

## SMT940D-23

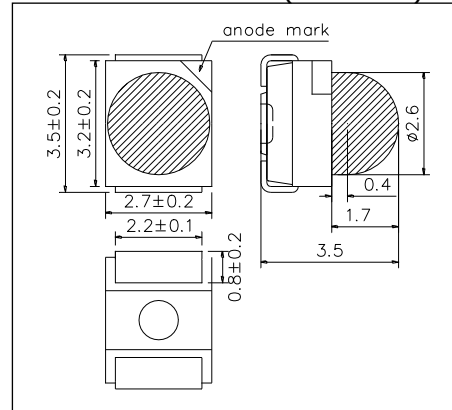
### High Performance Infrared TOP IR LED with Lens

SMT940D-23 consists of a AlGaAs LED mounted on the lead frame as TOP LED package with plastic ball lens. It is 22mW typical of power and 60mW/sr of radiant intensity. It emits a spectral band of radiation at 850nm.

<Specifications>

1. Product Name: TOP IR LED
2. Type Number: SMT940D-23
3. Chip:
  - Chip Material: AlGaAs
  - Dimension: 350um x 350um
  - Peak Wavelength: 940nm
4. Package
  - Lead Frame Die: Silver Plated
  - Package Resin: PPA Resin
  - Lens: Epoxy Resin
  - Diameter:  $\Phi 2.6$ mm

Outer Dimension (Unit:mm)



Absolute Maximum Ratings[Ta=25°C]			
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	200	K/W
Junction Temperature	Tj	100	°C
Operating Temperature	TOPR	-40 ~ +80	°C
Storage Temperature	TSTG	-40 ~ +80	°C
Soldering Temperature**	TSOL	250	°C

\* Duty=1% and Pulse Width=10us.

\*\*Soldering condition must be completed within 5 second at 250 °C.

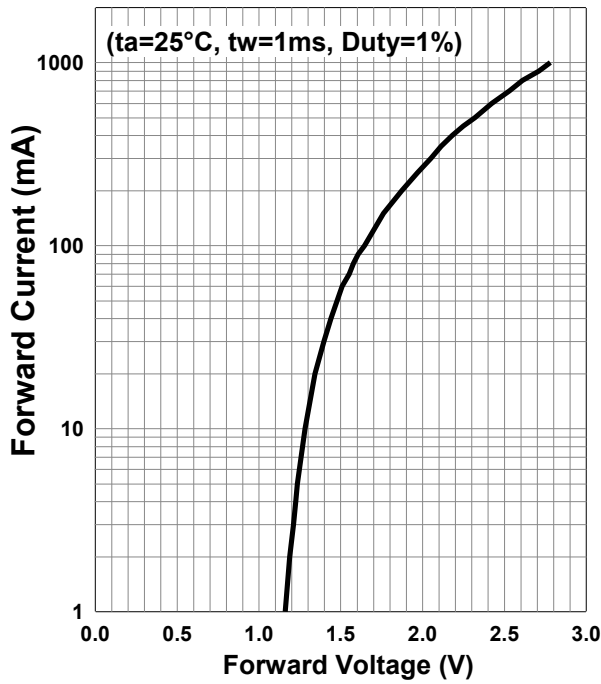
Electro-Optical Characteristics [Ta=25°C ]						
Item	Symbol	Condition	Minimum	Typical	Maximum	Unit
Forward Voltage	VF	IF=50mA		1.50	1.80	V
Reverse Current	IR	VR=5V			-	uA
Total Radiated Power*	PO	IF=50mA	16	22		mW
Radiant Intensity**	IE	IF=50mA		60		mW/sr
Peak wavelength	$\lambda P$	IF=50mA	930	940	950	nm
Half Width	$\Delta\lambda$	IF=50mA		37		nm
Viewing Half Angle	$\theta_{1/2}$	IF=50mA		$\pm 15$		deg
Rise Time	tr	IF=50mA		25		ns
Fall Time	tf	IF=50mA		25		ns

\* Measured by S3584-08

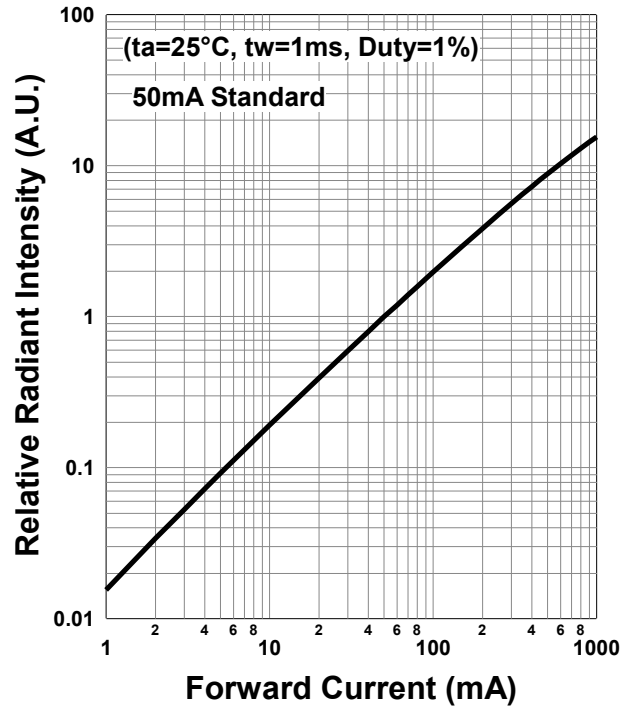
\*\* Measured by Tektronix J-6512



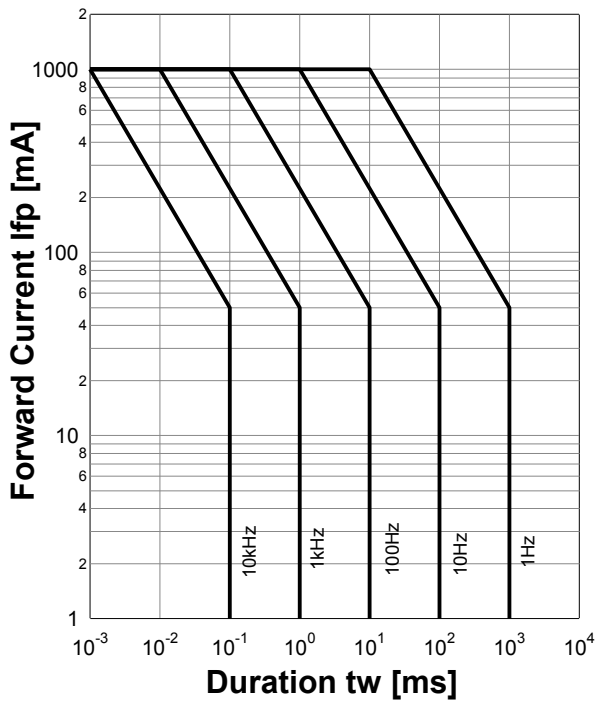
**Forward Current - Forward Voltage**



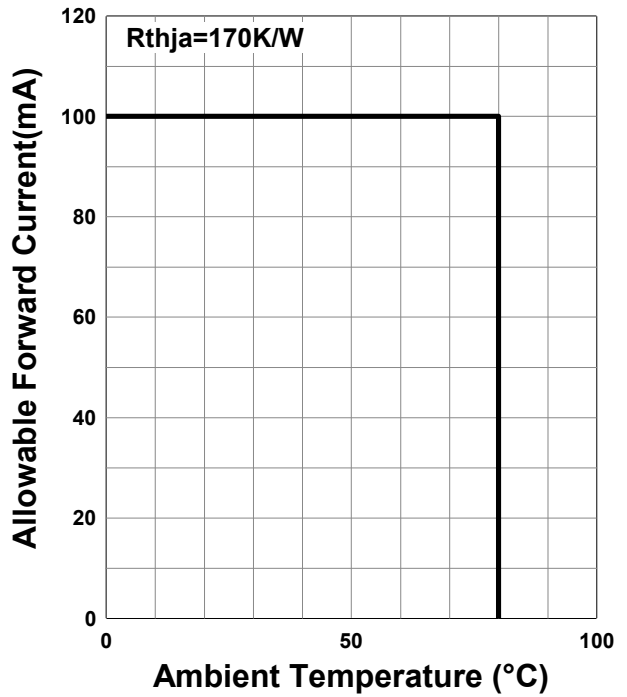
**Relative Radiant Intensity - Forward Current**

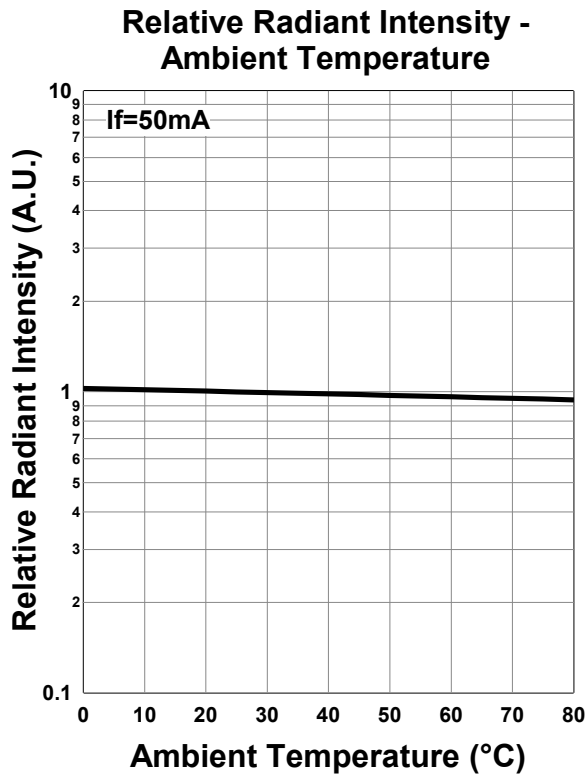
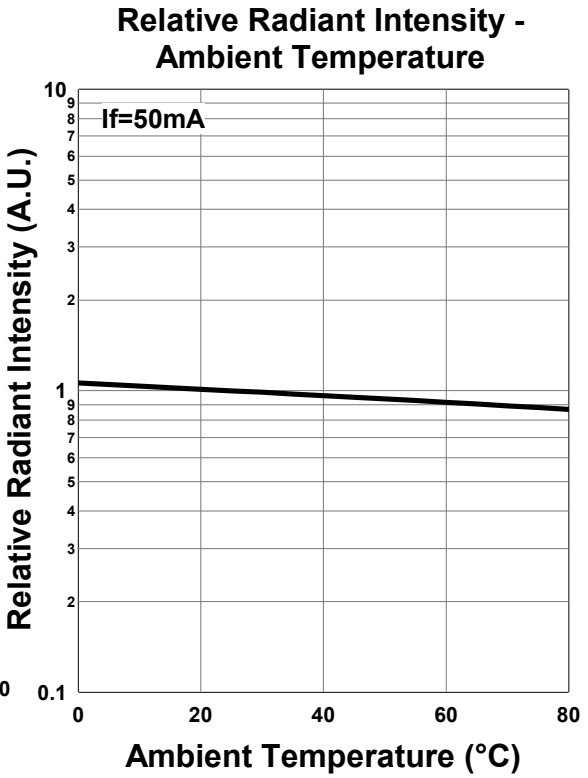
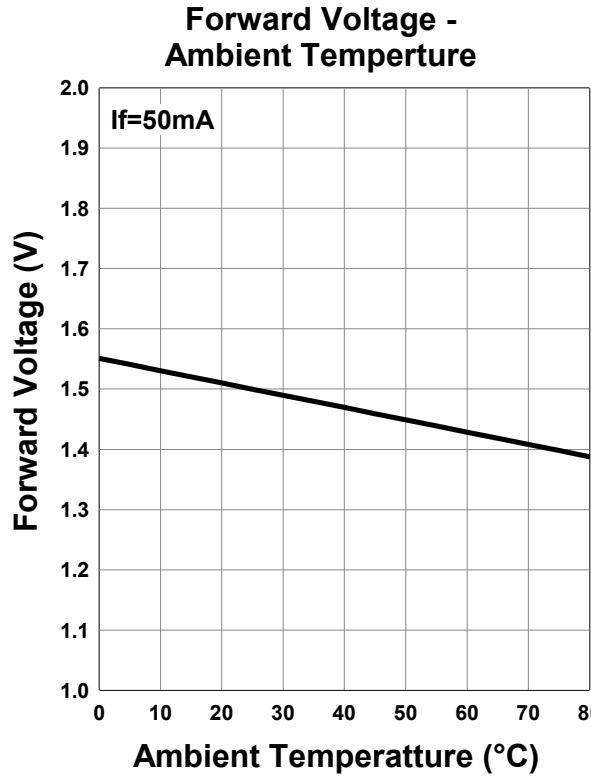


**Forward Current - Pulse Duration**

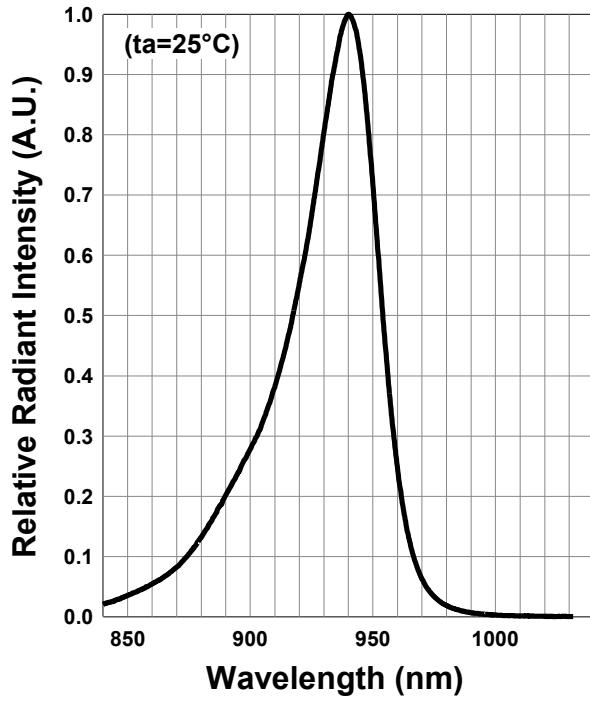


**Allowable Forward Current - Ambient Temperature**

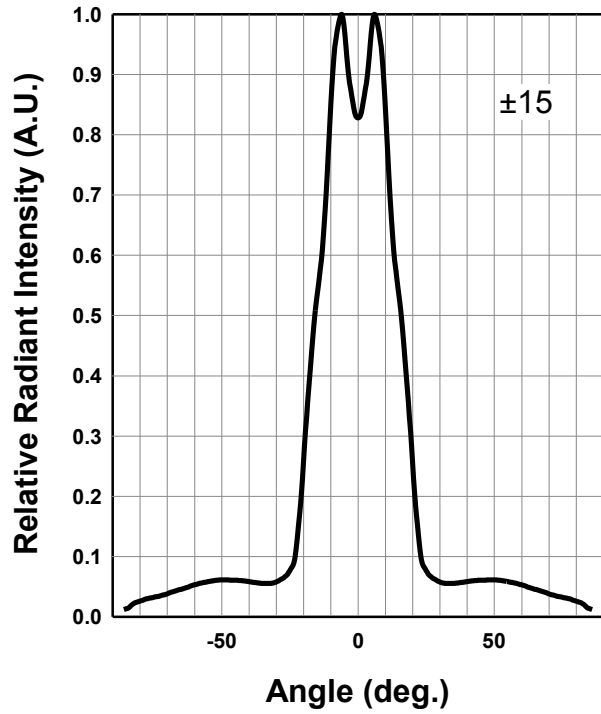




**Relative Spectral Emission**



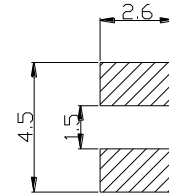
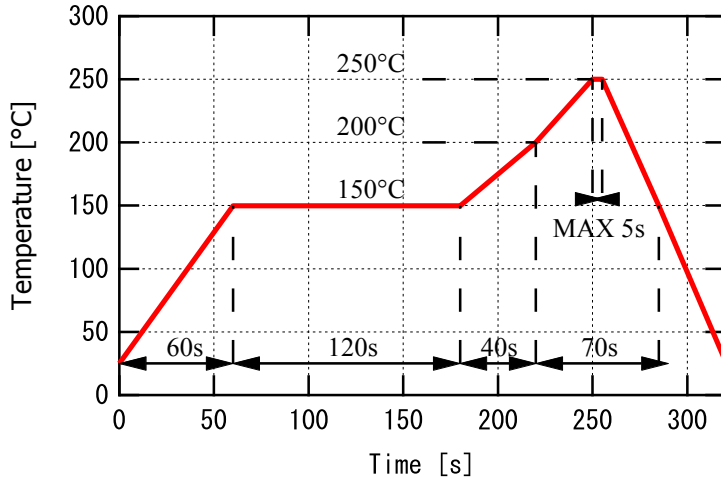
**Radiation Characteristics**



**SMD Application**

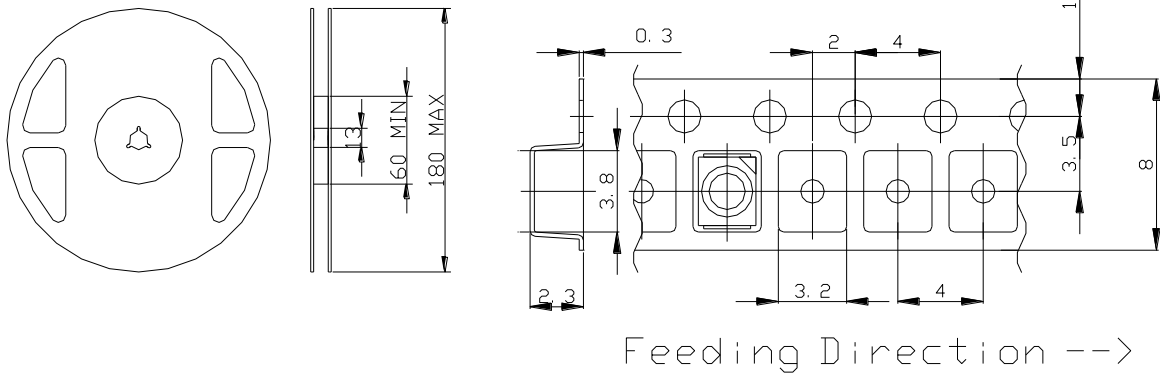
Recommended Lnd Layout (Unit : mm)

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.

**Disclaimer**

Product specifications and data shown in this product catalog are subject to change without notice for the purposes of improving product performance, reliability, design, or otherwise.

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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