

Technical Data Sheet

5mm Infrared LED, T-1 3/4

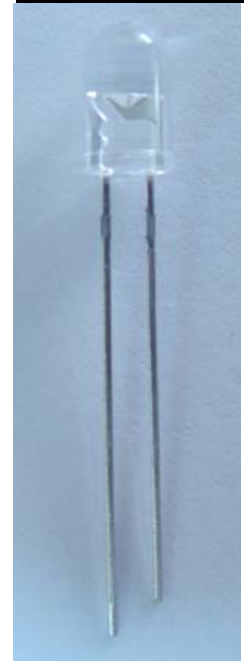
HIR333C/H0

Features

- High reliability
- High radiant intensity
- Peak wavelength $\lambda_p=850\text{nm}$
- 2.54mm Lead spacing
- Low forward voltage
- Pb free
- The product itself will remain within RoHS compliant version.

Descriptions

- EVERLIGHT'S Infrared Emitting Diode(HIR333C/H0) is a high intensity diode , molded in a water clear plastic package.
- The device is spectrally matched with phototransistor , photodiode and infrared receiver module.

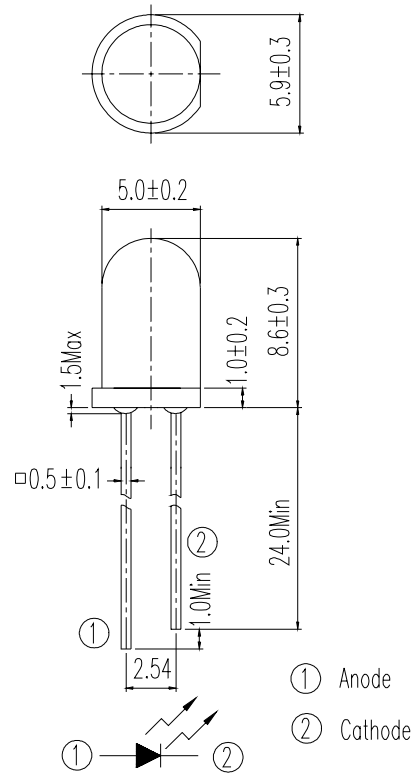


Applications

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

Device Selection Guide

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

Package Dimensions

Notes: 1.All dimensions are in millimeters
2.Tolerances unless dimensions ± 0.25 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	Ee	I _F =20mA	7.8	15	--	mW/sr
		I _F =100mA Pulse Width ≤ 100 μs ,Duty ≤ 1%	--	80	--	
		I _F =1A Pulse Width ≤ 100 μs ,Duty ≤ 1%.	--	800	--	
Peak Wavelength	λ _p	I _F =20mA	--	850	--	nm
Spectral Bandwidth	Δλ	I _F =20mA	--	45	--	nm
Forward Voltage	V _F	I _F =20mA		1.45	1.65	V
		I _F =100mA Pulse Width ≤ 100 μs ,Duty ≤ 1%	--	1.80	2.40	
		I _F =1A Pulse Width ≤ 100 μs ,Duty ≤ 1%.	--	4.10	5.25	
Reverse Current	I _R	V _R =5V	--	--	10	μA
View Angle	2θ _{1/2}	I _F =20mA	--	30	--	deg

RankCondition: I_F=20mA

Unit: mW/sr

Bin number	M	N	P	Q	R
Min	7.8	11.0	15.0	21.0	30.0
Max	12.5	17.6	24.0	34.0	48.0

Typical Electro-Optical Characteristics Curves

Fig.1 Forward Current vs.
Ambient Temperature

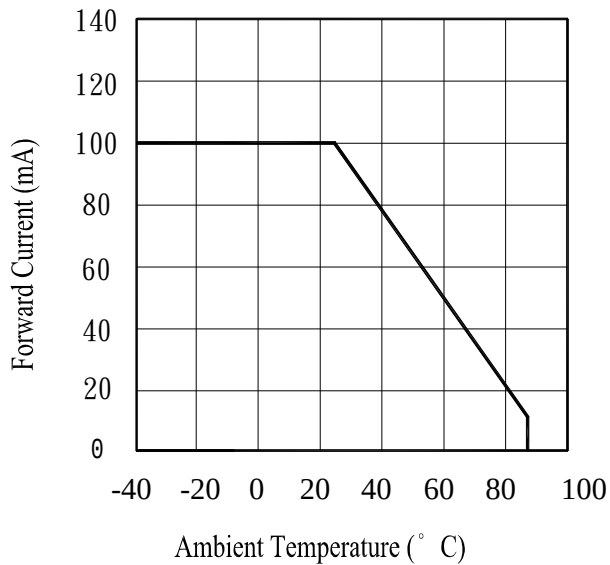


Fig.2 Spectral Distribution

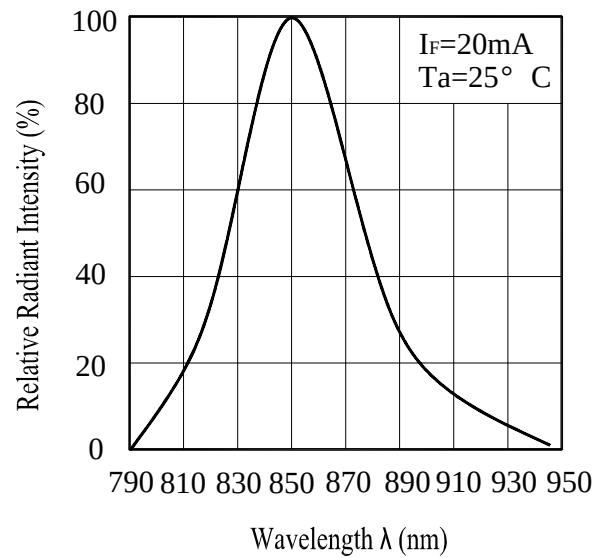


Fig.3 Peak Emission Wavelength
Ambient Temperature

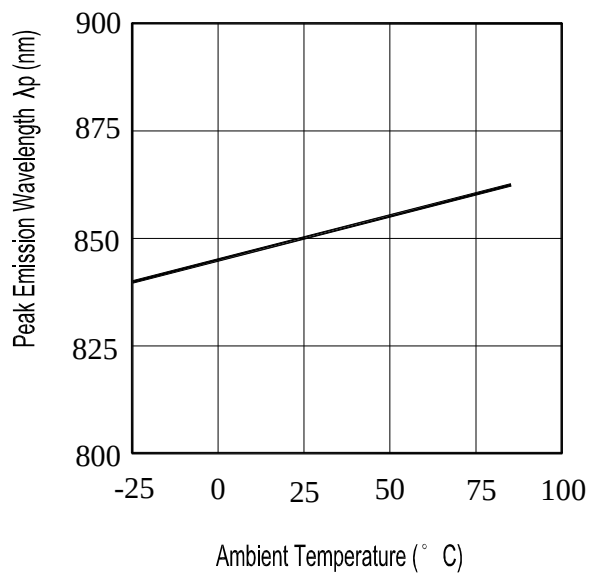
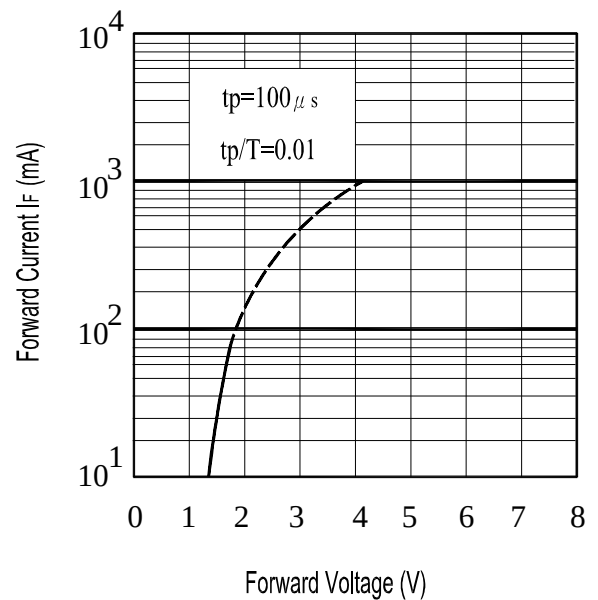


Fig.4 Forward Current
vs. Forward Voltage



Typical Electro-Optical Characteristics Curves

Fig.5 Relative Intensity vs.
Forward Current

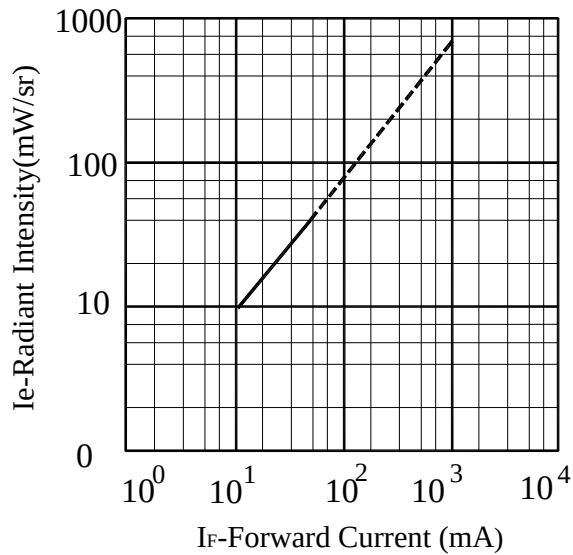


Fig.6 Relative Radiant Intensity vs.
Angular Displacement

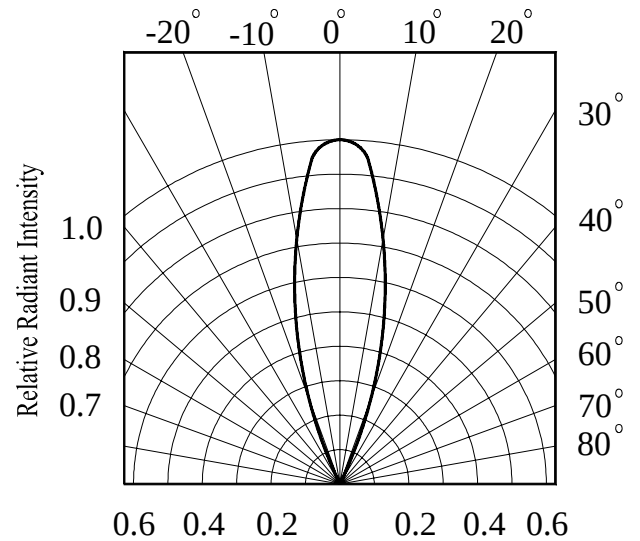


Fig.7 Relative Intensity vs.
Ambient Temperature($^\circ$ C)

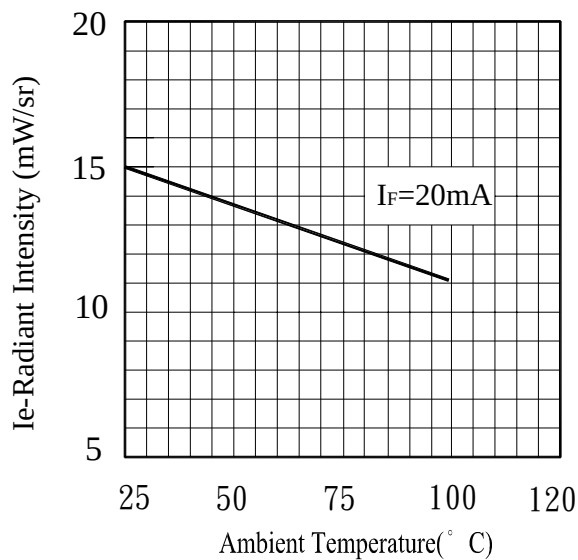
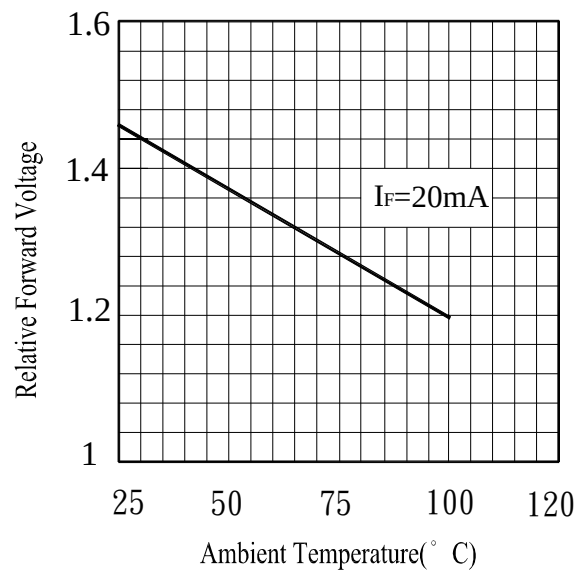


Fig.8 Forward Voltage vs.
Ambient Temperature($^\circ$ C)



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. : $260^{\circ}\text{C} \pm 5^{\circ}\text{C}$	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 : $+100^{\circ}\text{C}$ 15mins ↓ 5mins L : -40°C 15mins	300Cycles	22pcs		0/1
3	Thermal Shock	H : $+100^{\circ}\text{C}$ 5mins ↓ 10secs L : -10°C 5mins	300Cycles	22pcs		0/1
4	High Temperature Storage	TEMP. : $+100^{\circ}\text{C}$	1000hrs	22pcs		0/1
5	Low Temperature Storage	TEMP. : -40°C	1000hrs	22pcs		0/1
6	DC Operating Life	$I_F = 20\text{mA}$	1000hrs	22pcs		0/1
7	High Temperature/ High Humidity	85°C / 85% R.H	1000hrs	22pcs		0/1

Packing Quantity Specification

1.500PCS/1Bag , 5Bags/1Box

2.10Boxes/1Carton

Label Form Specification

EVERLIGHT	
CPN:	
P/N:	
	RoHS
QTY:	HIR333C/H0
	CAT:
	HUE:
	REF:
LOT NO:	
	
MADE IN TAIWAN	

CPN: Customer's Production Numb

P/N : Production Number

QTY: Packing Quantity

CAT: Ranks

HUE: Peak Wavelength

REF: Reference

LOT No: Lot Number

MADE IN TAIWAN: Production Place