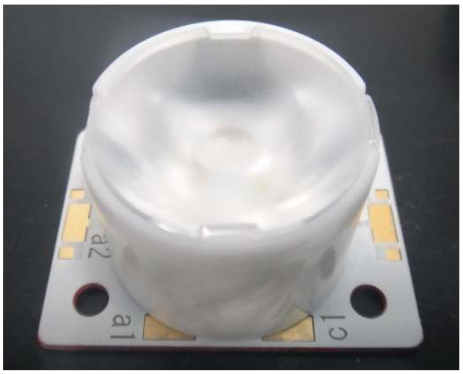
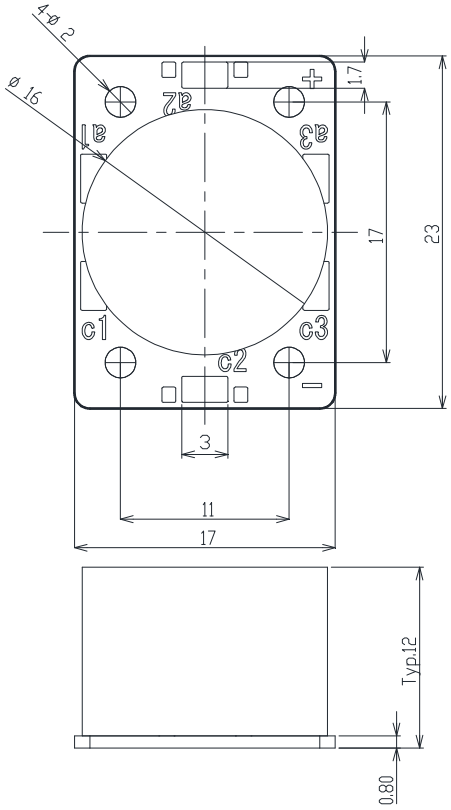
2020.12

SMBB850DS-1100-TINA-RS

850nm High Power TOP LED

Outline





(Unit : mm)

Features

- Chip Material : AlGaAs
- Chip Dimension : 1000um * 1000um
- Number of Chips : 1pce
- Peak Wavelength : 850nm typ.
- Lead Frame Die : Silver Plated on Copper
- Package Resin : PA9T
- Lens : Silicone Resin

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Absolute Maximum Ratings (Tc=25°C)

Item	Symbol	Ratings	Unit
Power Dissipation	PD	4200	mW
Forward Current	IF	1000	mA
Pulse Forward Current	IFP	(5000)	mA
Reverse Voltage	VR	5	V
Thermal Resistance	Rthjs	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)

(*: 100% testing, **: reference value)

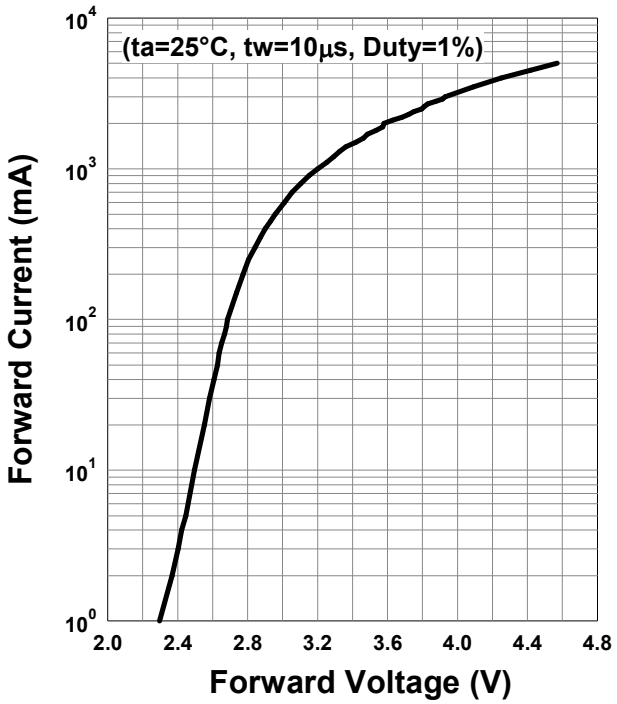
Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage	VF		3.2	(4.2)	V	IF=1A*
	VFP		4.0			IFP=3A**
Reverse Current	IR			10	uA	VR=5V*
Total Radiated Power	PO	980	1400		mW	IF=1A* Without TINA-Lens
			1200			IF=1A**
			3100			IFP=3A**
Radiant Intensity	IE		15		W/sr	IF=1A**
			40			IFP=3A**
Peak Wavelength	λp	840		860	nm	IF=1A*
Half Width	Δλ		33		nm	IF=1A**
Viewing Half Angle	θ1/2		±4		deg.	IF=100mA**
Rise Time	tr		30		ns	IF=1A**
Fall Time	tf		30		ns	IF=1A**

‡ Radiated Power is measured by S3584-08.

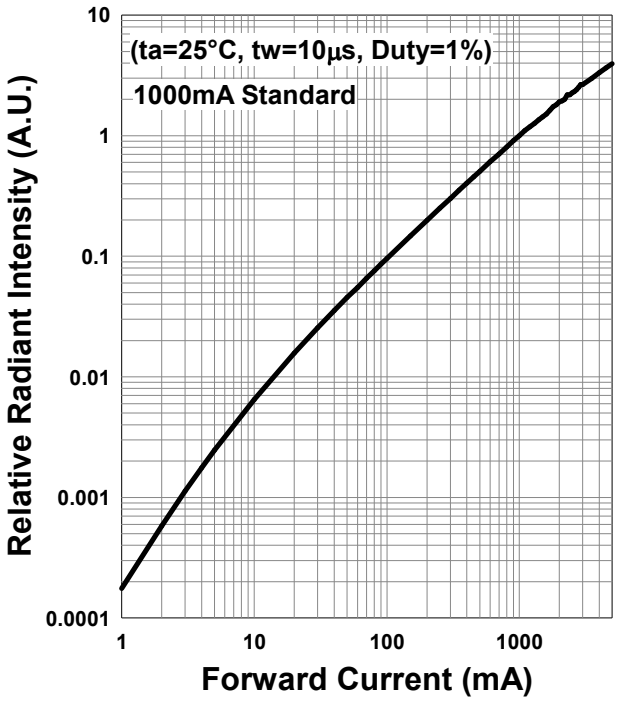
‡ Radiant Intensity is measured by CIE127-2007 Condition B.

Typical Characteristic Curves

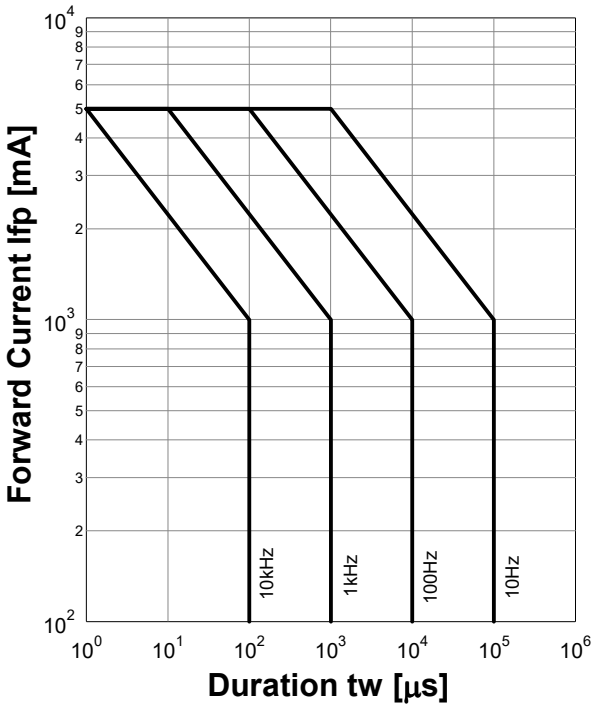
Forward Current - Forward Voltage



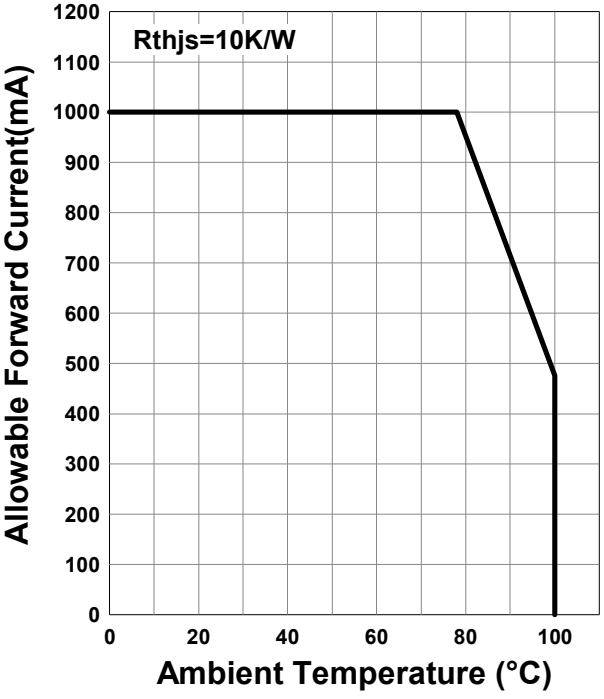
Relative Radiant Intensity - Forward Current



Forward Current - Pulse Duration



Allowable Forward Current - Ambient Temperature



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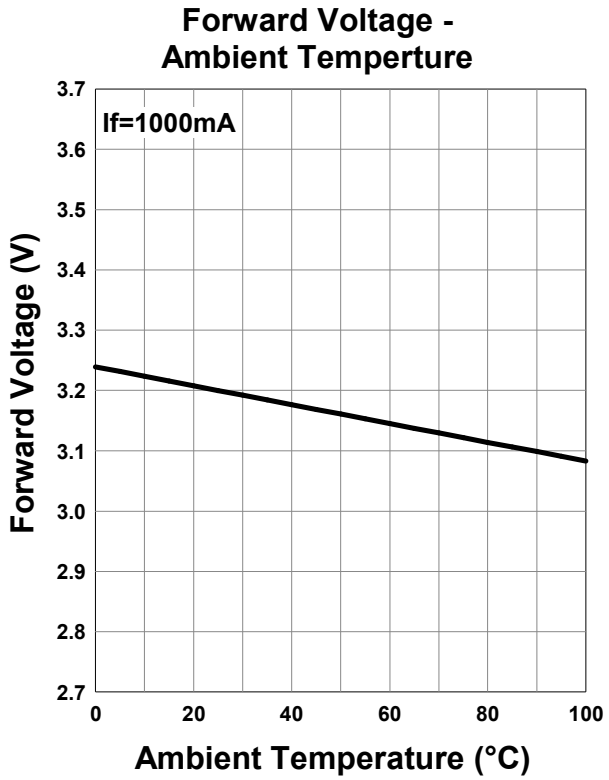
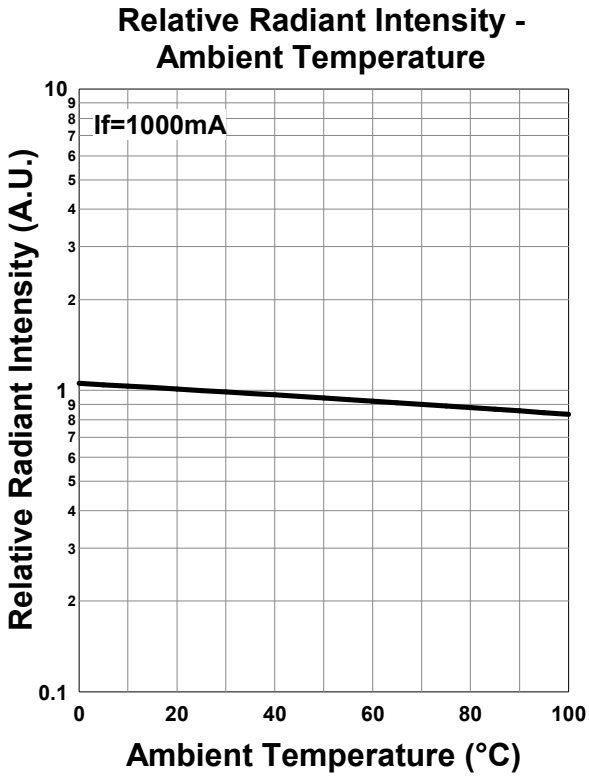
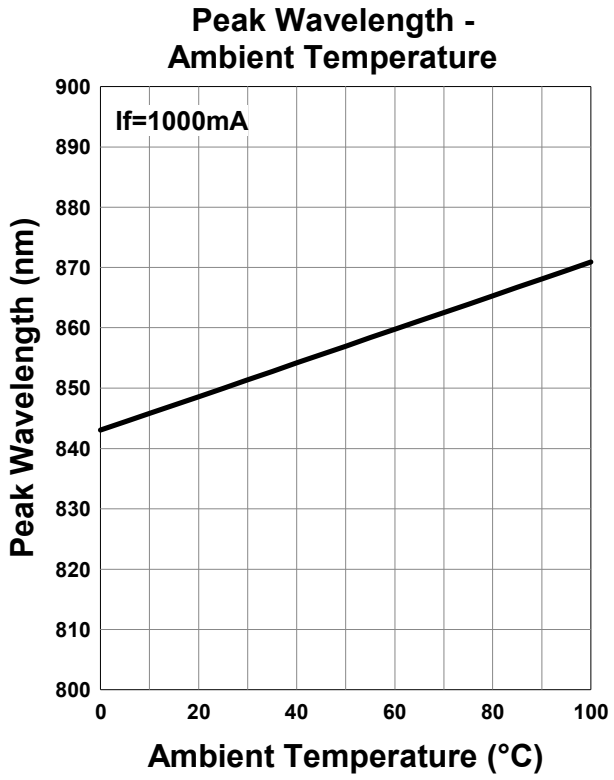
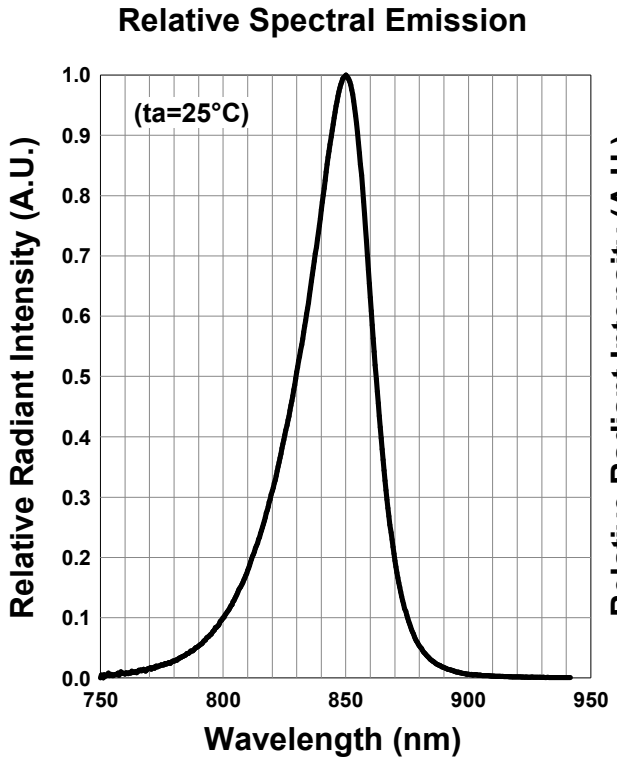
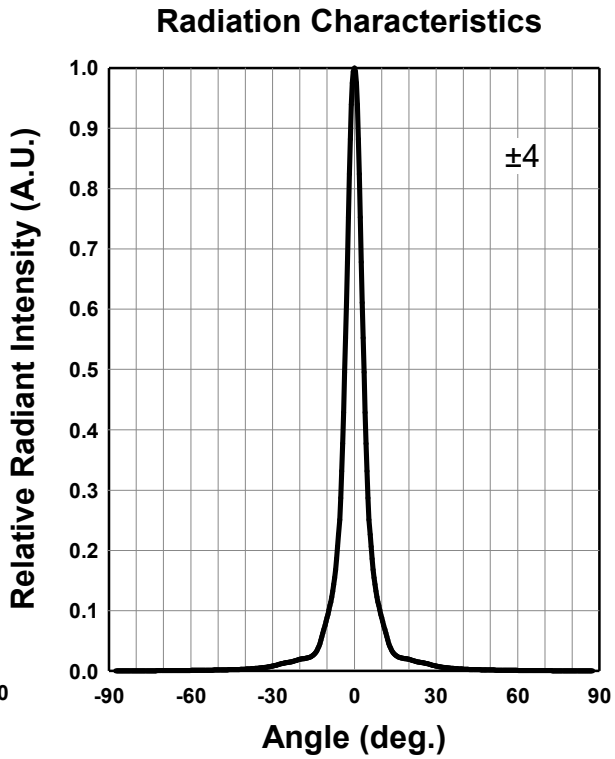
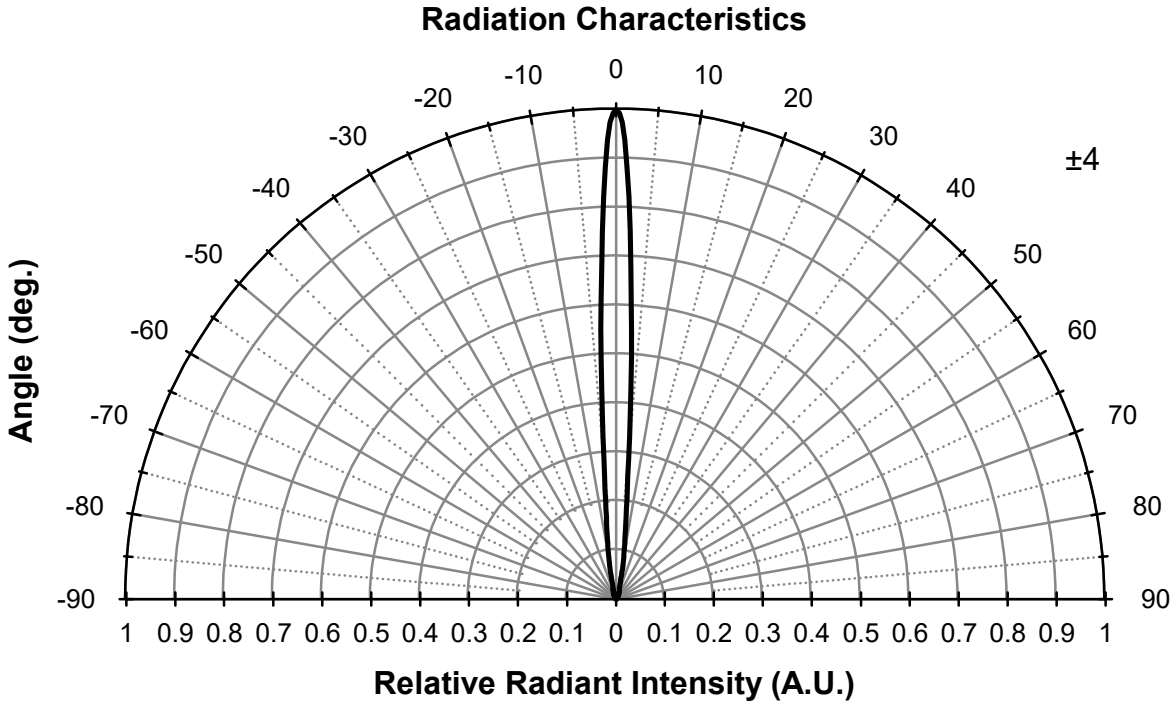

Forward Voltage -
Ambient Temperture
If=1000mA
Forward Voltage (V)
3.7
3.6
3.5
3.4
3.3
3.2
3.1
3.0
2.9
2.8
2.7
0
20
40
60
80
100
Ambient Temperature (°C)


Relative Radiant Intensity -
Ambient Temperature
If=1000mA
Relative Radiant Intensity (A.U.)
10
1
0.1
0
20
40
60
80
100
Ambient Temperature (°C)


Peak Wavelength -
Ambient Temperature
If=1000mA
Peak Wavelength (nm)
900
890
880
870
860
850
840
830
820
810
800
0
20
40
60
80
100
Ambient Temperature (°C)







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