SMT850D-23

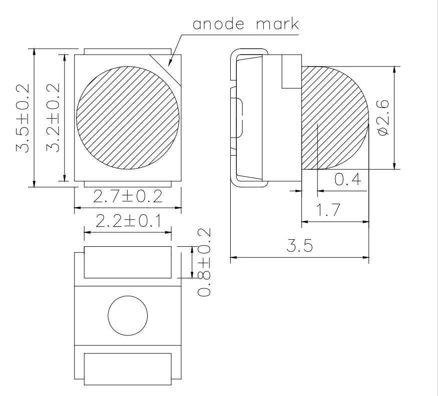
High Performance Infrared TOP IR LED with Lens

SMT850D-23 consists of a AlGaAs LED mounted on the lead frame as TOP LED package with plastic ball lens.
It emits a spectral band of radiation at 850nm.

<Specifications>

1. Product Name: TOP IR LED
2. Type Number: SMT850D-23
3. Chip:
   - Chip Material: AlGaAs
   - Dimension: 350um x 350um
   - Peak Wavelength: 850nm
4. Package
   - Lead Frame Die: Silver Plated
   - Package Resin: PPA Resin
   - Lens: Epoxy Resin
   - Diameter: Φ2.6mm

Outer Dimension (Unit:mm)



Absolute Maximum Ratings[Ta=25℃]			
Item	Symbol	Maximum Rated Value	Unit
Power Dissipation	PD	170	mW
Forward Current	IF	100	mA
Pulse Forward Current*	IFP	1000	mA
Reverse Voltage	VR	5	V
Thermal Resistance	Rthja	180	K/W
Junction Temperature	Tj	120	℃
Operating Temperature	TOPR	-40 ~ +100	℃
Storage Temperature	TSTG	-40 ~ +100	℃
Soldering Temperature**	TSOL	250	℃

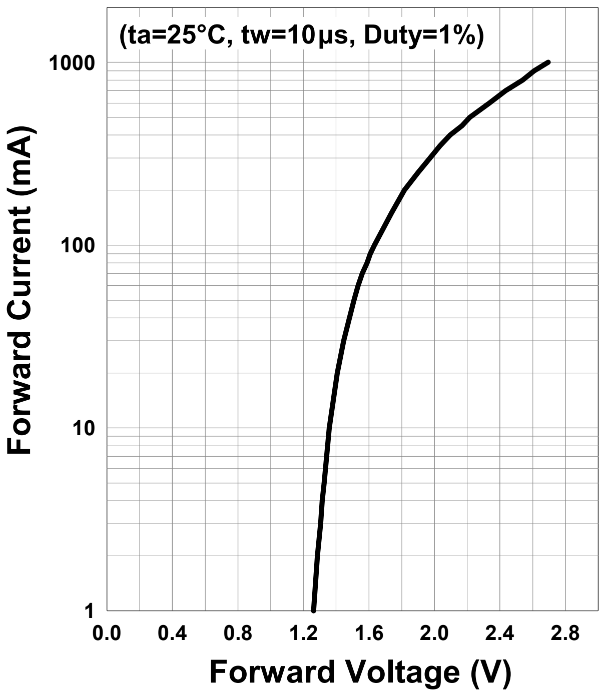
* Duty=1% and Pulse Width=10us.
**Soldering condition must be completed within 5 second at 250 ℃.

Electro-Optical Characteristics [Ta=25℃]						
Item	Symbol	Condition	Minimum	Typical	Maximum	Unit
Forward Voltage	VF	IF=50mA		1.5	1.7	V
Total Radiated Power*	PO	IF=50mA	16	22		mW
Radiant Intensity**	IE	IF=50mA		60		mW/sr
Peak wavelength	λP	IF=50mA	840	850	860	nm
Half Width	Δλ	IF=50mA		25		nm
Viewing Half Angle	θ1/2	IF=50mA		±16		deg
Rise Time	tr	IF=50mA		30		ns
Fall Time	tf	IF=50mA		30		ns

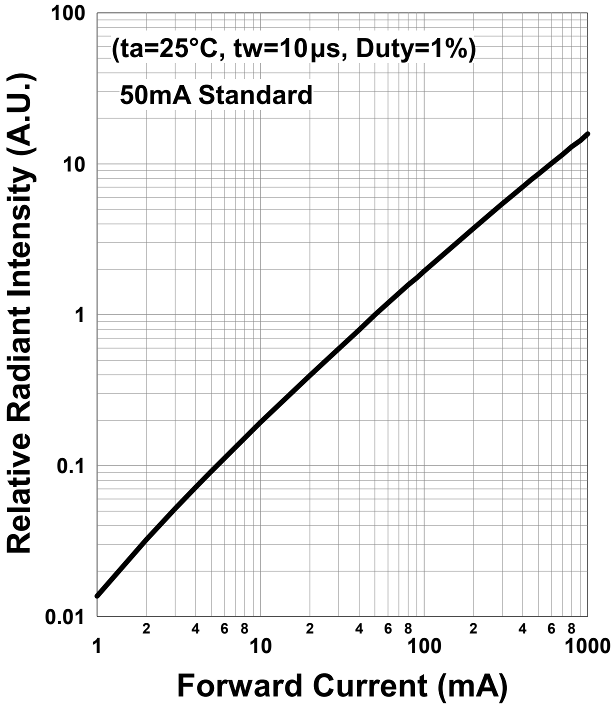
* Measured by S3584-08
** Measured by CIE127-2007 Condition B

RoHS
Compliant

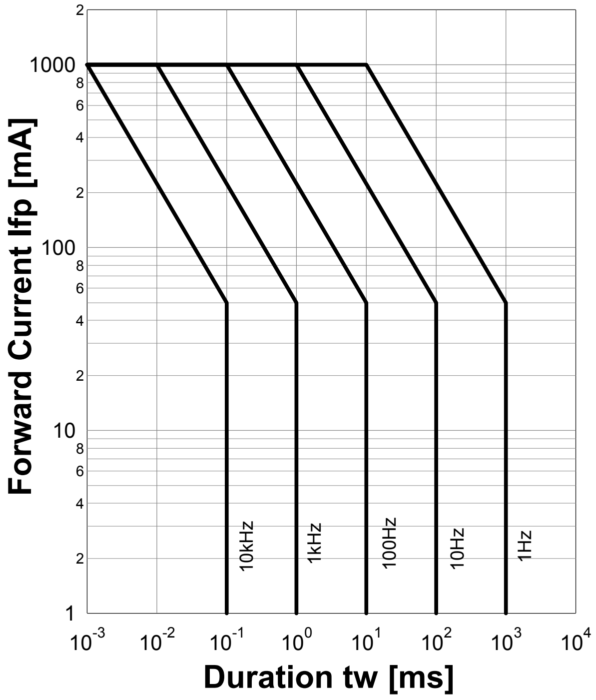
Forward Curent - Forward Voltage



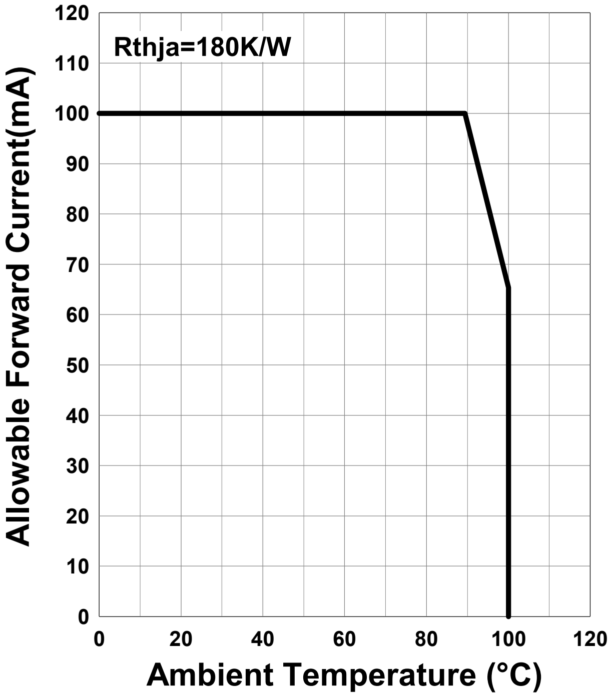
Relative Radiant Intensity - Forward Current

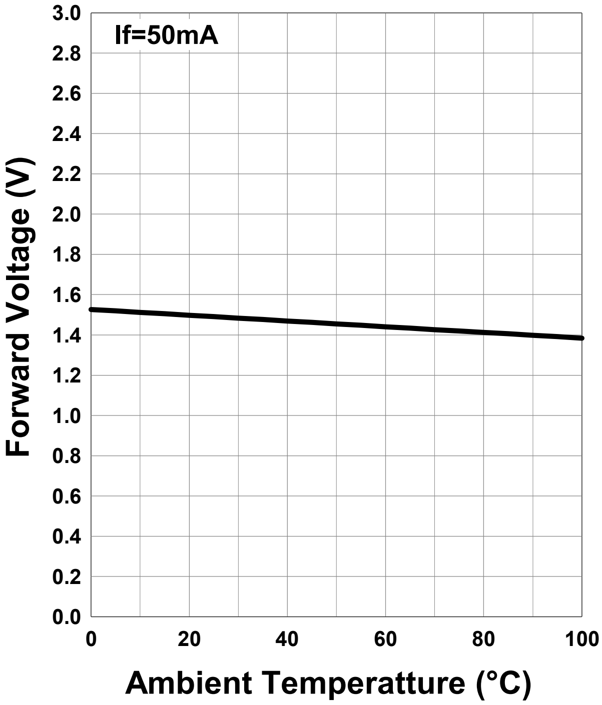


Forward Current - Pulse Duration

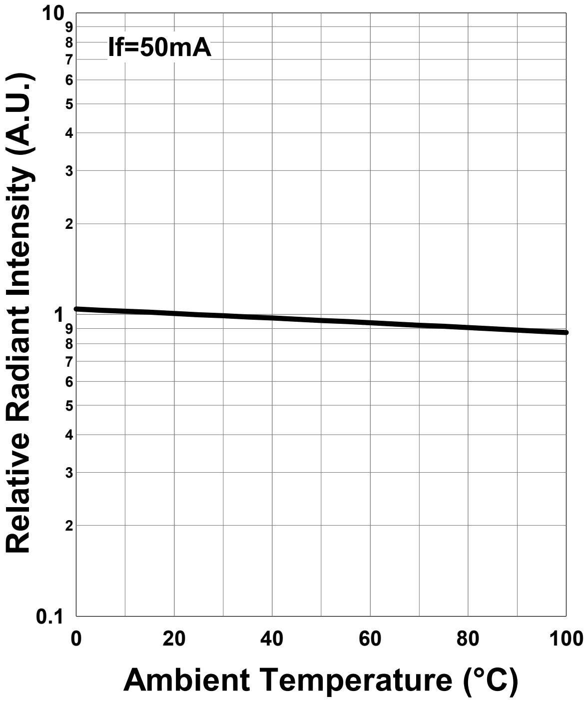


Allowable Forward Current - Ambient Temperature

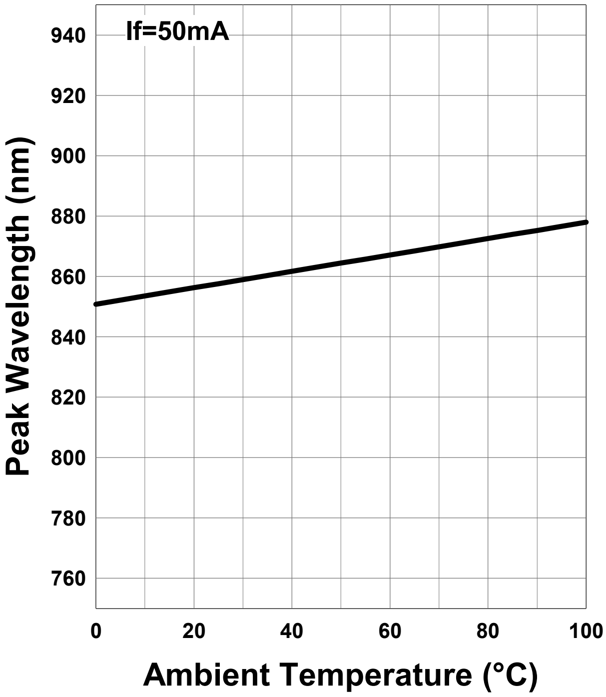




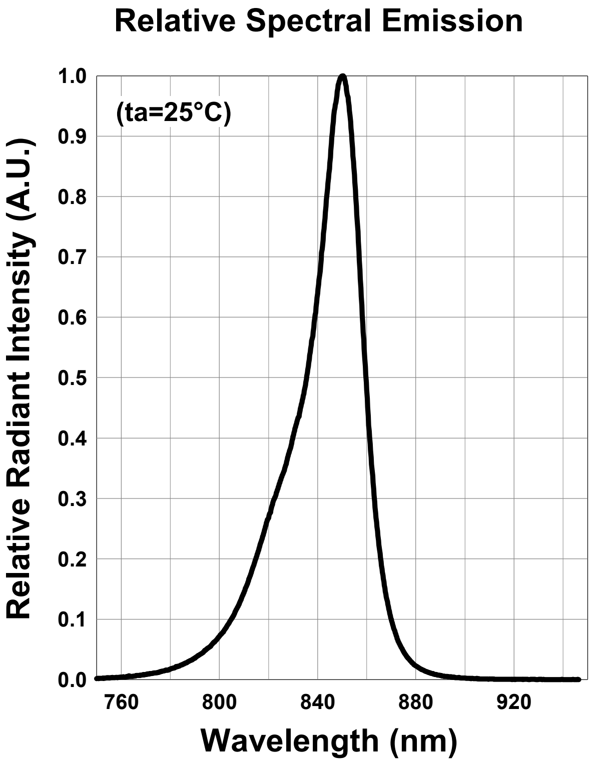
Forward Voltage - Ambient Temperture

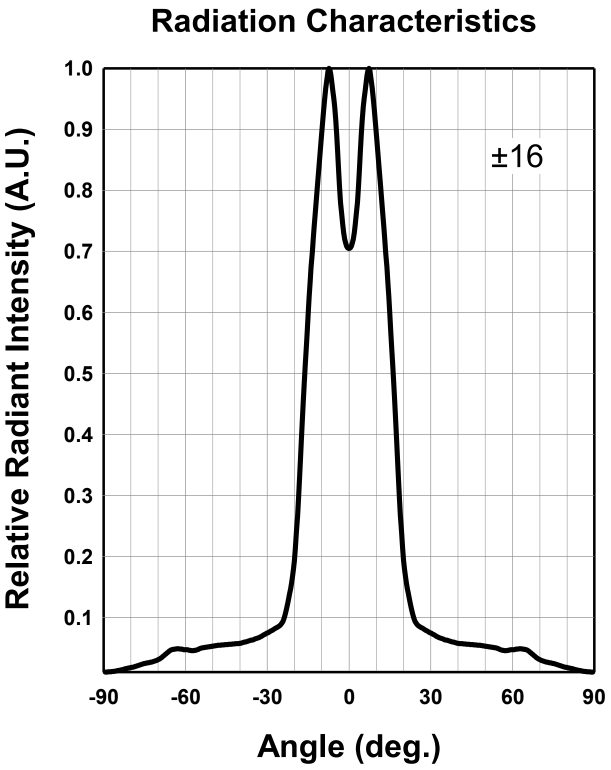


Relative Radiant Intensity - Ambient Temperature



Peak Wavelength - Ambient Temperature

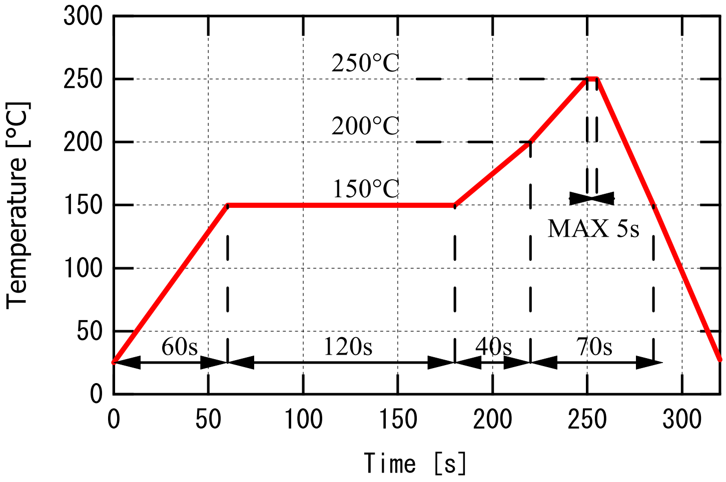

Relative Spectral Emission
(ta=25°C)
Relative Radiant Intensity (A.U.)
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
760
800
840
880
920
Wavelength (nm)

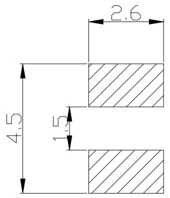

Radiation Characteristics
±16
Relative Radiant Intensity (A.U.)
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-90
-60
-30
0
30
60
90
Angle (deg.)

SMD Application

Recomended Lnd Layout (Unit : mm)

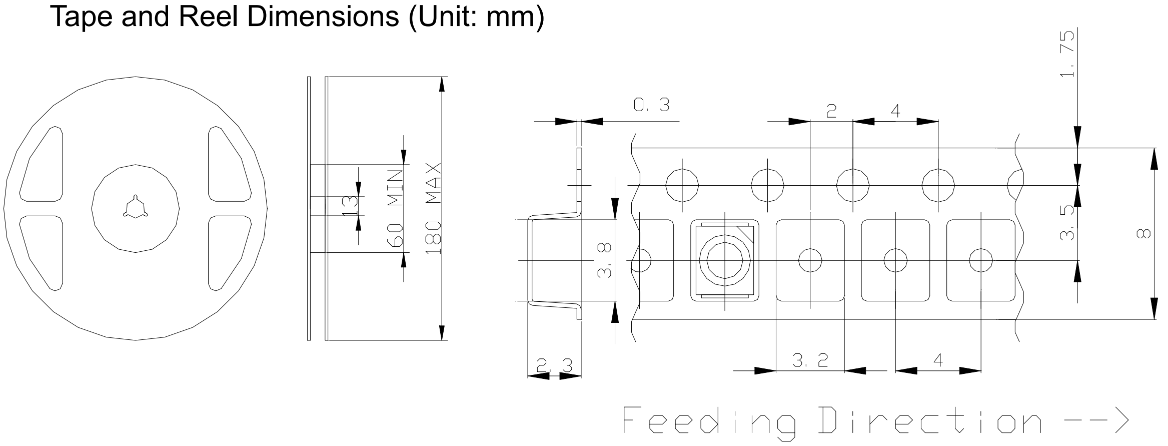
IR-Reflow Soldering Profile for lead free soldering





SMD Packing

Tape and Reel Dimensions (Unit: mm)



Wrapping

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

2013.12