

SMT830N-23

High Performance Infrared TOP IR LED with Lens

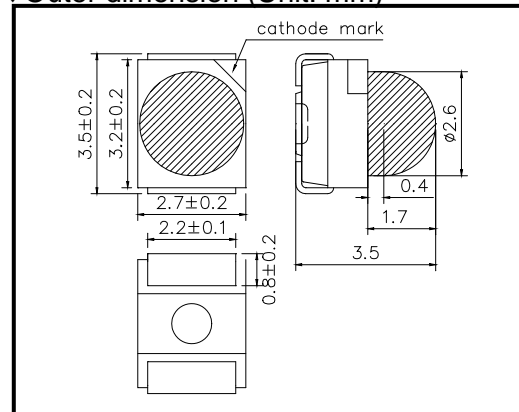
SMT830N-23 consists of an AlGaAs LED mounted on the lead frame as TOP LED package with plastic ball lens and is 20mW typical of power and 20mW/sr of radiant intensity.

It emits a spectral band of radiation at 830nm.

◆ Specifications

1) Product Name	TOP IR LED
2) Type No.	SMT830N-23
3) Chip	
(1) Chip Material	AlGaAs
(2) Chip Dimension	400um * 400um
(3) Peak Wavelength	830nm typ.
4) Package	
(1) Lead Frame Die	Silver Plated
(2) Package Resin	PPA Resin
(3) Lens	Epoxy resin
(4) Diameter	Φ2.6mm

◆ Outer dimension (Unit: mm)



◆ Absolute Maximum Ratings

Item	Symbol	Maximum Rated Value	Unit	Ambient Temperature
Power Dissipation	P _D	170	mW	T _a =25°C
Forward Current	I _F	100	mA	T _a =25°C
Pulse Forward Current	I _{FP}	1000	mA	T _a =25°C
Reverse Voltage	V _R	5	V	T _a =25°C
Thermal Resistance	R _{thja}	200	K/W	
Junction Temperature	T _j	100	°C	
Operating Temperature	T _{OPR}	-20 ~ +80	°C	
Storage Temperature	T _{STG}	-20 ~ +80	°C	
Soldering Temperature	T _{SOL}	250	°C	

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

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

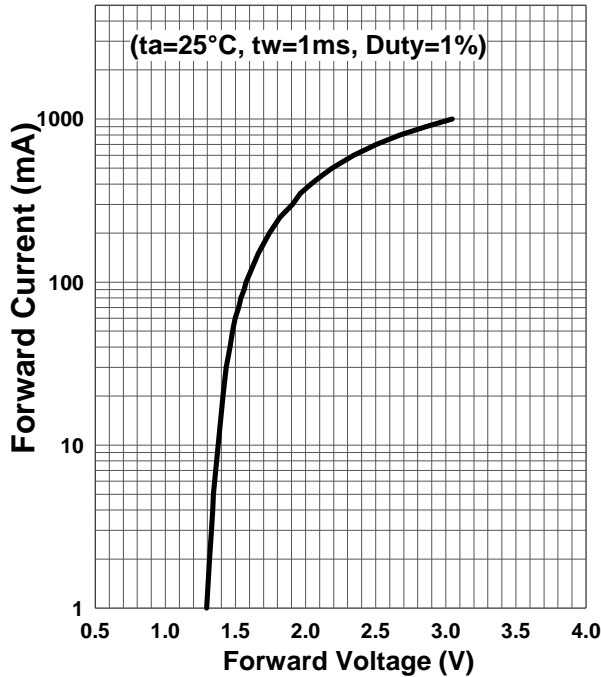
◆ Electro-Optical Characteristics [T_a=25°C]

Item	Symbol	Condition	Minimum	Typical	Maximum	Unit
Forward Voltage	V _F	I _F =50mA		1.5	1.65	V
Radiated Power	P _O	I _F =50mA	16.0	20.0		mW
Radiant Intensity	I _E	I _F =50mA		20		mW/sr
Peak Wavelength	λ _P	I _F =50mA	820	830	840	nm
Half Width	Δλ	I _F =50mA		35		nm
Viewing Half Angle	θ _{1/2}	I _F =50mA		±15		deg.
Rise Time	t _r	I _F =50mA		25		ns
Fall Time	t _f	I _F =50mA		20		ns

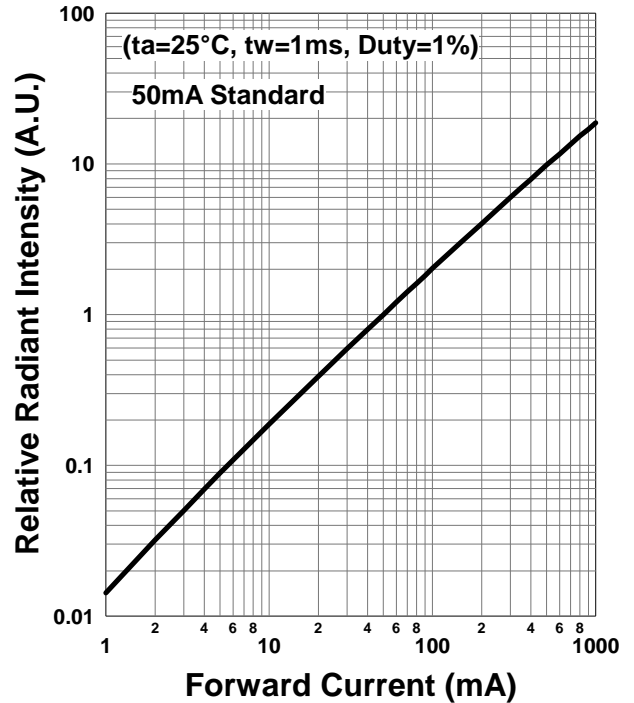
‡Radiated Power is measured by S3584-08.

‡Radiant Intensity is measured by Tektronix J6512.

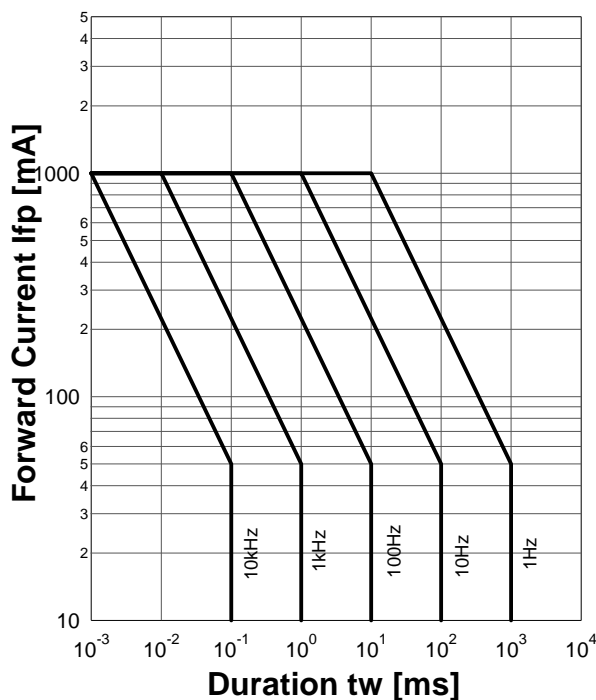
Forward Current - Forward Voltage



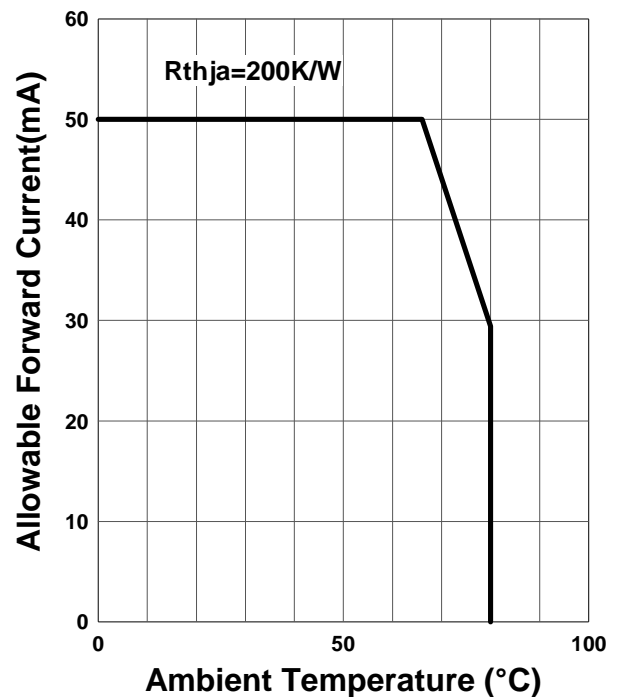
Relative Radiant Intensity - Forward Current



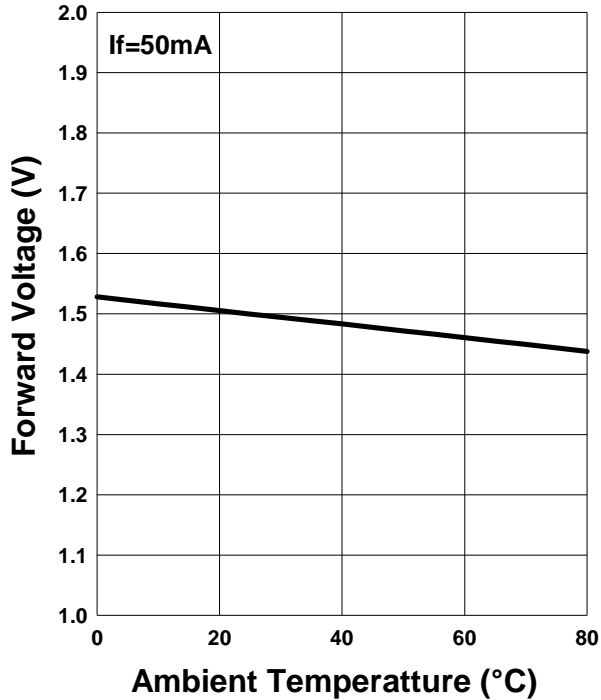
Forward Current - Pulse Duration



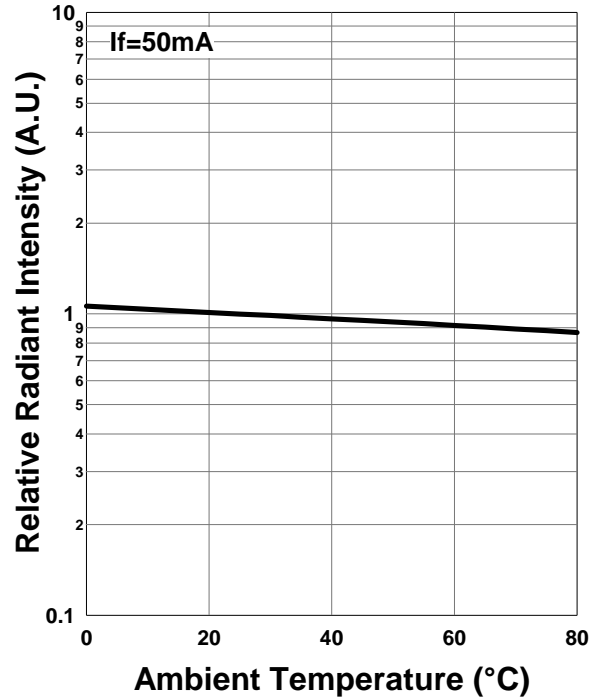
Allowable Forward Current - Ambient Temperature



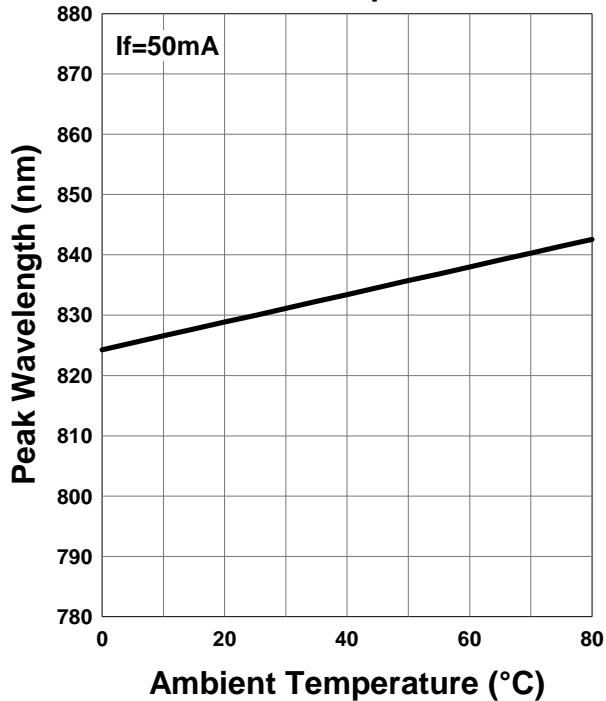
Forward Voltage - Ambient Temperature



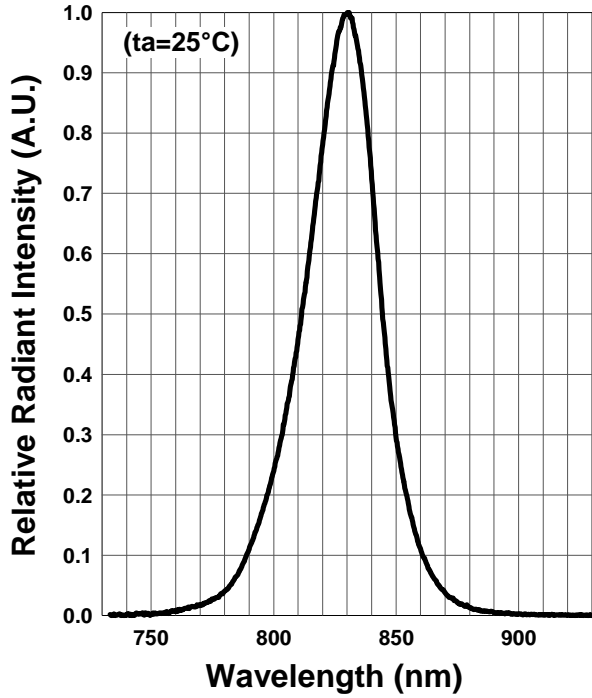
Relative Radiant Intensity - Ambient Temperature



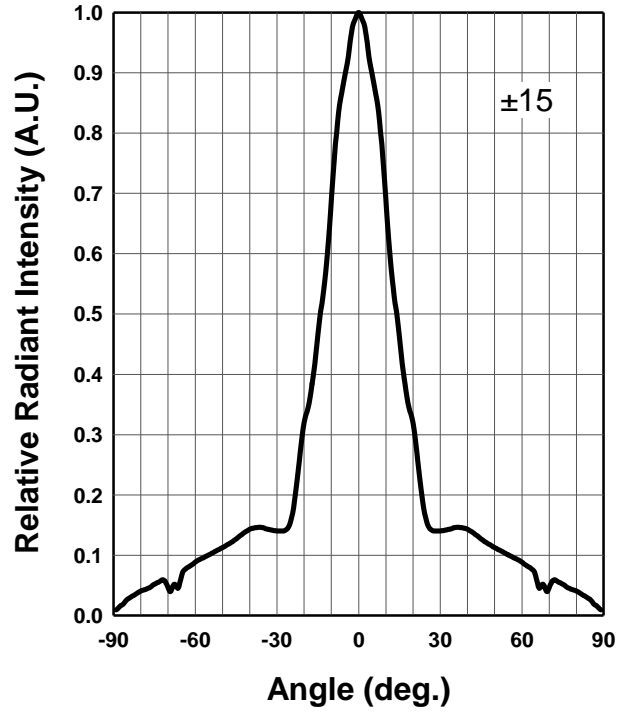
Peak Wavelength - Ambient Temperature



Relative Spectral Emission



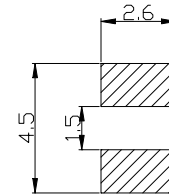
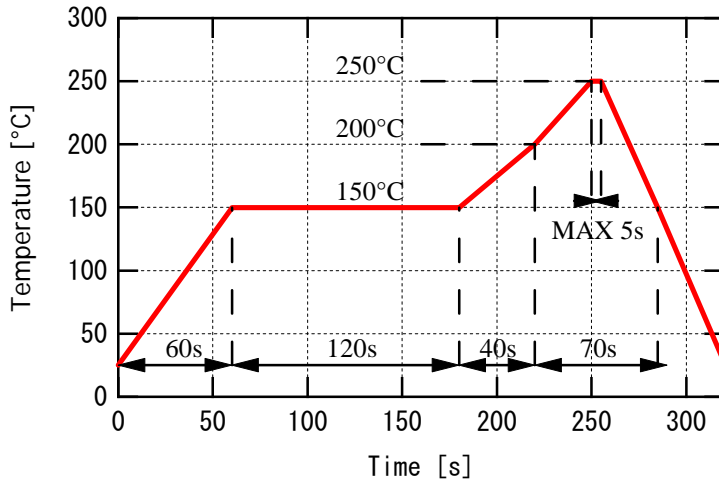
Radiation Characteristics



◆SMD Application

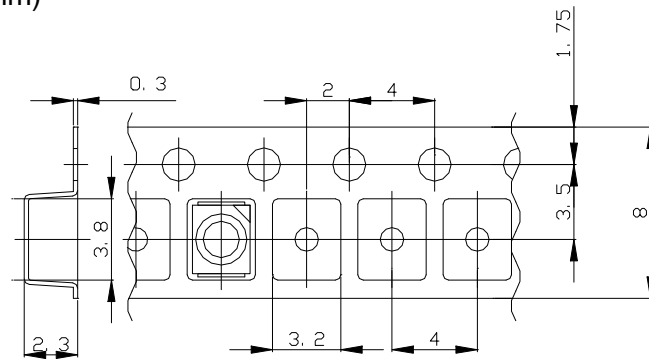
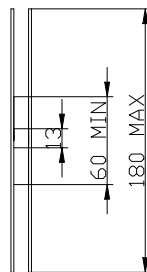
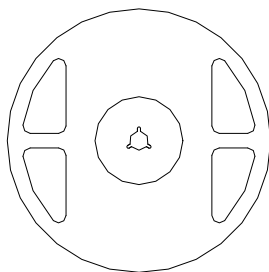
◆Recomended Lnd Layout (Unit : mm)

IR-Reflow Soldering Profile for lead free soldering



◆SMD Packing

Tape and Reel Dimensions (Unit: mm)



Feeding Direction -->

◆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.

Products shown in this catalog are intended to be used for general electronic equipment. Products are not guaranteed for applications where product malfunction or failure may cause personal injury or death, including but not limited to life-supporting / saving devices, medical devices, safety devices, airplanes, aerospace equipment, automobiles, traffic control systems, and nuclear reactor control systems.

2012.12