

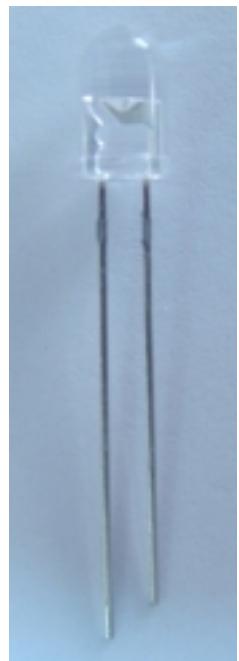
# Technical Data Sheet

## 5mm Infrared LED, T-1 3/4

**IR333C/H2**

### 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/H2) is a high intensity diode, molded in a water clear plastic package.

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

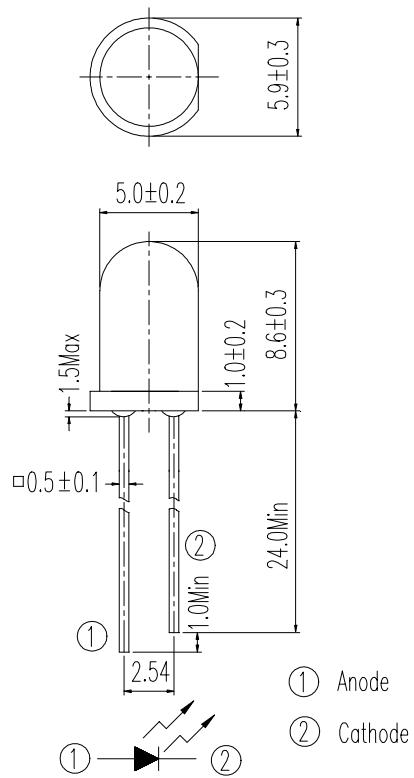
### Applications

- 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-033-017**

**Package Dimensions**

**Notes:** 1. All dimensions are in millimeters

2. Tolerances unless dimensions  $\pm 0.25$ mm

**Absolute Maximum Ratings (Ta=25°C)**

Parameter	Symbol	Rating	Units
Continuous Forward Current	I <sub>F</sub>	100	mA
Peak Forward Current	I <sub>FP</sub>	1.0	A
Reverse Voltage	V <sub>R</sub>	5	V
Operating Temperature	T <sub>opr</sub>	-40 ~ +85	°C
Storage Temperature	T <sub>stg</sub>	-40 ~ +85	°C
Soldering Temperature	T <sub>sol</sub>	260	°C
Power Dissipation at(or below) 25°C Free Air Temperature	P <sub>d</sub>	150	mW

**Notes:** \*1:I<sub>FP</sub> Conditions--Pulse Width  $\leq 100 \mu\text{s}$  and Duty  $\leq 1\%$ .

\*2:Soldering time  $\leq 5$  seconds.

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## IR333C/H2

### **Electro-Optical Characteristics (Ta=25°C)**

<b>Parameter</b>	<b>Symbol</b>	<b>Condition</b>	<b>Min.</b>	<b>Typ.</b>	<b>Max.</b>	<b>Units</b>
Radiant Intensity	E <sub>e</sub>	I <sub>F</sub> =20mA	7.8	15	--	mW/sr
		I <sub>F</sub> =100mA Pulse Width≤100 μ s and Duty≤1%	--	70	--	
		I <sub>F</sub> =1A Pulse Width≤100 μ s and Duty≤1%	--	700	--	
Peak Wavelength	λ <sub>p</sub>	I <sub>F</sub> =20mA	--	940	--	nm
Spectral Bandwidth	Δ λ	I <sub>F</sub> =20mA	--	45	--	nm
Forward Voltage	V <sub>F</sub>	I <sub>F</sub> =20mA	--	1.2	1.5	V
		I <sub>F</sub> =100mA Pulse Width≤100 μ s and Duty≤1%	--	1.4	1.8	
		I <sub>F</sub> =1A Pulse Width≤100 μ s and Duty≤1%	--	2.6	4.0	
Reverse Current	I <sub>R</sub>	V <sub>R</sub> =5V	--	--	10	μ A
View Angle	2 θ 1/2	I <sub>F</sub> =20mA	--	30	--	deg

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**Typical Electro-Optical Characteristics Curves**

Fig.1 Forward Current vs. Ambient Temperature

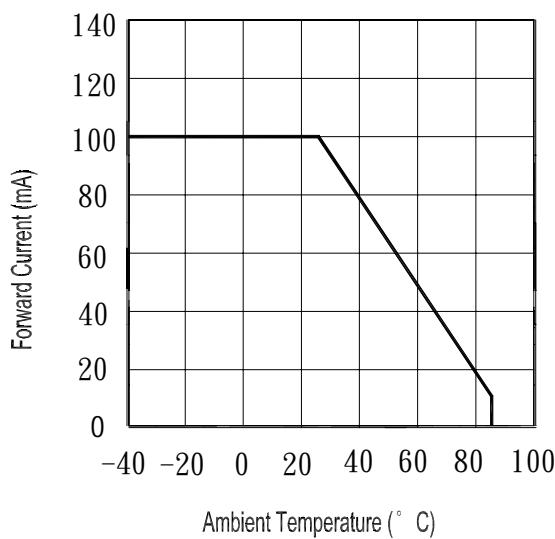


Fig.2 Spectral Distribution

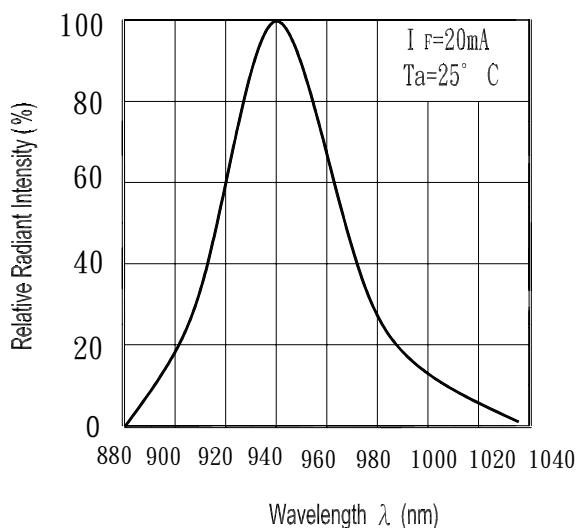


Fig.3 Peak Emission Wavelength vs. Ambient Temperature

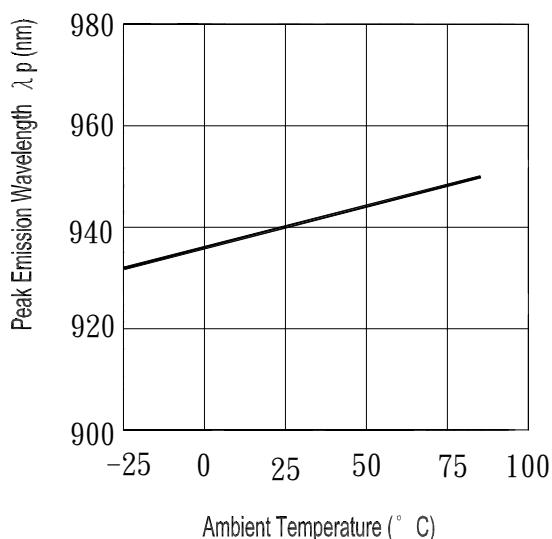
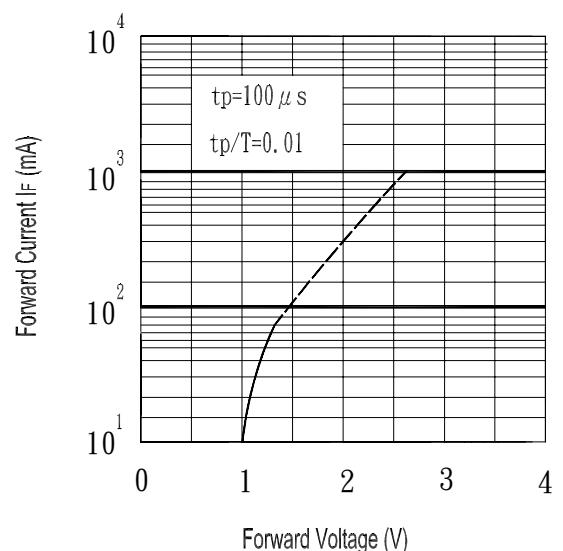


Fig.4 Forward Current vs. Forward Voltage



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**Typical Electro-Optical Characteristics Curves**

Fig.5 Relative Intensity vs. Forward Current

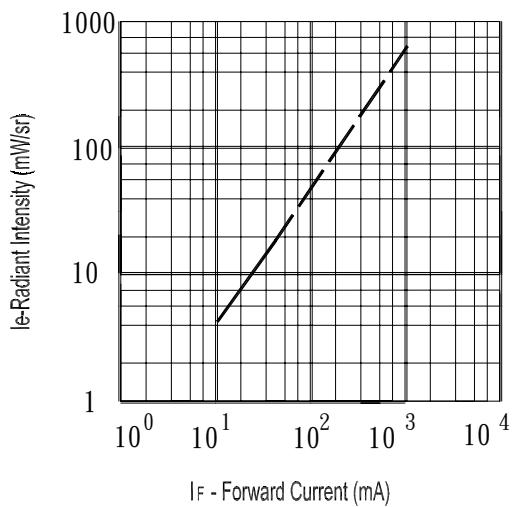


Fig.7 Relative Intensity vs. Ambient Temperature (° C)

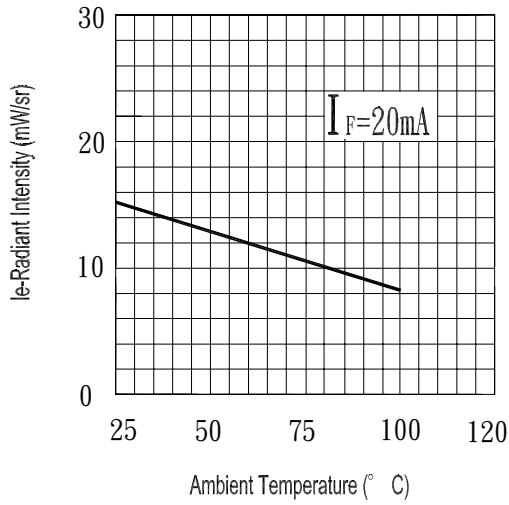


Fig.6 Relative Radiant Intensity vs. Angular Displacement

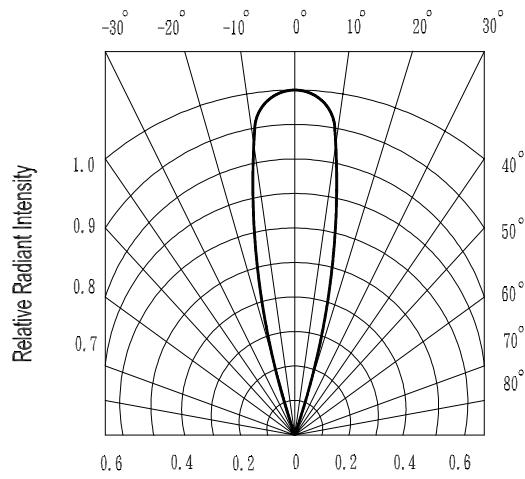
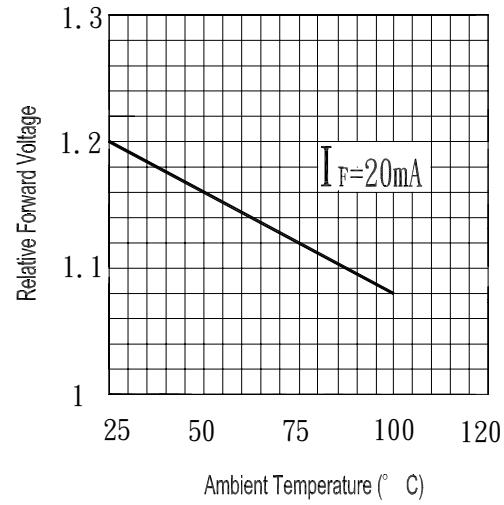


Fig.8 Forward Current vs. Ambient Temperature (° C)

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IR333C/H2**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		0/1
2	Temperature Cycle	H : $+85^{\circ}\text{C}$ L : $-55^{\circ}\text{C}$	30mins 5mins 30mins	50Cycles	22pcs	I <sub>R</sub> $\geq$ U <sub>x</sub> 2 E <sub>e</sub> $\leq$ L <sub>x</sub> 0.8 V <sub>F</sub> $\geq$ U <sub>x</sub> 1.2
3	Thermal Shock	H : $+100^{\circ}\text{C}$ L : $-10^{\circ}\text{C}$	5mins 10secs 5mins	50Cycles	22pcs	U : Upper Specification Limit L : Lower Specification Limit
4	High Temperature Storage	TEMP. : $+100^{\circ}\text{C}$	1000hrs	22pcs		0/1
5	Low Temperature Storage	TEMP. : $-55^{\circ}\text{C}$	1000hrs	22pcs		0/1
6	DC Operating Life	I <sub>F</sub> =20mA	1000hrs	22pcs		0/1
7	High Temperature/ High Humidity	85°C / 85% R.H	1000hrs	22pcs		0/1

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