

Technical Data Sheet

5mm Infrared LED, T-1 3/4

HIR8323/C16

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(HIR8323/C16) 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

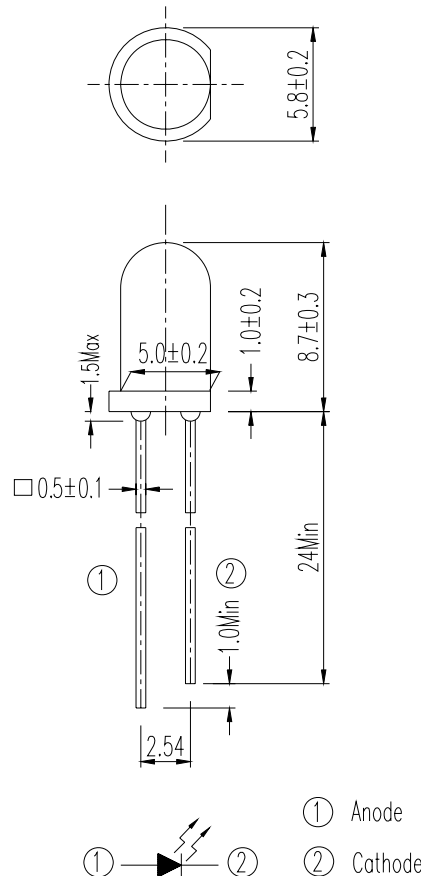
- CCTV
- Infrared applied system



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 $\pm 0.25\text{mm}$

Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Rating	Units
Continuous Forward Current	I _F	100	mA
Peak Forward Current*1	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*2	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	I _E	I _F =20mA	20	30	50	mW/sr
		I _F =100mA Pulse Width ≤ 100 μs, Duty ≤ 1%	--	120	--	
		I _F =1A Pulse Width ≤ 100 μs, Duty ≤ 1%.	--	1200	--	
Peak Wavelength	λ _p	I _F =20mA	--	850	--	nm
Spectral Bandwidth	Δλ	I _F =20mA	--	40	--	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

Rank

Condition : I_F=20mA

Unit : mW/sr

Bin Number	A	B
Min	20	25
Max	30	50

Typical Electro-Optical Characteristics Curves

Fig.1 Forward Current vs. Ambient Temperature

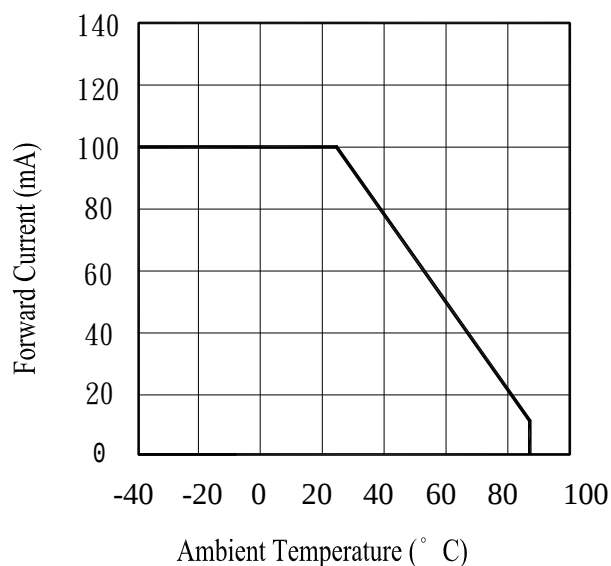


Fig.2 Spectral Distribution

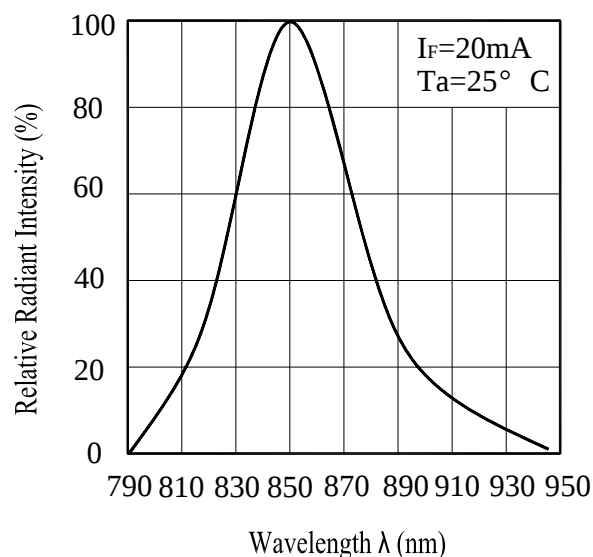


Fig.3 Peak Emission Wavelength Ambient Temperature

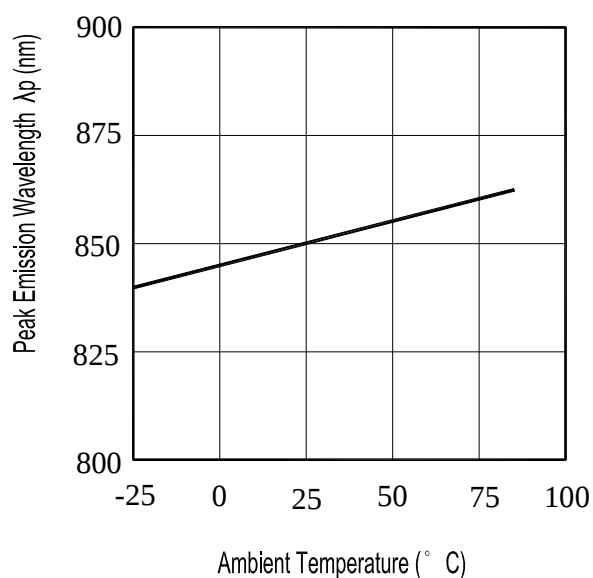
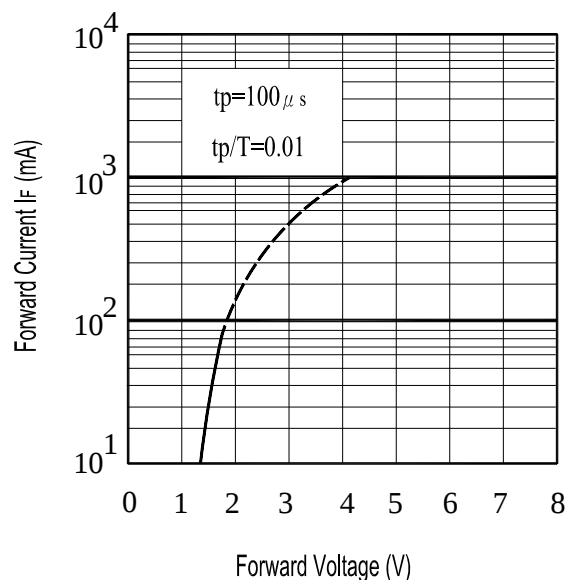


Fig.4 Forward Current vs. Forward Voltage



Typical Electro-Optical Characteristics Curves

Fig.5 Radiant Intensity vs.
Forward Current

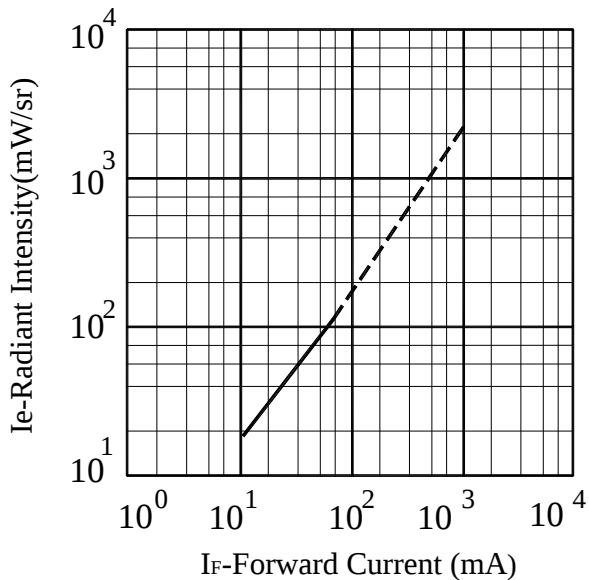


Fig.6 Relative Radiant Intensity vs.
Angular Displacement

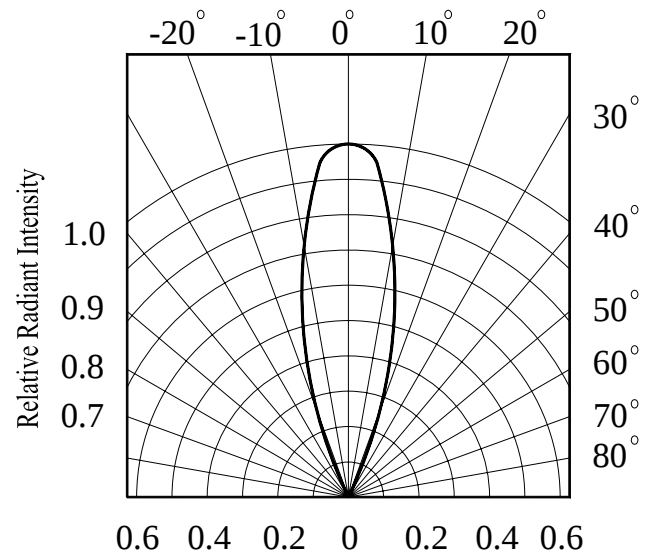


Fig.7 Radiant Intensity vs.
Ambient Temperature(°C)

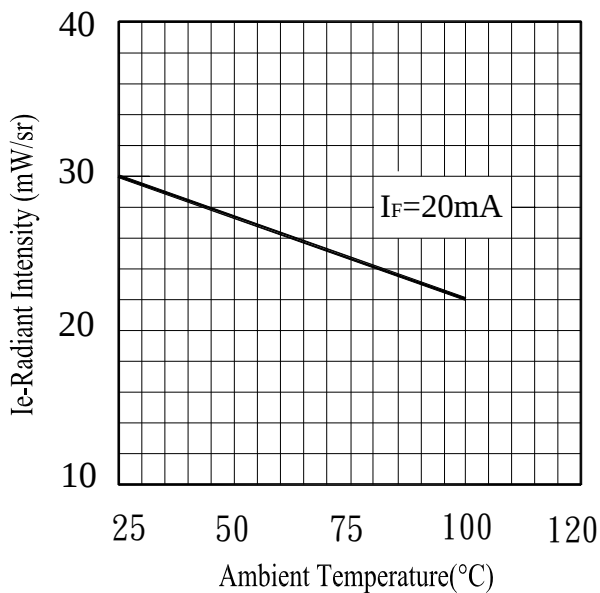
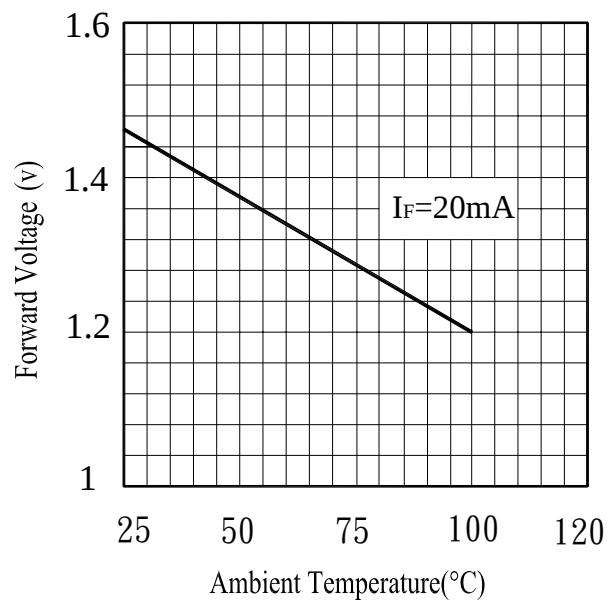


Fig.8 Forward Voltage vs.
Ambient Temperature(°C)



Reliability Test Item And Condition

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

Confidence level : 90%

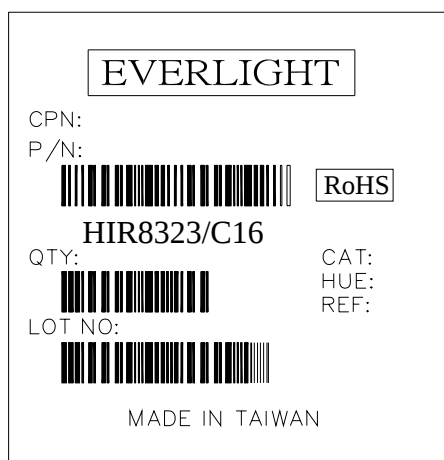
LTPD : 10%

NO.	Item	Test Conditions	Test Hours/ Cycles	Sample Sizes	Failure Judgement Criteria	Ac/Re
1	Solder Heat	TEMP. : $260^{\circ}\text{C} \pm 5^{\circ}\text{C}$	10secs	22pcs		0/1
2	Temperature Cycle	$\begin{array}{l} \text{H : } +100^{\circ}\text{C} \quad 15\text{mins} \\ \updownarrow \quad 5\text{mins} \\ \text{L : } -40^{\circ}\text{C} \quad 15\text{mins} \end{array}$	300Cycles	22pcs	$I_R \geq U \times 2$ $I_E \leq L \times 0.8$ $V_F \geq U \times 1.2$	0/1
3	Thermal Shock	$\begin{array}{l} \text{H : } +100^{\circ}\text{C} \quad 5\text{mins} \\ \updownarrow \quad 10\text{secs} \\ \text{L : } -10^{\circ}\text{C} \quad 5\text{mins} \end{array}$	300Cycles	22pcs	U : Upper Specification	0/1
4	High Temperature Storage	TEMP. : $+100^{\circ}\text{C}$	1000hrs	22pcs	Limit L : Lower	0/1
5	Low Temperature Storage	TEMP. : -40°C	1000hrs	22pcs	Specification Limit	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

Packing Quantity Specification

1.500PCS/1Bag , 5Bags/1Box

2.10Boxes/1Carton

Label Form Specification

The diagram shows a rectangular label with the following layout:

- Top center: **EVERLIGHT** in a rectangular box.
- Below the logo, on the left: CPN: and P/N: (with a small vertical line between them).
- Below P/N: is a large barcode.
- To the right of the large barcode is a box containing **RoHS**.
- Below the large barcode is the text **HIR8323/C16**.
- Below the product code, on the left: QTY: and LOT NO: (with a small vertical line between them).
- Below QTY: is a medium-sized barcode.
- To the right of the medium barcode are the labels CAT:, HUE:, and REF: stacked vertically.
- Below LOT NO: is a large barcode.
- At the bottom center: **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

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.
3. These specification sheets include materials protected under copyright of EVERLIGHT corporation. Please don't reproduce or cause anyone to reproduce them without EVERLIGHT's consent.

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