



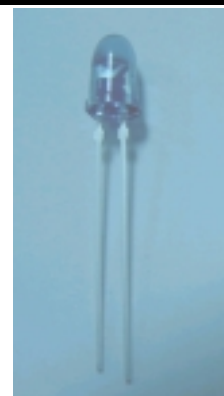
Technical Data Sheet

5mm Infrared LED, T-1

IR383/H40/P3

Features

- High reliability
- 2.54mm lead spacing
- Low forward voltage
- Good spectral matching to Si photodetector



Descriptions

EVERLIGHT's infrared emitting diode (IR383/H40/P3) is a high intensity diode, molded in a blue transparent plastic package.

The device is spectrally matched with phototransistor, photodiode and infrared receiver module.

Applications

- Auto flush
- Optoelectronic switch
- Floppy disk drive
- Infrared applied system

Device Selection Guide

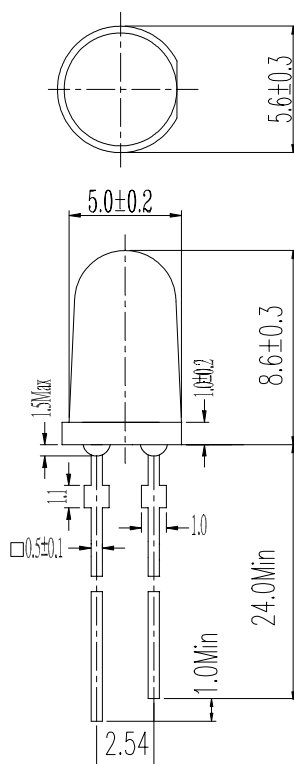
LED Part No.	Chip	Lens Color
	Material	
IR	GaAlAs	Blue

Device No:DIR-038-213



IR383/H40/P3

Package Dimensions



- Notes:** 1. All dimensions are in millimeters
2. Tolerances unless dimensions ± 0.1 mm

Absolute Maximum Ratings ($T_a=25^\circ\text{C}$)

Parameter	Symbol	Rating	Units
Continuous Forward Current	I_F	100	mA
Peak Forward Current	I_{FP}	1.0	A
Reverse Voltage	V_R	5	V
Operating Temperature	T_{opr}	-40 ~ +85	$^\circ\text{C}$
Storage Temperature	T_{stg}	-40 ~ +85	$^\circ\text{C}$
Soldering Temperature	T_{sol}	260	$^\circ\text{C}$
Power Dissipation at (or below) 25 $^\circ\text{C}$ Free Air Temperature	P_d	150	mW

Notes: *1: I_{FP} Conditions--Pulse Width $\leq 100 \mu\text{s}$ and Duty $\leq 1\%$.

*2: Soldering time ≤ 5 seconds.

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Electro-Optical Characteristics (Ta=25°C)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Units
Radiant Intensity	E _e	I _F =20mA	4.0	8.9	--	mW/sr
		I _F =100mA Pulse Width ≤ 100 μs and Duty ≤ 1%	--	35	--	
		I _F =1A Pulse Width ≤ 100 μs and Duty ≤ 1%	--	450	--	
Peak Wavelength	λ _p	I _F =20mA	--	940	--	nm
Spectral Bandwidth	Δλ	I _F =20mA	--	45	--	nm
Forward Voltage	V _F	I _F =20mA	--	1.2	1.5	V
		I _F =100mA Pulse Width ≤ 100 μs and Duty ≤ 1%	--	1.4	1.8	
		I _F =1A Pulse Width ≤ 100 μs and Duty ≤ 1%	--	2.6	4.0	
Reverse Current	I _R	V _R =5V	--	--	10	μA
View Angle	2θ 1/2	I _F =20mA	--	30	--	deg

Intensity Specifications for Bin Grading

Rank	Test Condition	Min	Max	Unit
K	I _F =20mA	4.0	6.4	mW/sr
L		5.6	8.9	
M		7.8	12.5	
N		11.0	17.6	

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Typical Electro-Optical Characteristics Curves

Fig.1 Forward Current vs. Ambient Temperature

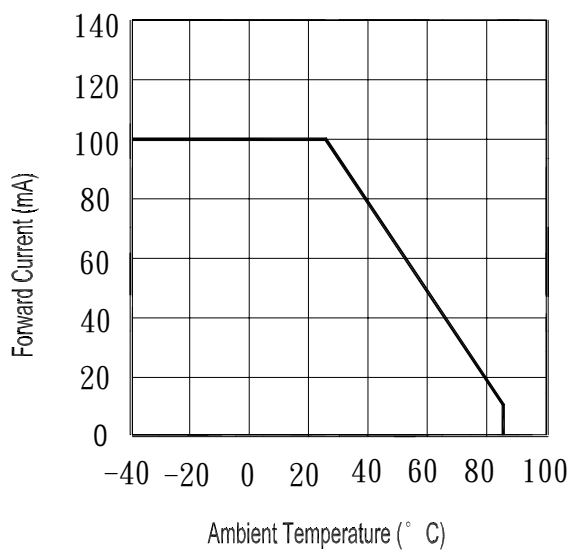


Fig.2 Spectral Distribution

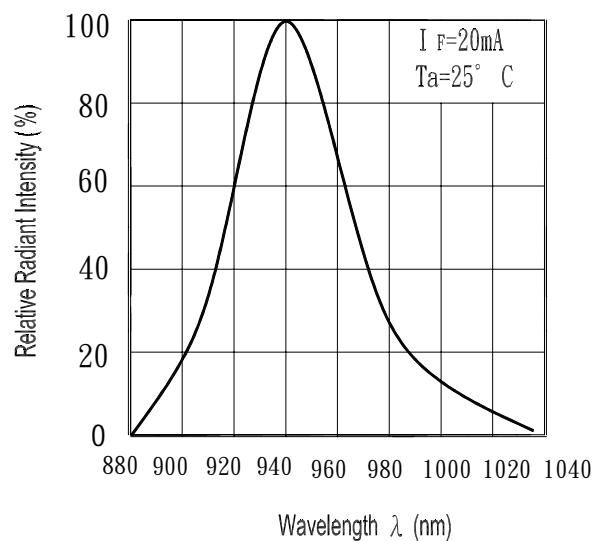


Fig.3 Peak Emission Wavelength vs. Ambient Temperature

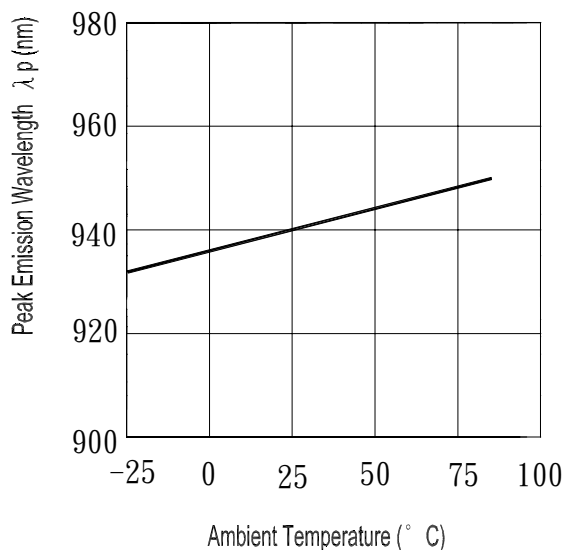
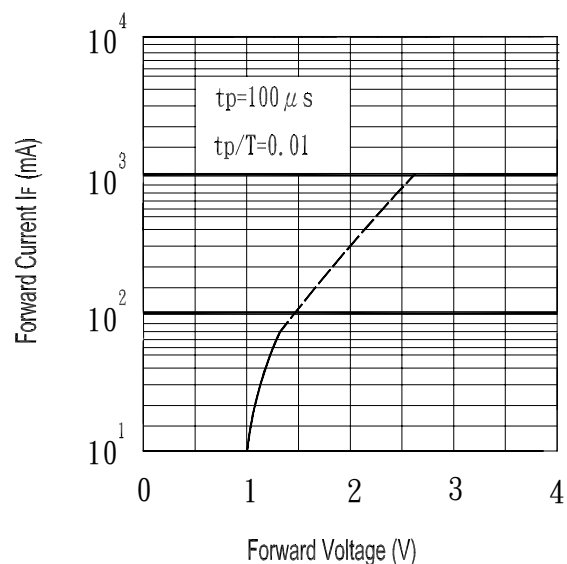


Fig.4 Forward Current vs. Forward Voltage



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Typical Electro-Optical Characteristics Curves

Fig.5 Relative Intensity vs. Forward Current

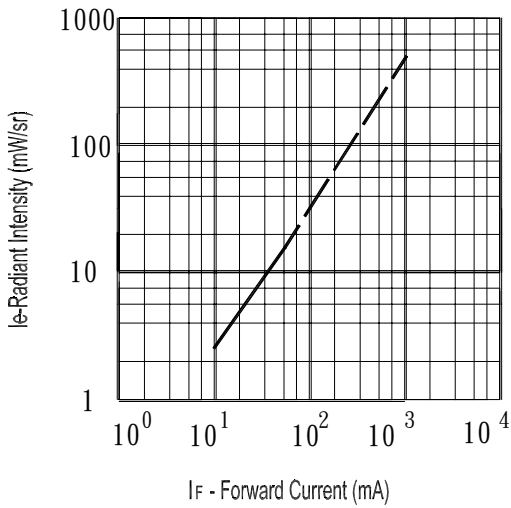


Fig.6 Relative Radiant Intensity vs. Angular Displacement

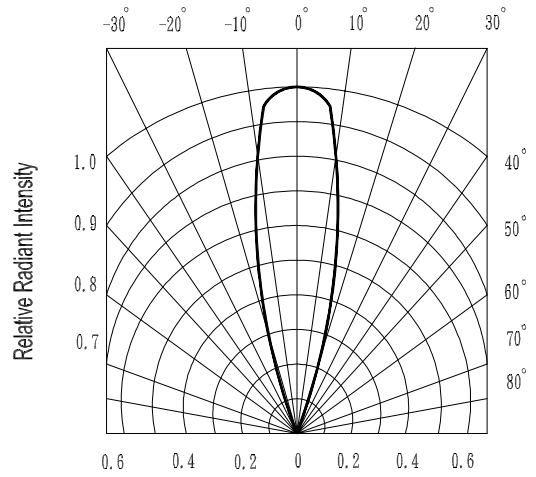


Fig.7 Relative Intensity vs. Ambient Temperature (° C)

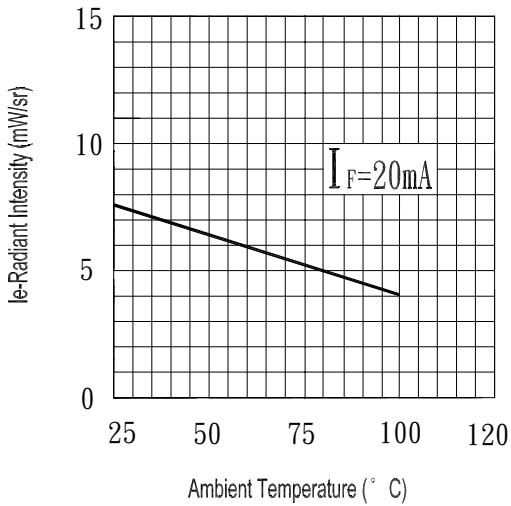
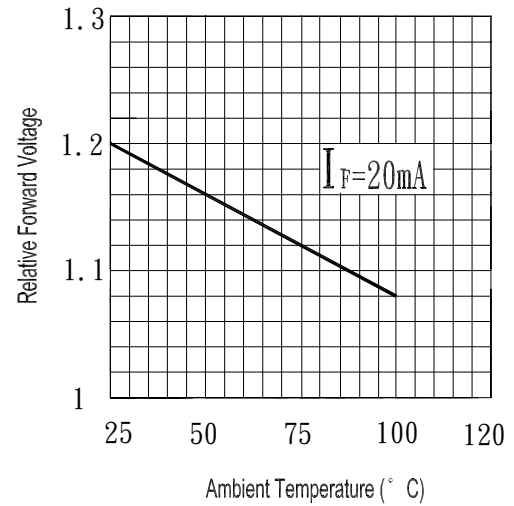


Fig.8 Forward Current vs. Ambient Temperature (° C)



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Reliability Test Item And Condition

The reliability of products shall be satisfied with items listed below.

Confidence level : 90%

LTPD : 10%

NO.	Item	Test Conditions	Test Hours/ Cycles	Sample Sizes	Failure Judgement Criteria	Ac/Re
1	Solder Heat	TEMP. : $260^{\circ}\text{C} \pm 5^{\circ}\text{C}$	10secs	22pcs	$I_R \geq U \times 2$ $E_e \leq L \times 0.8$ $V_F \geq U \times 1.2$ U : Upper Specification Limit L : Lower Specification Limit	0/1
2	Temperature Cycle	H : $+85^{\circ}\text{C}$ 30mins \updownarrow 5mins L : -55°C 30mins	50Cycle	22pcs		0/1
3	Thermal Shock	H : $+100^{\circ}\text{C}$ 5mins \updownarrow 10secs L : -10°C 5mins	50Cycle	22pcs		0/1
4	High Temperature Storage	TEMP. : $+100^{\circ}\text{C}$	1000hrs	22pcs		0/1
5	Low Temperature Storage	TEMP. : -55°C	1000hrs	22pcs		0/1
6	DC Operating Life	$I_F = 20\text{mA}$	1000hrs	22pcs		0/1
7	High Temperature/ High Humidity	$85^{\circ}\text{C} / 85\% \text{ R.H}$	1000hrs	22pcs		0/1

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