

# SMT830N

High Performance Infrared TOP IR LED with Lens

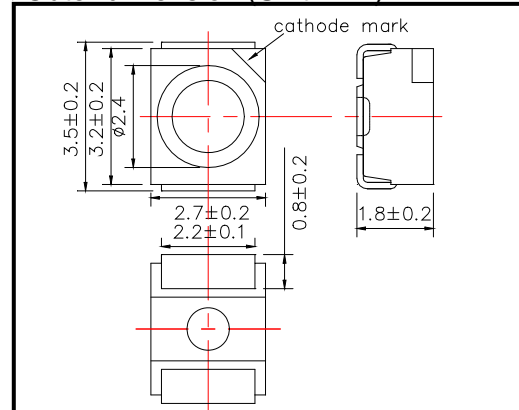
SMT830N consists of an AlGaAs LED mounted on the lead frame as TOP LED package with plastic ball lens and is 20mW typical of power and 20mW/sr of radiant intensity.

It emits a spectral band of radiation at 830nm.

### ◆ Specifications

1) Product Name	TOP IR LED
2) Type No.	SMT830N
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	PD	170	mW	Ta=25°C
Forward Current	IF	100	mA	Ta=25°C
Pulse Forward Current	IFP	1000	mA	Ta=25°C
Reverse Voltage	VR	5	V	Ta=25°C
Thermal Resistance	Rthja	200	K/W	
Junction Temperature	Tj	100	°C	
Operating Temperature	TOPR	-20 ~ +80	°C	
Storage Temperature	TSTG	-20 ~ +80	°C	
Soldering Temperature	TSOL	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

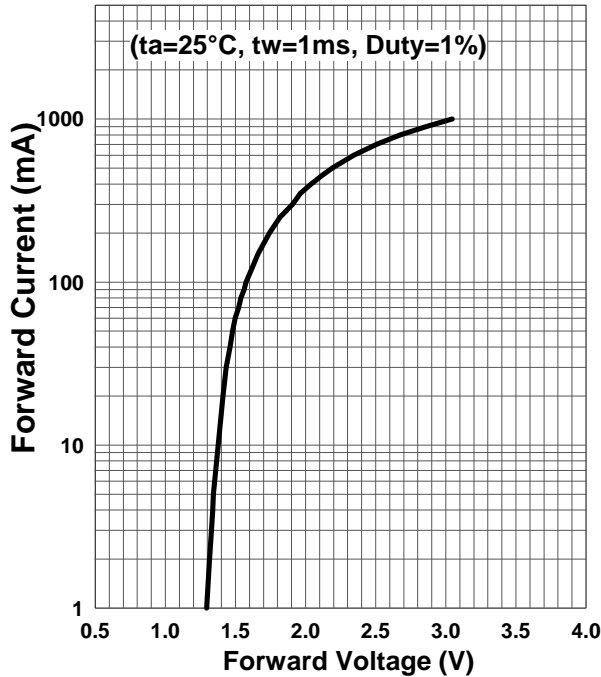
### ◆ Electro-Optical Characteristics [Ta=25°C]

Item	Symbol	Condition	Minimum	Typical	Maximum	Unit
Forward Voltage	VF	IF=50mA		1.5	1.65	V
Radiated Power	PO	IF=50mA	16.0	20.0		mW
Radiant Intensity	IE	IF=50mA		20		mW/sr
Peak Wavelength	λP	IF=50mA	820	830	840	nm
Half Width	Δλ	IF=50mA		35		nm
Viewing Half Angle	θ 1/2	IF=50mA		±65		deg.
Rise Time	tr	IF=50mA		25		ns
Fall Time	tf	IF=50mA		20		ns

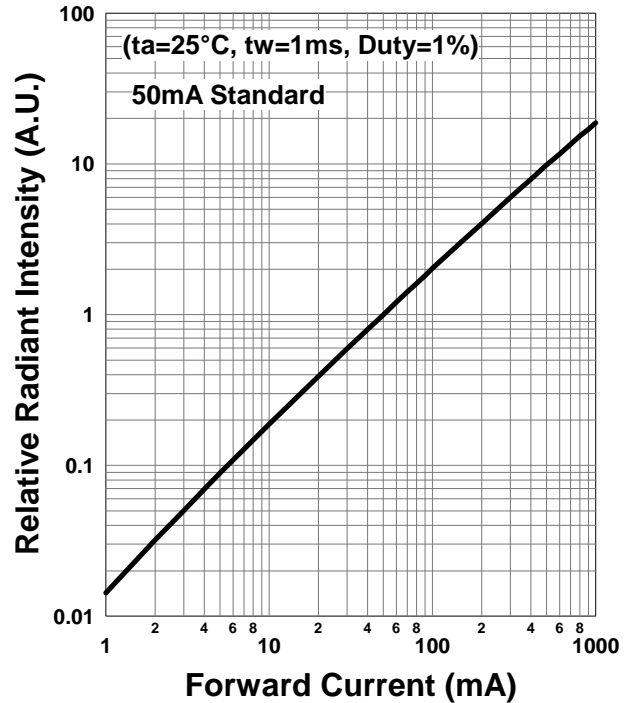
‡Radiated Power is measured by S3584-08.

‡Radiant Intensity is measured by Tektronix J6512.

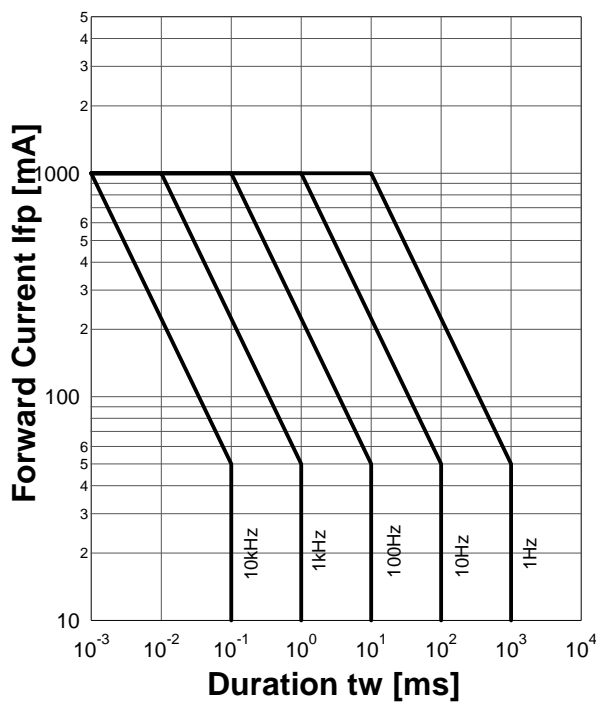
**Forward Current - Forward Voltage**



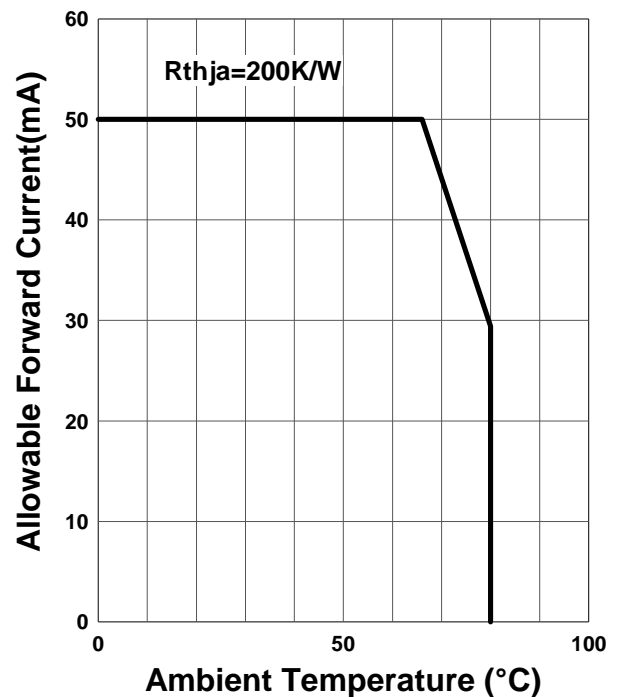
**Relative Radiant Intensity - Forward Current**



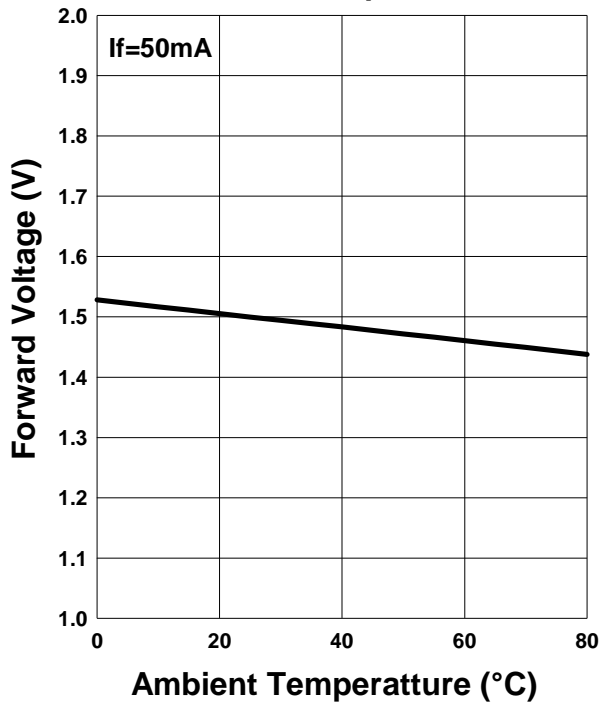
**Forward Current - Pulse Duration**



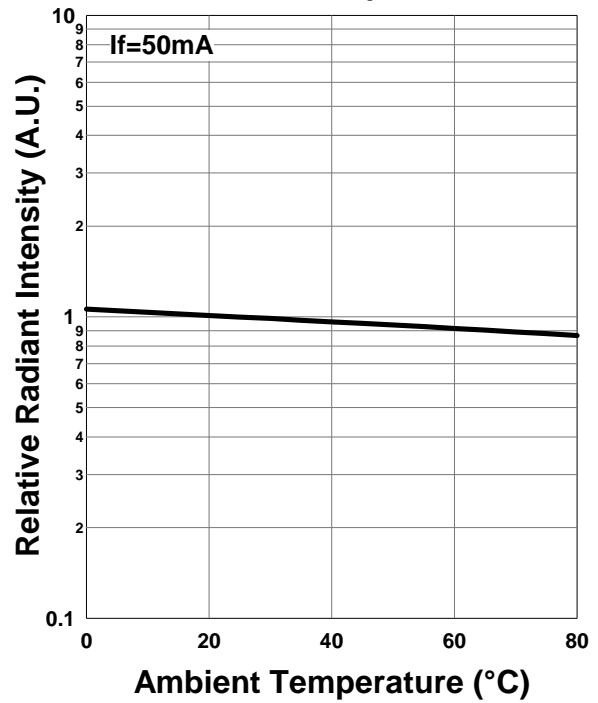
**Allowable Forward Current - Ambient Temperature**



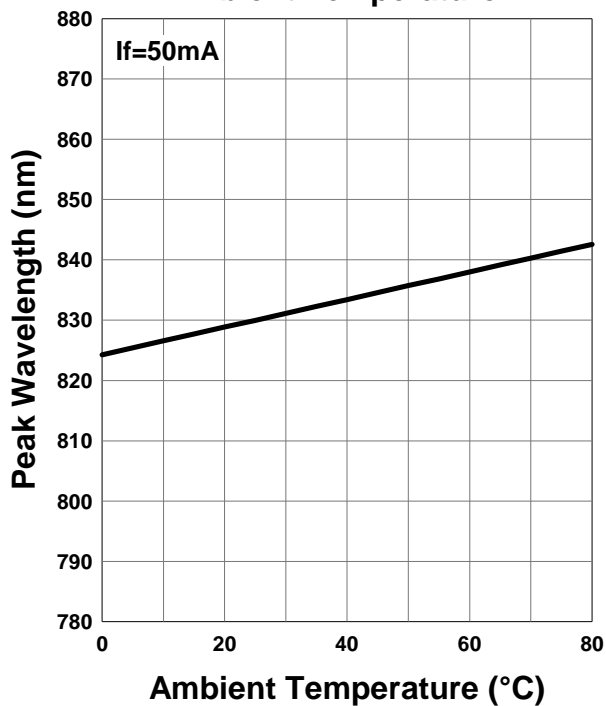
Forward Voltage - Ambient Temperature



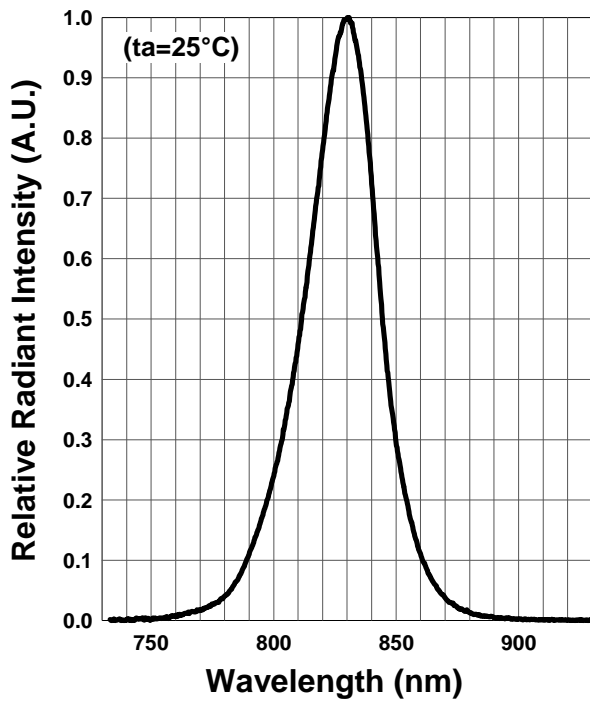
Relative Radiant Intensity - Ambient Temperature



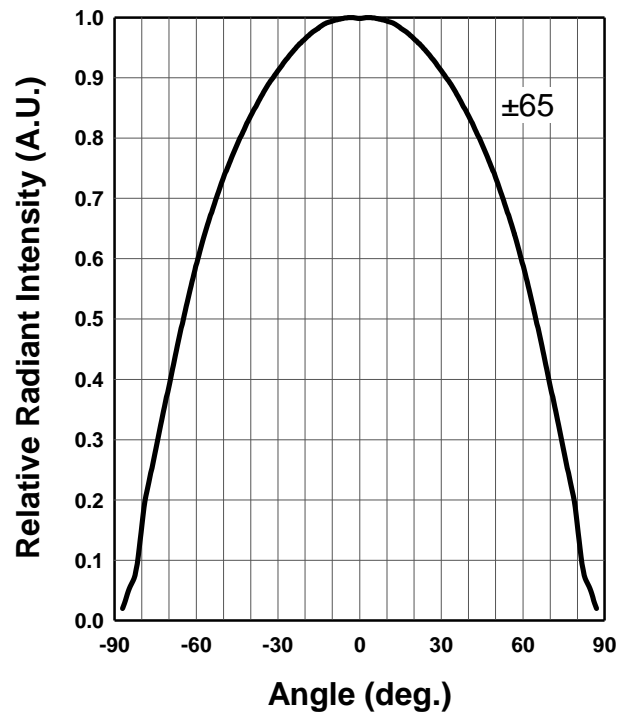
Peak Wavelength - Ambient Temperature



Relative Spectral Emission



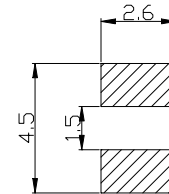
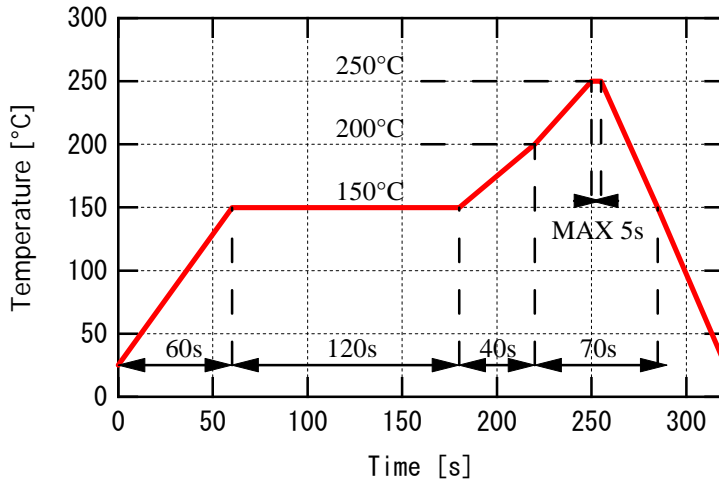
Radiation Characteristics



◆SMD Application

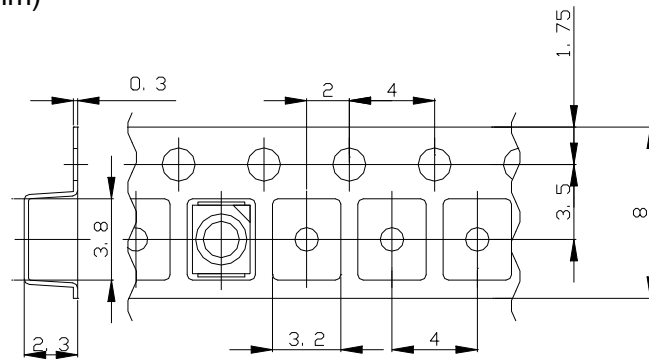
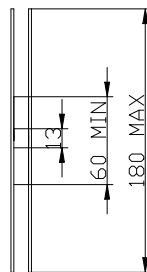
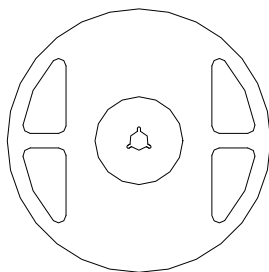
◆Recommended Lnd Layout (Unit : mm)

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**

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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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