

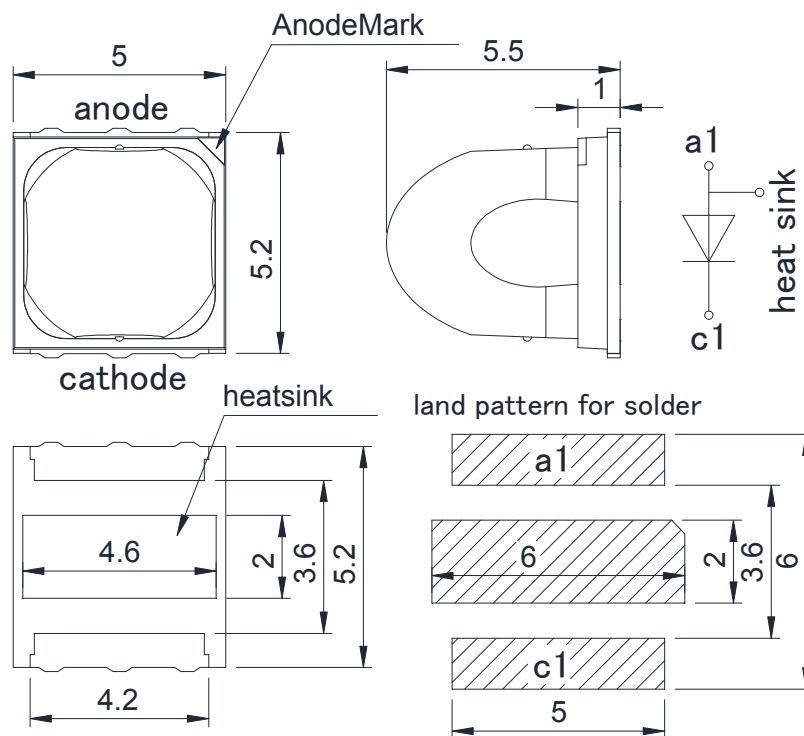
Data Sheet

SMBB810D-1100-02

810nm High Power TOP LED

USHIO

Outline and Internal Circuit



(Unit : mm)

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Features

- Chip Material : AlGaAs
- Chip Dimension : 1000um * 1000um
- Number of Chips : 1pce
- Peak Wavelength : 810nm typ.
- Lead Frame Die : Silver Plated on Copper
- Package Resin : PA9T
- Lens : Silicone Resin

Application

Absolute Maximum Ratings (Tc=25°C)

Item	Symbol	Ratings	Unit
Power Dissipation	PD	2000	mW
Forward Current	IF	800	mA
Pulse Forward Current	IFP	2000	mA
Reverse Voltage	VR	5	V
Thermal Resistance	Rthja	10	K/W
Junction Temperature	Tj	120	°C
Operating Temperature	Topr	-40 ~ +100	°C
Storage Temperature	Tstg	-40 ~ +100	°C
Soldering Temperature	TSOL	250	°C

‡Pulse Forward Current condition : Duty 1% and Pulse Width=10us.

‡Soldering condition : Soldering condition must be completed with 5 seconds at 250°C.

Optical and Electrical Characteristics (Tc=25°C)

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage	VF		1.9	(2.5)	V	IF=800mA
	VFP		2.4			IFP=2A
Total Radiated Power	PO		520		mW	IF=800mA
			1200			IFP=2A
Radiant Intensity	IE		2300		mW/sr	IF=800mA
			5300			IFP=2A
Peak Wavelength	λ_p	800		820	nm	IF=800mA
Half Width	$\Delta\lambda$		31		nm	IF=800mA
Viewing Half Angle	$\theta_{1/2}$		± 9		deg.	IF=100mA
Rise Time	tr		20		ns	IF=800mA
Fall Time	tf		30		ns	IF=800mA

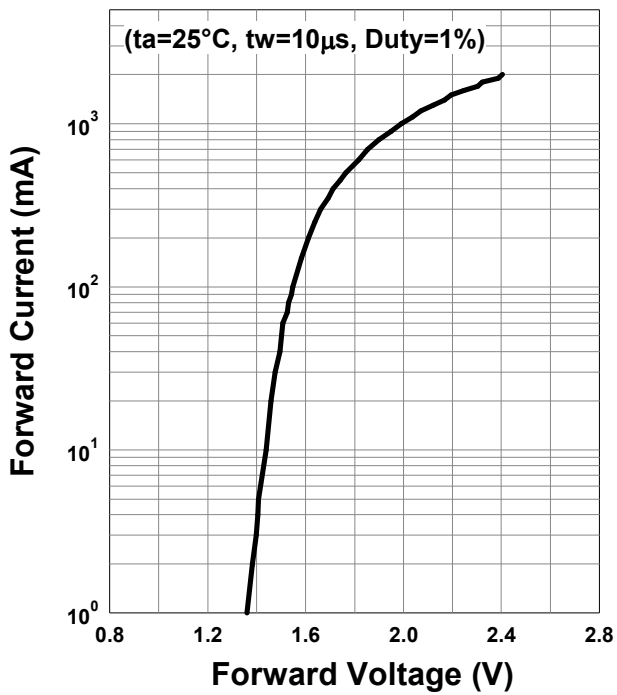
‡ Radiated Power is measured by S3584-08.

‡ Radiant Intensity is measured by CIE127-2007 Condition B.

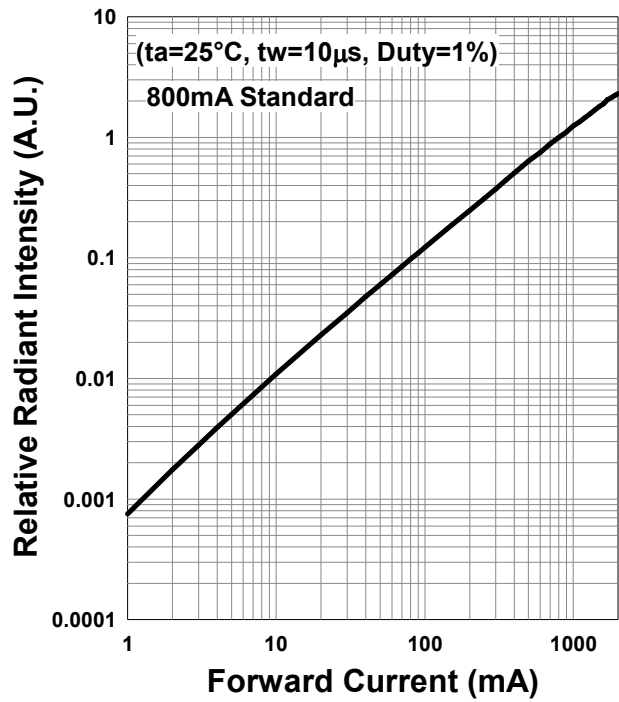
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Typical Characteristic Curves

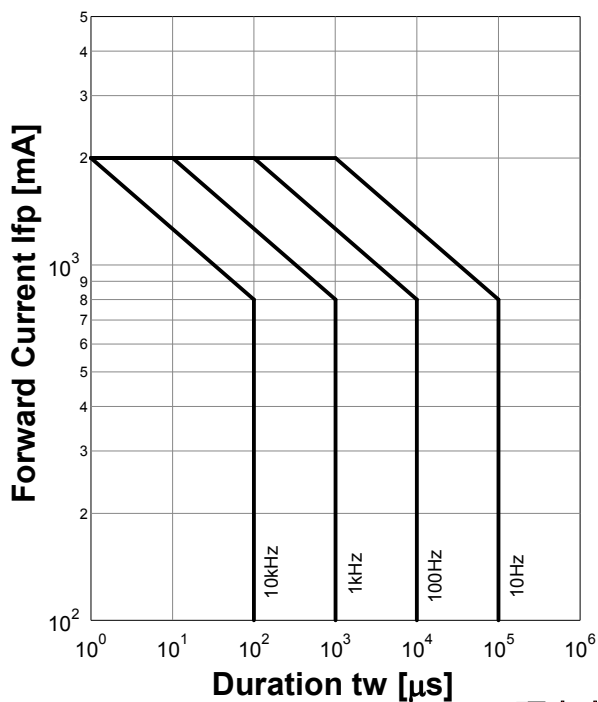
Forward Current - Forward Voltage



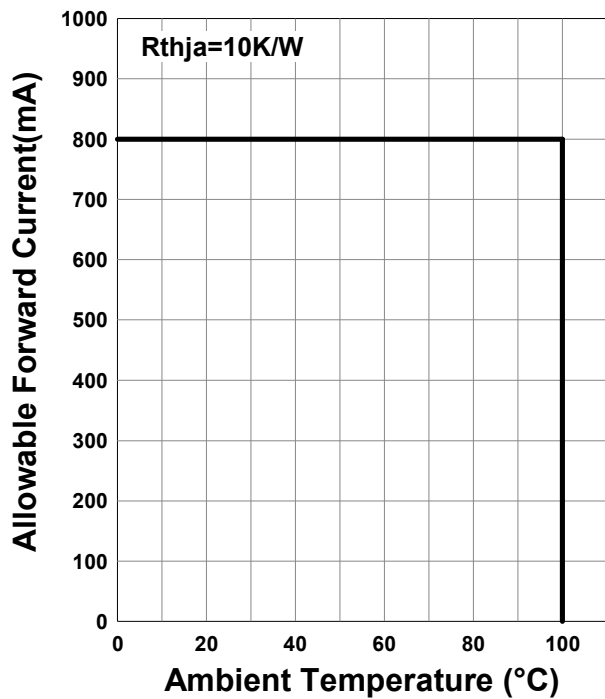
Relative Radiant Intensity - Forward Current



Forward Current - Pulse Duration

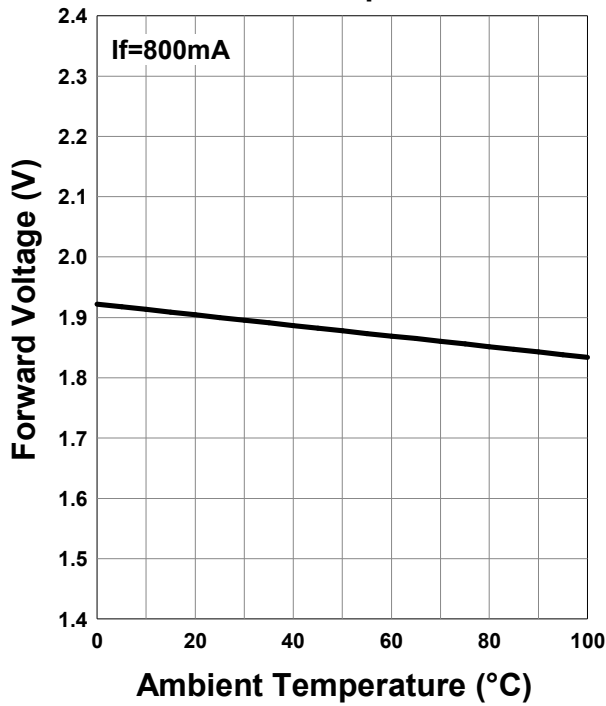


Allowable Forward Current - Ambient Temperature

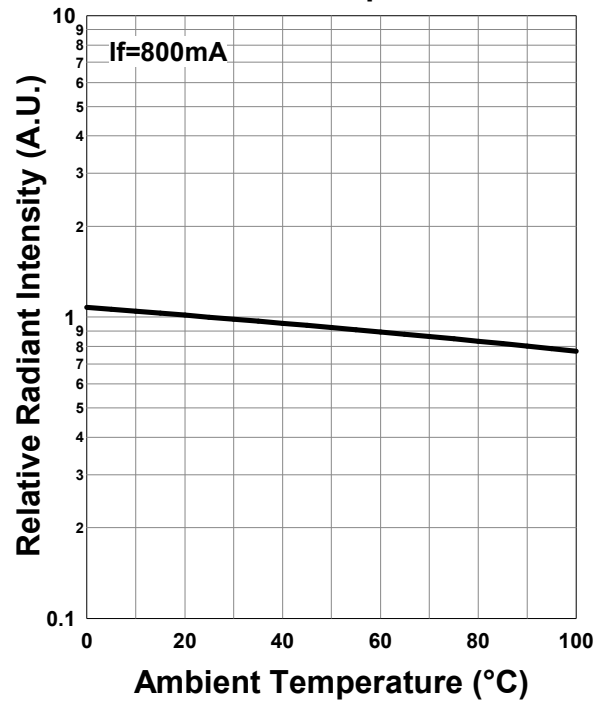


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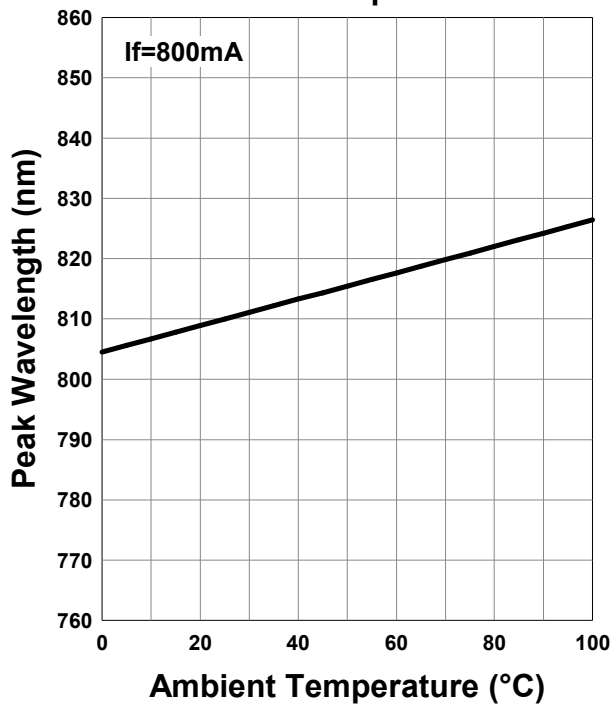
Forward Voltage - Ambient Temperature



Relative Radiant Intensity - Ambient Temperature

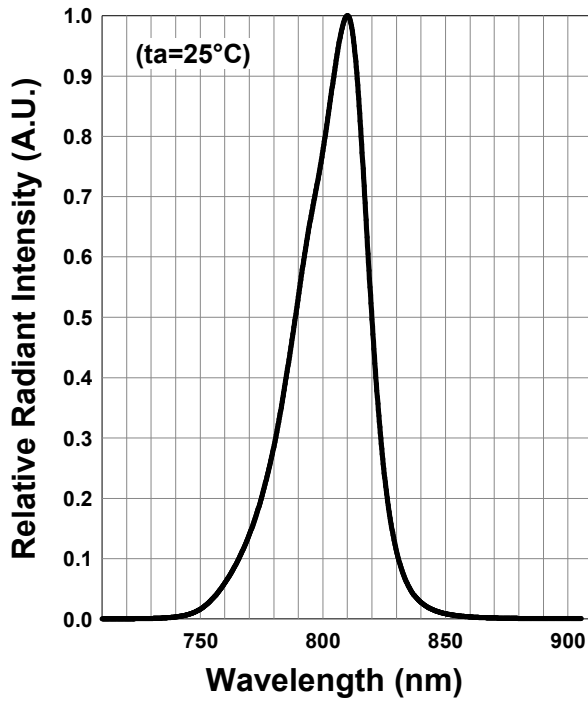


Peak Wavelength - Ambient Temperature

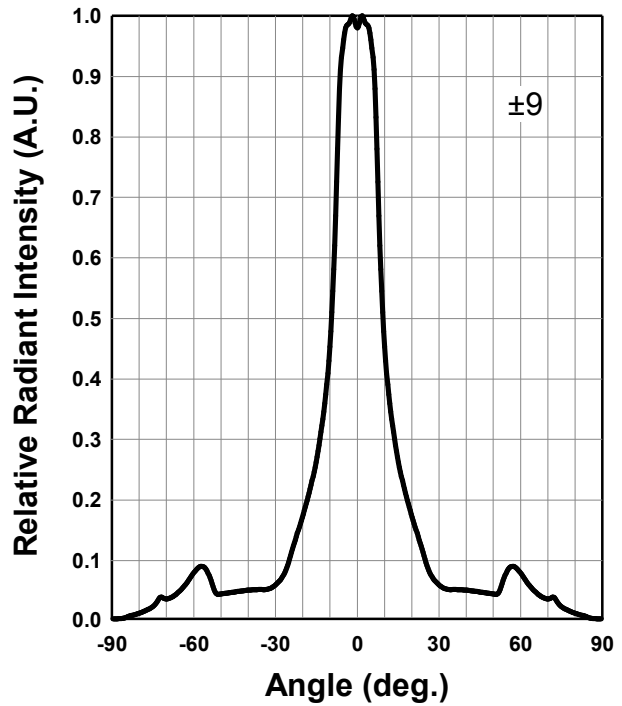


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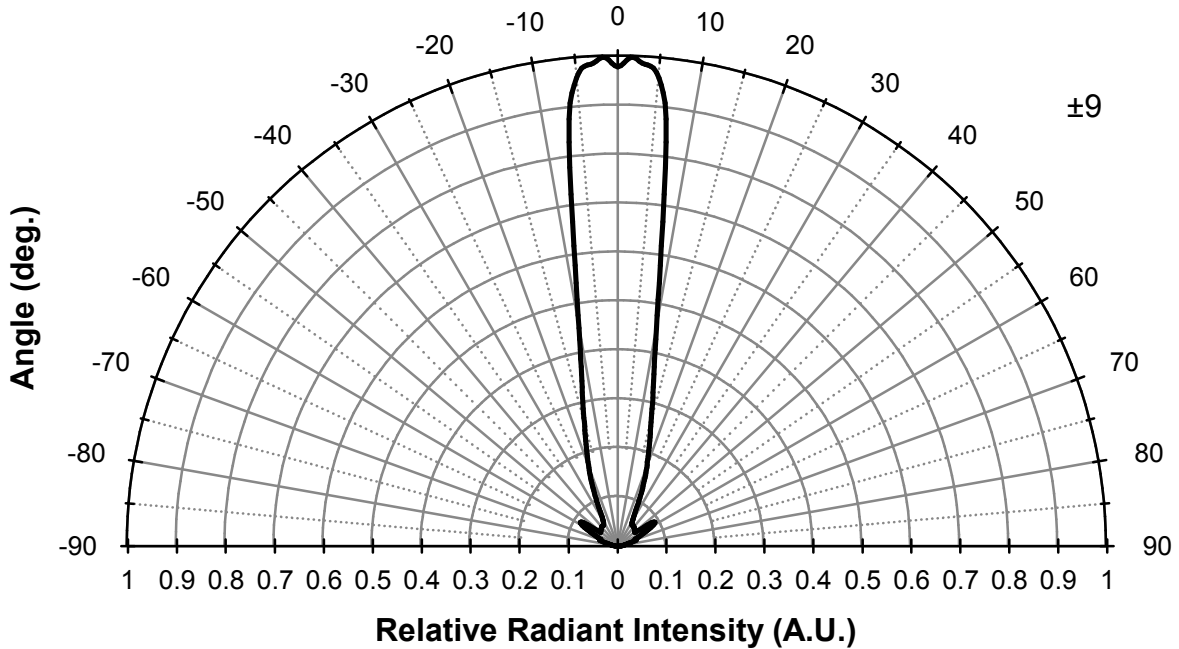
Relative Spectral Emission



Radiation Characteristics



Radiation Characteristics



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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.

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.
- 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

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.

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Disclaimer

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Product data and parameters in this catalog are typical values based on reasonably up-to-date measurements.

Product data and parameters may vary by user application and over time.

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*Effective July 2016, Ushio Epitex Inc. is now USHIO OPTO SEMICONDUCTORS, INC.