

Technical Data Sheet

5mm Infrared LED, T-1 3/4

HIR313C

Features

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



Descriptions

- EVERLIGHT'S Infrared Emitting Diode(HIR313C) 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	
HIR313C	GaAlAs	Water clear

Electro-Optical Characteristics (Ta=25°C)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Units
Radiant Intensity	Ee	I _F =20mA	15	35	--	mW/sr
		I _F =100mA Pulse Width ≤ 100 μs, Duty ≤ 1%	--	120	--	
		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	--	25	--	deg

Rank

 Condition: I_F=20mA

Unit: mW/sr

Bin number	P	Q	R	S
Min	15.0	21.0	30.0	42.0
Max	24.0	34.0	48.0	67.0

勝特力材料 886-3-5753170
 勝特力电子(上海) 86-21-34970699
 勝特力电子(深圳) 86-755-83298787
[Http://www.100y.com.tw](http://www.100y.com.tw)

Typical Electro-Optical Characteristics Curves

Fig.1 Forward Current vs. Ambient Temperature

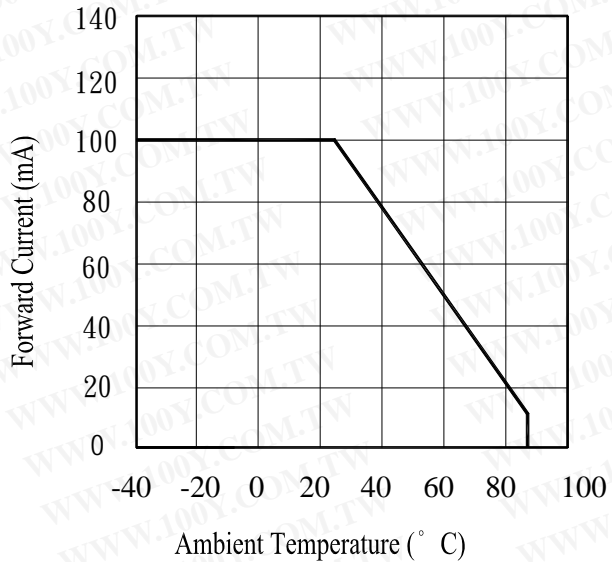


Fig.2 Spectral Distribution

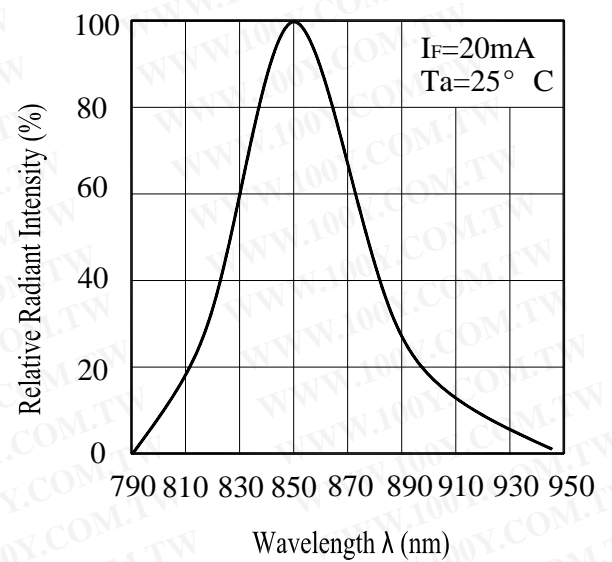


Fig.3 Peak Emission Wavelength vs. Ambient Temperature

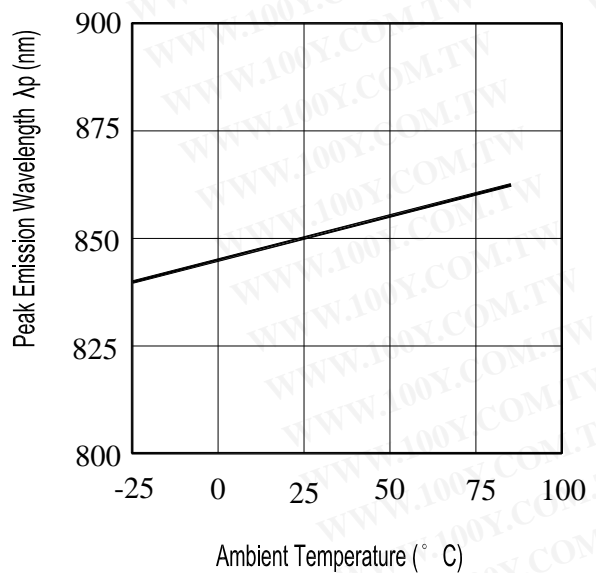
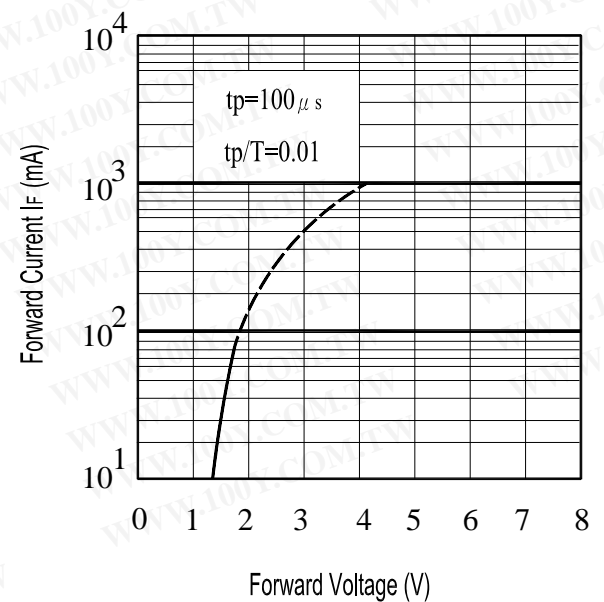


Fig.4 Forward Current vs. Forward Voltage



Typical Electro-Optical Characteristics Curves

Fig.5 Relative Intensity vs. Forward Current

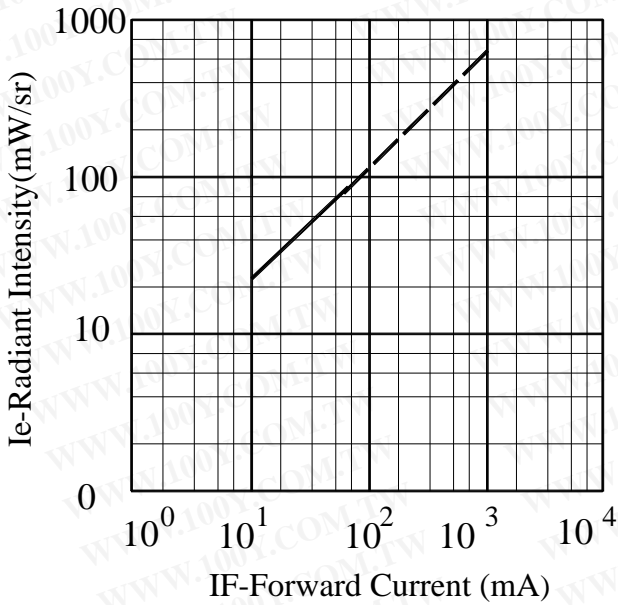


Fig.6 Relative Radiant Intensity vs. Angular Displacement

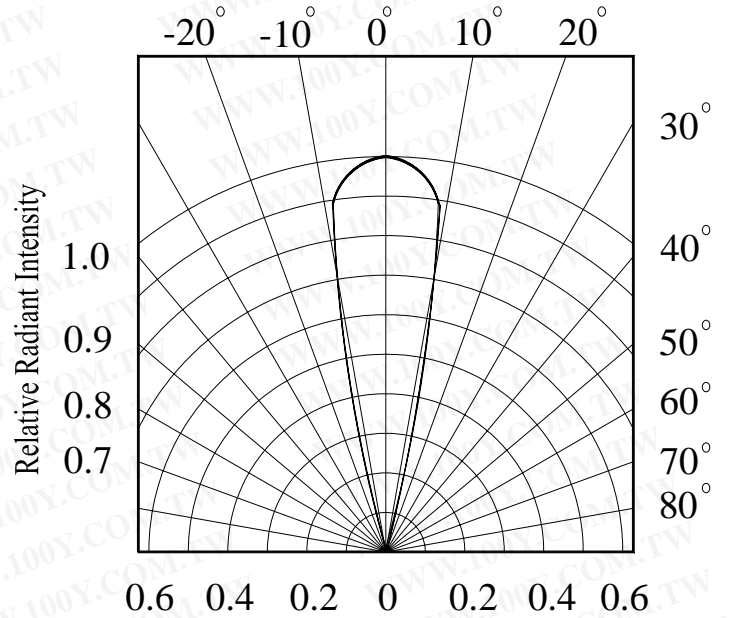


Fig.7 Relative Intensity vs. Ambient Temperature(°C)

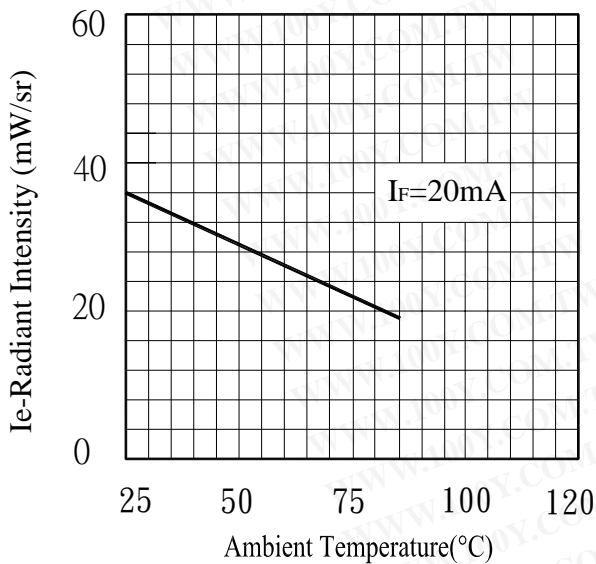
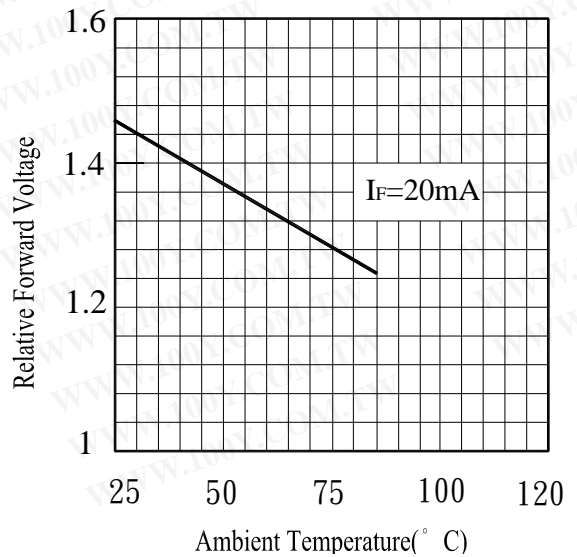


Fig.8 Forward Voltage vs. Ambient Temperature(°C)



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	$E_e \leq L \times 0.8$ $V_F \leq U$ U : Upper Specification Limit L : the initial test value	0/1
2	Temperature Cycle	H : +100°C 15mins \updownarrow 5mins L : -40°C 15mins	300Cycles	22pcs		0/1
3	Thermal Shock	H : +100°C 5mins \updownarrow 10secs L : -10°C 5mins	300Cycles	22pcs		0/1
4	High Temperature Storage	TEMP. : +100°C	1000hrs	22pcs		0/1
5	Low Temperature Storage	TEMP. : -40°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



HIR313C

Packing Quantity Specification

1.500PCS/1Bag , 5Bags/1Box
2.10Boxes/1Carton

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Label Form Specification

EVERLIGHT

CPN:

P/N:



QTY:



LOT NO:



CAT:

HUE:

REF:

CPN: Customer's Production Num

P/N : Production Number

QTY: Packing Quantity

CAT: Ranks

HUE: Peak Wavelength

REF: Reference

LOT No: Lot Number

Notes

1. Above specification may be changed without notice. EVERLIGHT will reserve authority on material change for above specification.
2. When using this product, please observe the absolute maximum ratings and the instructions for using outlined in these specification sheets. EVERLIGHT assumes no responsibility for any damage resulting from use of the product which does not comply with the absolute maximum ratings and the instructions included in these specification sheets.
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