



Technical Data Sheet

5mm Infrared With Stopper LED, T-1 3/4

IR333C/H0/P3

Features

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

Descriptions

EVERLIGHT's infrared emitting diode (IR333C/H0/P3) is a high intensity diode, molded in a water clear plastic package.

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



Applications

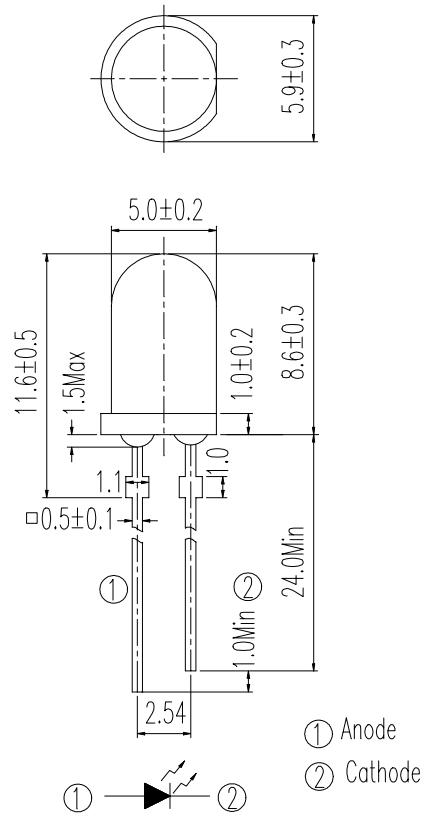
- Free air transmission system
- Optoelectronic switch
- Floppy disk drive
- Infrared applied system
- Smoke detector

Device Selection Guide

LED Part No.	Chip	Lens Color
	Material	
IR	GaAlAs	Water clear

Device No:DIR-033-173

Package Dimensions



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

Absolute Maximum Ratings (Ta=25°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	°C
Storage Temperature	T _{stg}	-40 ~ +85	°C
Soldering Temperature	T _{sol}	260	°C
Power Dissipation at(or below) 25°C Free Air Temperature	P _d	150	mW

- Notes:** *1:I_{FP} Conditions--Pulse Width $\leq 100 \mu$ s and Duty $\leq 1\%$.
*2:Soldering time ≤ 5 seconds.

Electro-Optical Characteristics (Ta=25°C)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Units
Radiant Intensity	E _e	I _F =20mA	5.6	7.8	--	mW/sr
		I _F =100mA Pulse Width ≤ 100 μs and Duty ≤ 1%	--	45	--	
		I _F =1A Pulse Width ≤ 100 μs and Duty ≤ 1%	--	450	--	
Peak Wavelength	λ _p	I _F =20mA	--	940	--	nm
Spectral Bandwidth	Δ λ	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	2 θ 1/2	I _F =20mA	--	40	--	deg

Intensity Specifications for Bin Grading

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

Typical Electro-Optical Characteristics Curves

Fig.1 Forward Current vs. Ambient Temperature

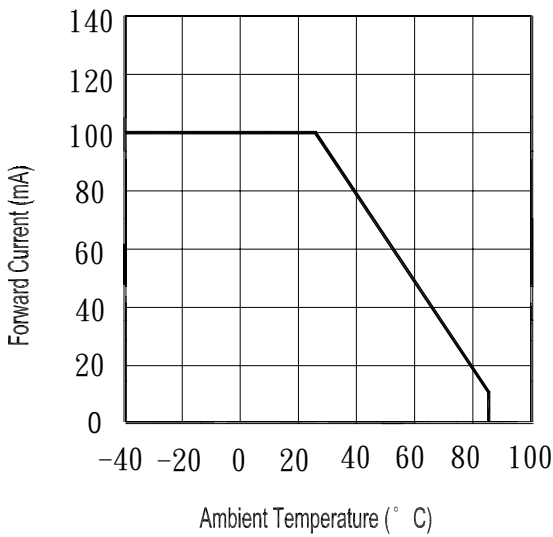


Fig.2 Spectral Distribution

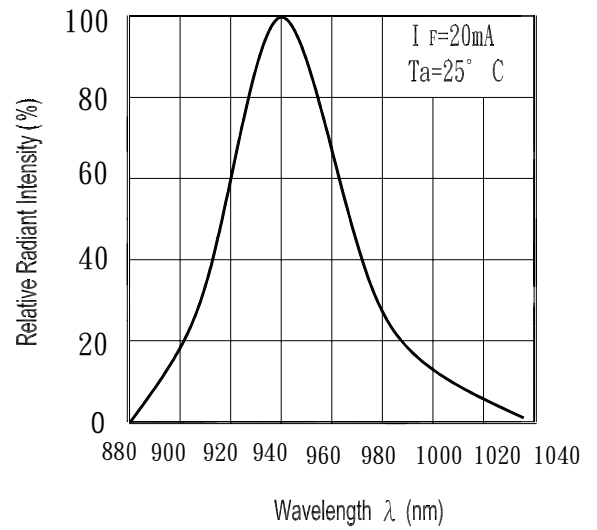


Fig.3 Peak Emission Wavelength vs. Ambient Temperature

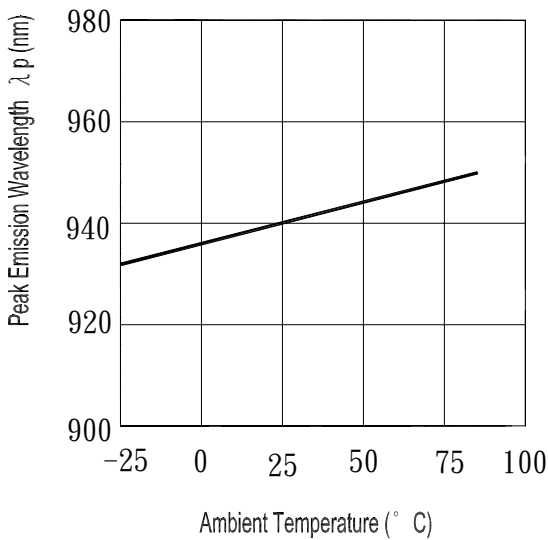
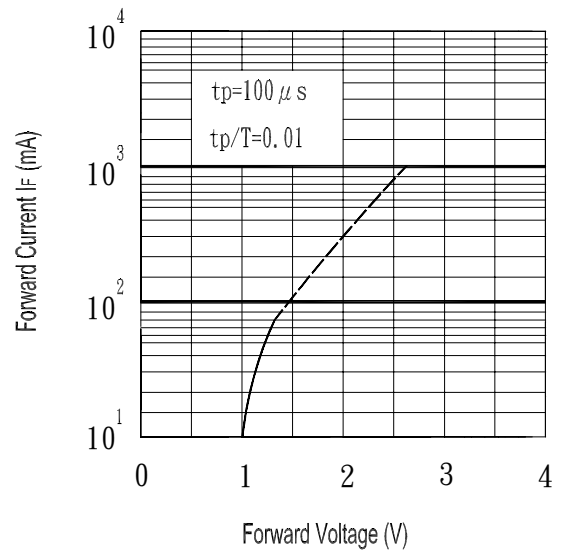


Fig.4 Forward Current vs. Forward Voltage



Device No:DIR-033-173

Typical Electro-Optical Characteristics Curves

Fig.5 Relative Intensity vs. Forward Current

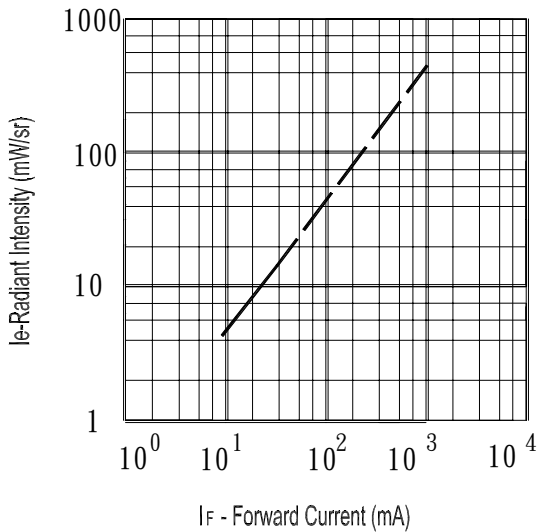


Fig.7 Relative Intensity vs. Ambient Temperature (° C)

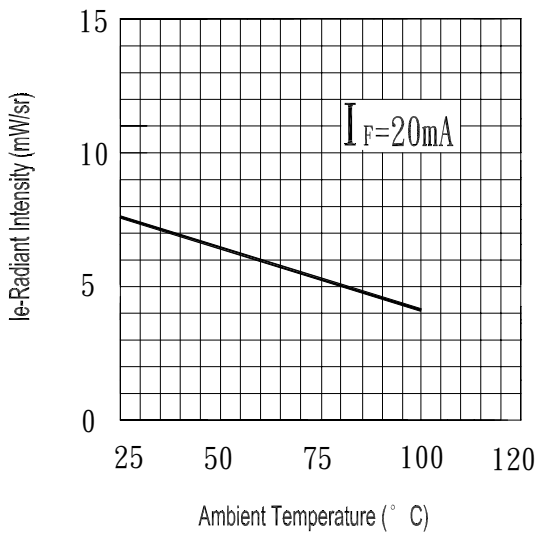


Fig.6 Relative Radiant Intensity vs. Angular Displacement

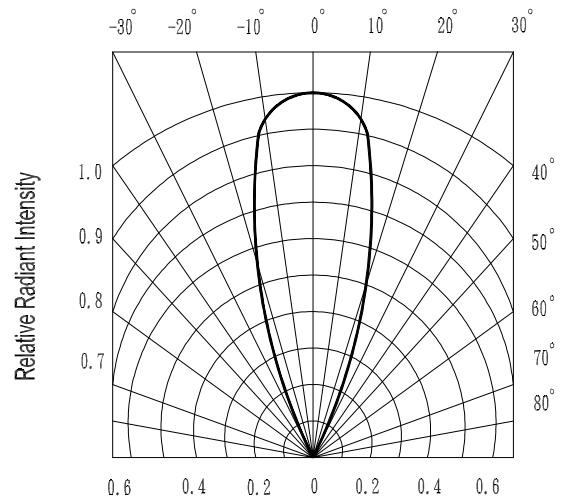
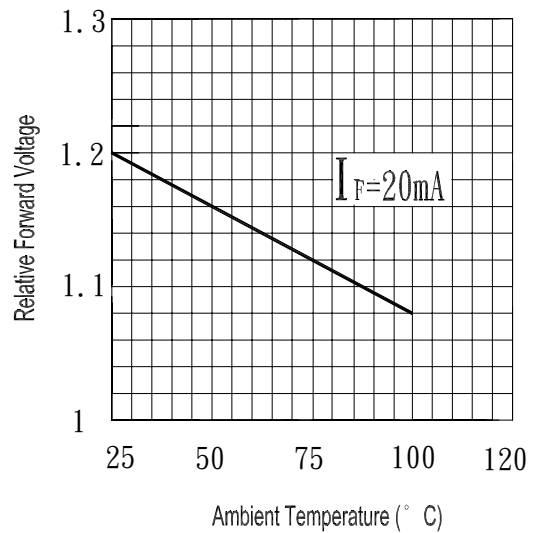


Fig.8 Forward Current vs. Ambient Temperature (° C)



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°C ± 5°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°C 30mins \updownarrow 5mins L : -55°C 30mins	50Cycle	22pcs		0/1
3	Thermal Shock	H : +100°C 5mins \updownarrow 10secs L : -10°C 5mins	50Cycle	22pcs		0/1
4	High Temperature Storage	TEMP. : +100°C	1000hrs	22pcs		0/1
5	Low Temperature Storage	TEMP. : -55°C	1000hrs	22pcs		0/1
6	DC Operating Life	$I_F = 20mA$	1000hrs	22pcs		0/1
7	High Temperature/ High Humidity	85°C / 85% R.H	1000hrs	22pcs		0/1

EVERLIGHT ELECTRONICS CO., LTD. Office: No 25, Lane 76, Sec 3, Chung Yang Rd, Tucheng, Taipei 236, Taiwan, R.O.C	Tel: 886-2-2267-2000, 2267-9936 Fax: 886-2267-6244, 2267-6189, 2267-6306 http://www.everlight.com
---	--

Device No:DIR-033-173