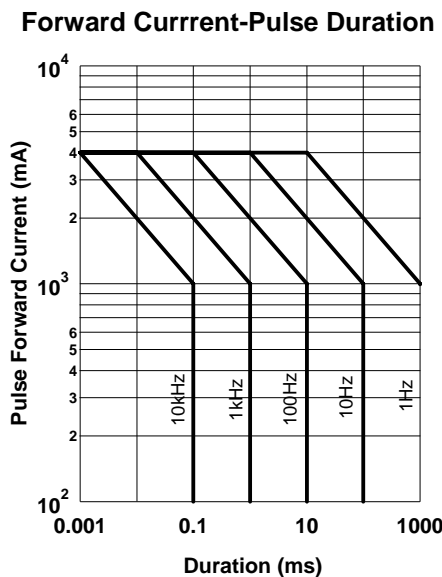
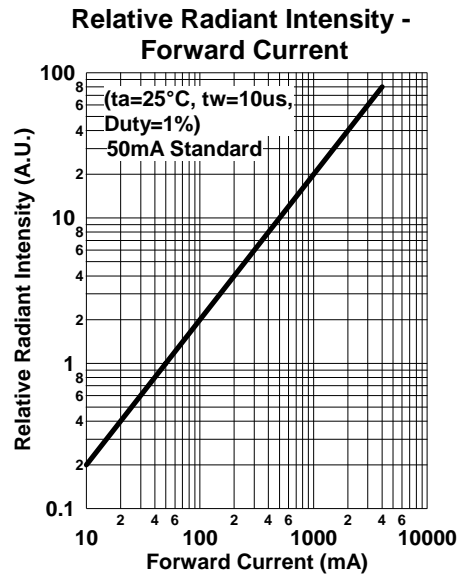
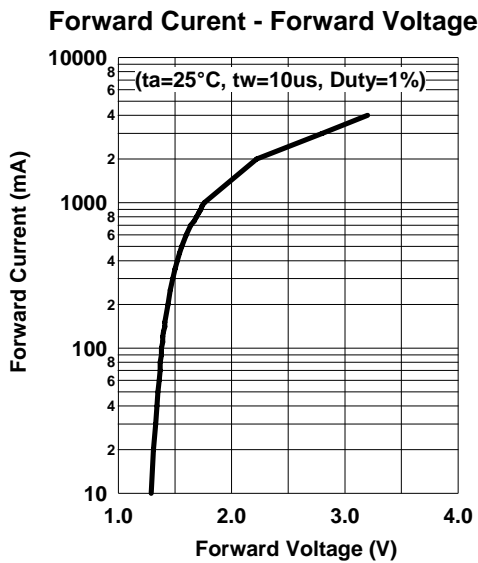
USHIO EUROPE B.V. ([www.ushio.eu](http://www.ushio.eu))

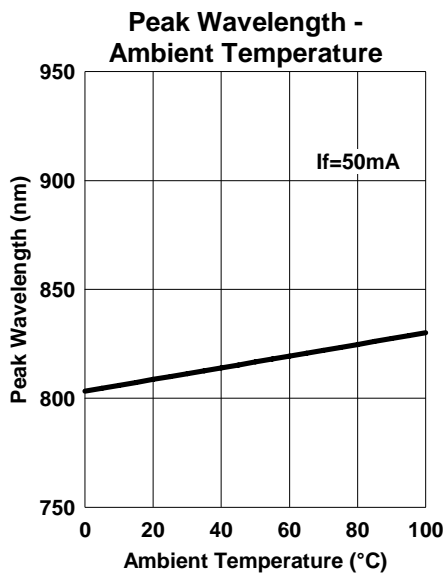
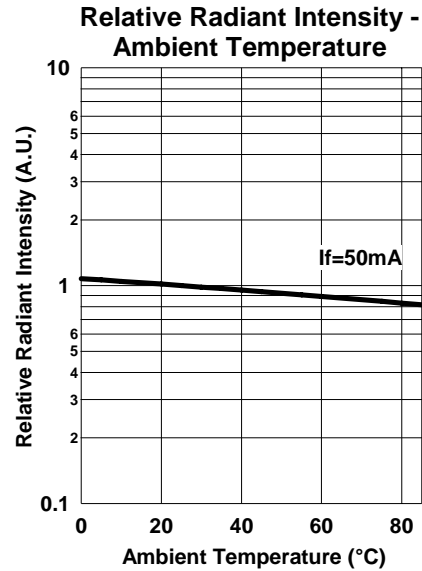
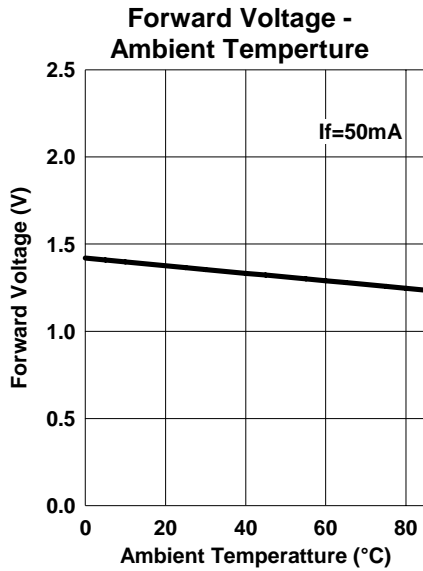
Sky Park, Breguetlaan 16-18, 1438 BC, Oude Meer, The Netherlands

Tel: +31-20-4469-333

Fax: +31-20-4469-360

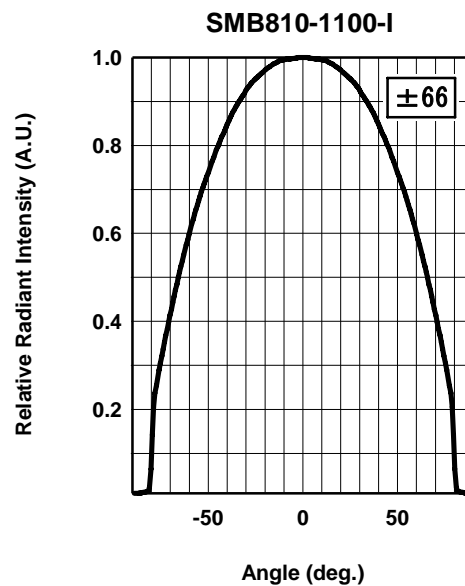
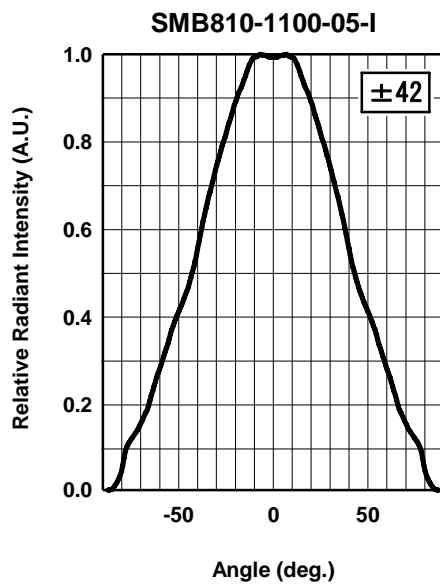
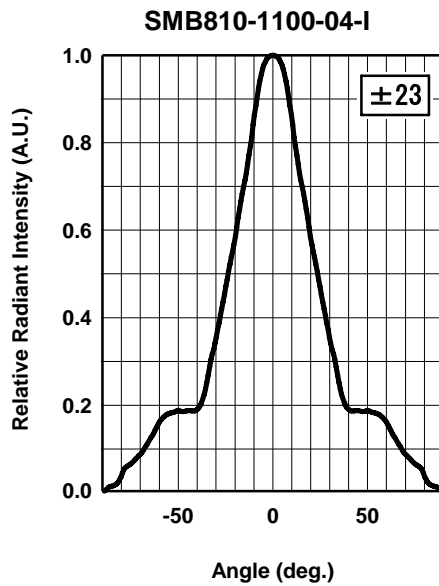
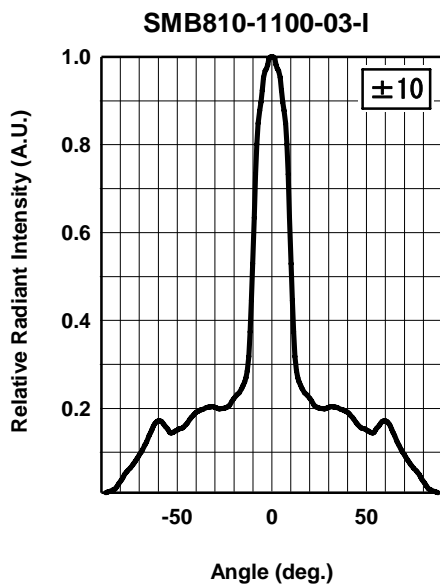
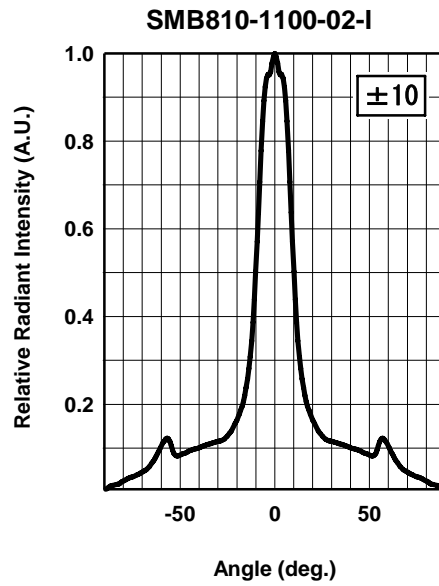
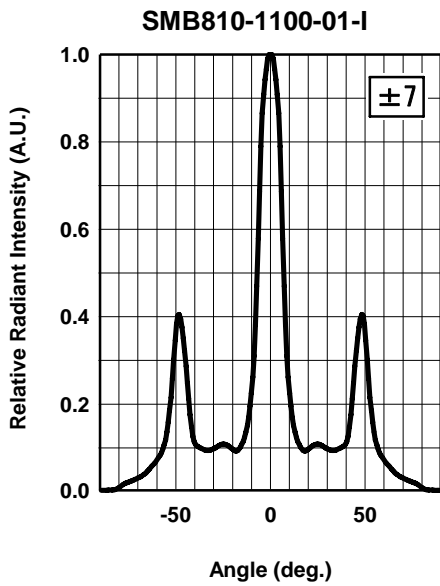
E-mail: [led@ushio-europe.nl](mailto:led@ushio-europe.nl)

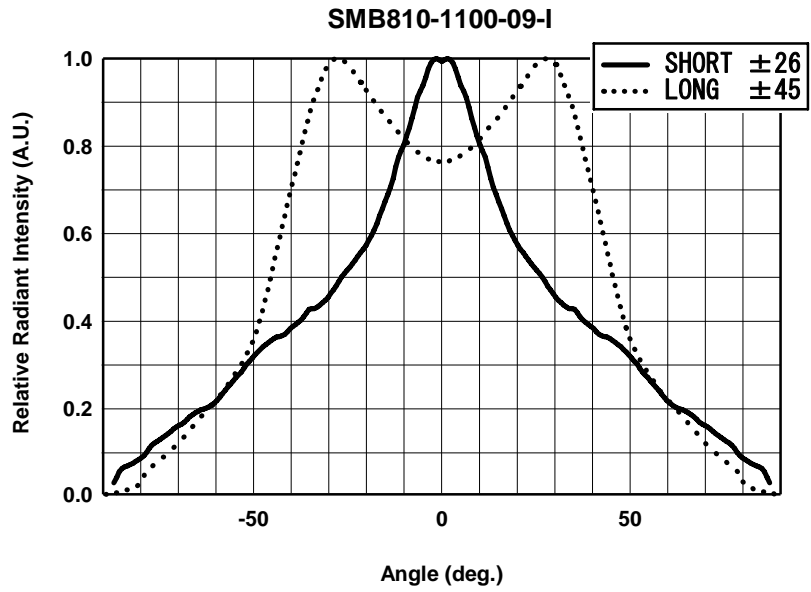




◆ Wrapping

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.