SMT940-23

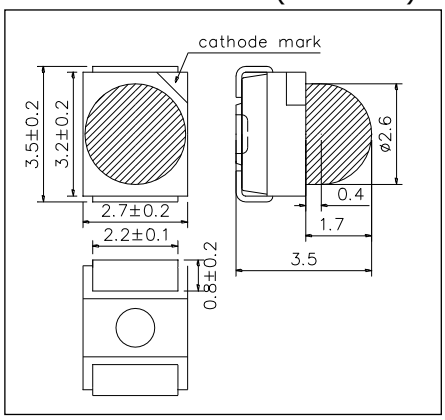
High Performance Infrared TOP IR LED with Lens

SMT940-23 consists of an AlGaAs LED mounted on the lead frame as TOP LED package with plastic ball lens. It is 32mW typical of output power and 30mW/sr of radiant intensity. It emits a spectral band of radiation at 940nm.

<Specifications>

1. Product Name: TOP IR LED
2. Type Number: SMT940-23
3. Chip:
   - Chip Material: AlGaAs
   - Dimension: 400un x 400nm
   - Peak Wavelength: 940nm
4. Package
   - Lead Frame Die: Silver Plated
   - Package Resin: PA9T 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	160	mW
Forward Current	IF	100	mA
Pulse Forward Current*	IFP	1000	mA
Reverse Voltage	VR	5	V
Thermal Resistance	Rthja	80	K/W
Junction Temperature	Tj	100	℃
Operating Temperature	TOPR	-40 ~ +80	℃
Storage Temperature	TSTG	-40 ~ +80	℃
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 DC		1.30	1.45	V
		IF=100mA, tp=20ms		1.38	1.60	
Reverse Current	IR	VR=5V			10	uA
Total Radiated Power*	PO	IF=50mA DC	8	16		mW
		IF=100mA, tp=20ms		32		
Radiant Intensity**	IE	IF=50mA DC		15		mW/sr
		IF=100mA, tp=20ms		30		
Peak Wavelength	λP	IF=50mA DC	930	940	955	nm
Half Width	Δλ	IF=50mA DC		50		nm
Viewing Half Angle	θ1/2	IF=50mA DC		±18		deg
Rise Time	tr	IF=50mA DC		1000		ns
Fall TIme	tf	IF=50mA DC		500		ns

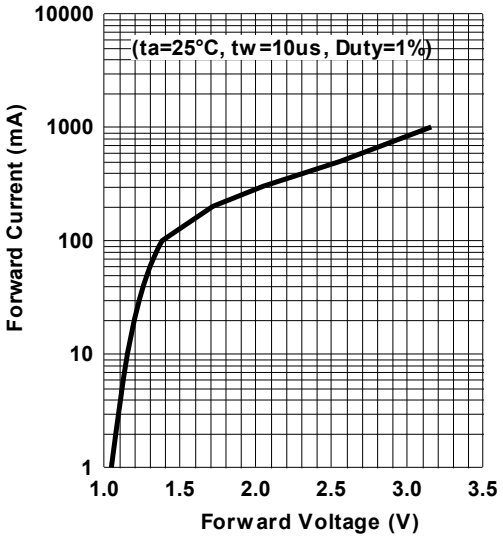
* Measured by Photodyne #500

** Measured by Tektronix J-6512

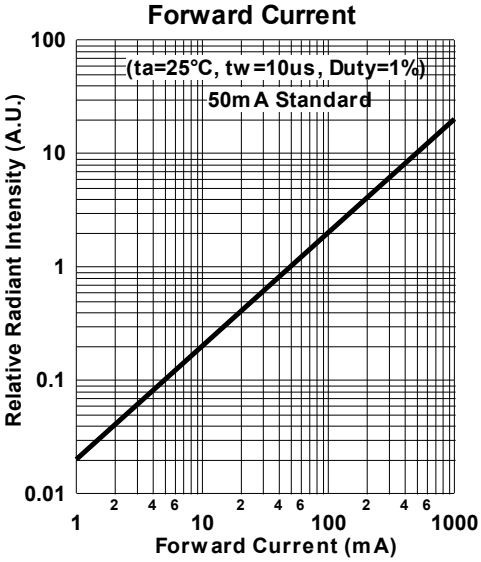
RoHS Compliant

Marubeni America Corporation | 3945 Freedom Circle, Suite 1000, Santa Clara, CA95054
Email: sales@tech-led.com | URL: www.tech-led.com

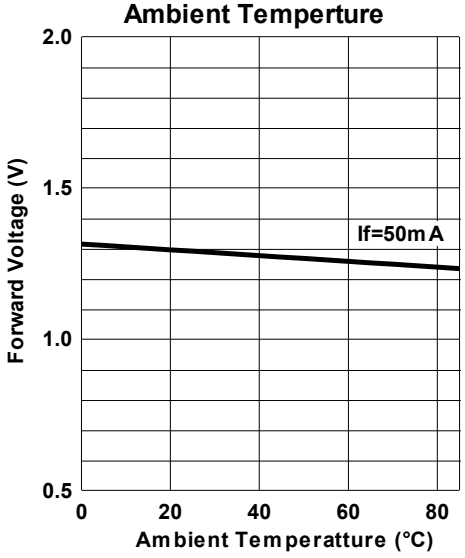
Forward Curent - Forward Voltage



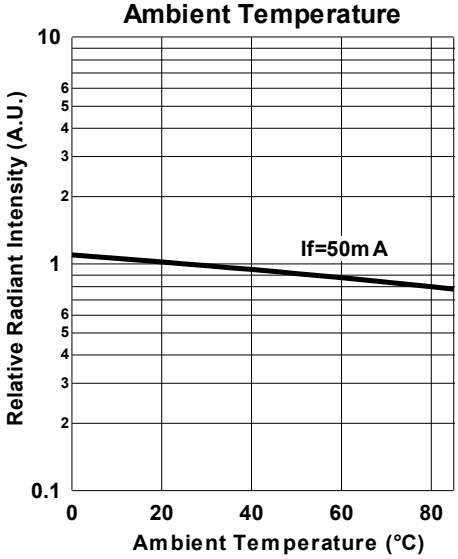
Relative Radiant Intensity - Forward Current



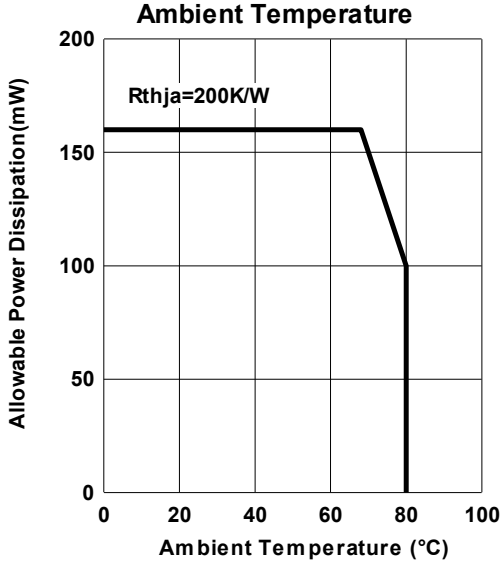
Forward Voltage - Ambient Temperture



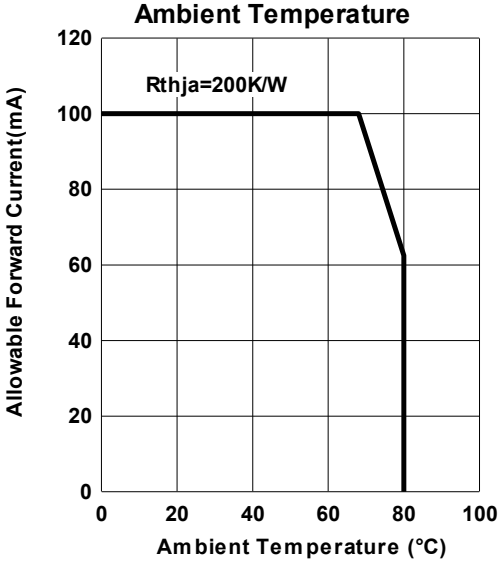
Relative Radiant Intensity - Ambient Temperature

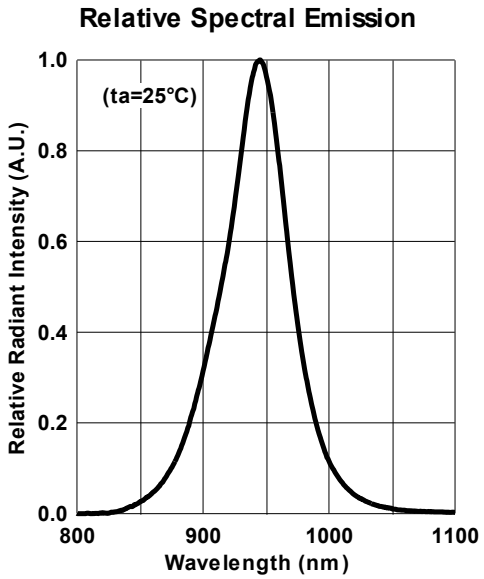


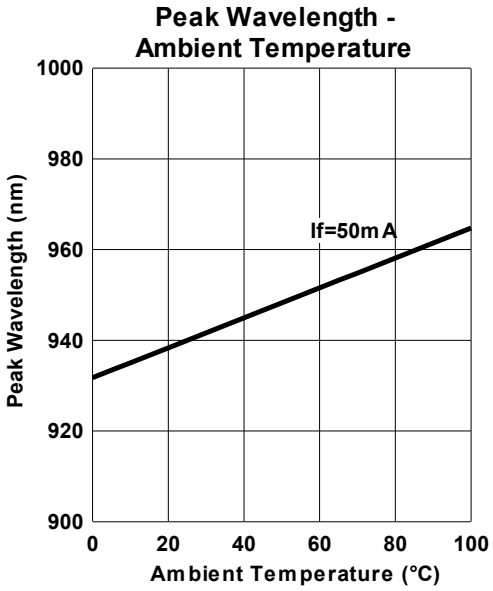
Allowable Power Dissipation - Ambient Temperature

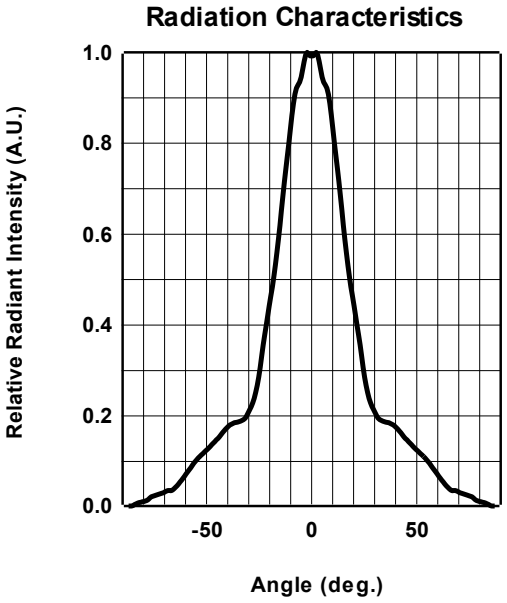


Allowable Forward Current - Ambient Temperature



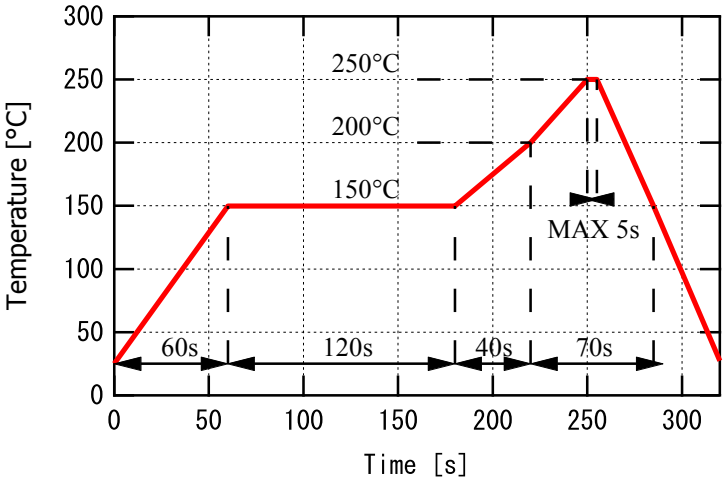

Relative Spectral Emission
(ta=25°C)
Relative Radiant Intensity (A.U.)
1.0
0.8
0.6
0.4
0.2
0.0
800
900
1000
1100
Wavelength (nm)


Peak Wavelength -
Ambient Temperature
If=50mA
Peak Wavelength (nm)
1000
980
960
940
920
900
0
20
40
60
80
100
Ambient Temperature (°C)

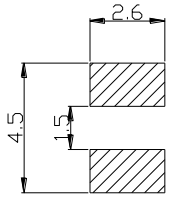

Radiation Characteristics
Relative Radiant Intensity (A.U.)
1.0
0.8
0.6
0.4
0.2
0.0
-50
0
50
Angle (deg.)

SMD Application

IR-Reflow Soldering Profile for lead free soldering



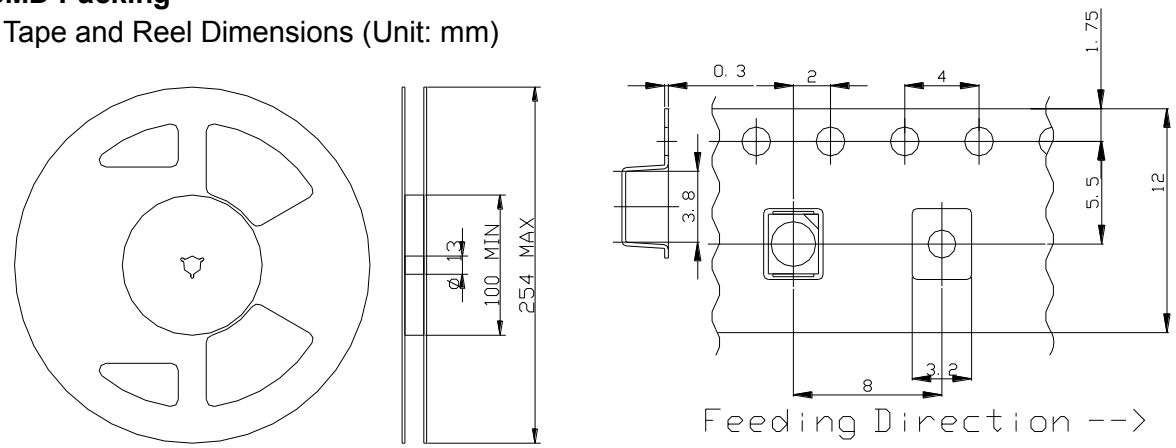
Recommended Land Layout (Unit: mm)



Don't put stress on SMD and a circuit board after 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.