



# Technical Data Sheet

## High Power Infrared LED

**Preliminary**

### HIR35-03C



#### Features

- Designed for High Current Operation.
- High radiant intensity
- Peak wavelength  $\lambda_p=850\text{nm}$
- Low forward voltage
- Packaged in Tubes for Use with Automatic Insertion Equipment.
- Pb free
- The product itself will remain within RoHS compliant version.

#### Descriptions

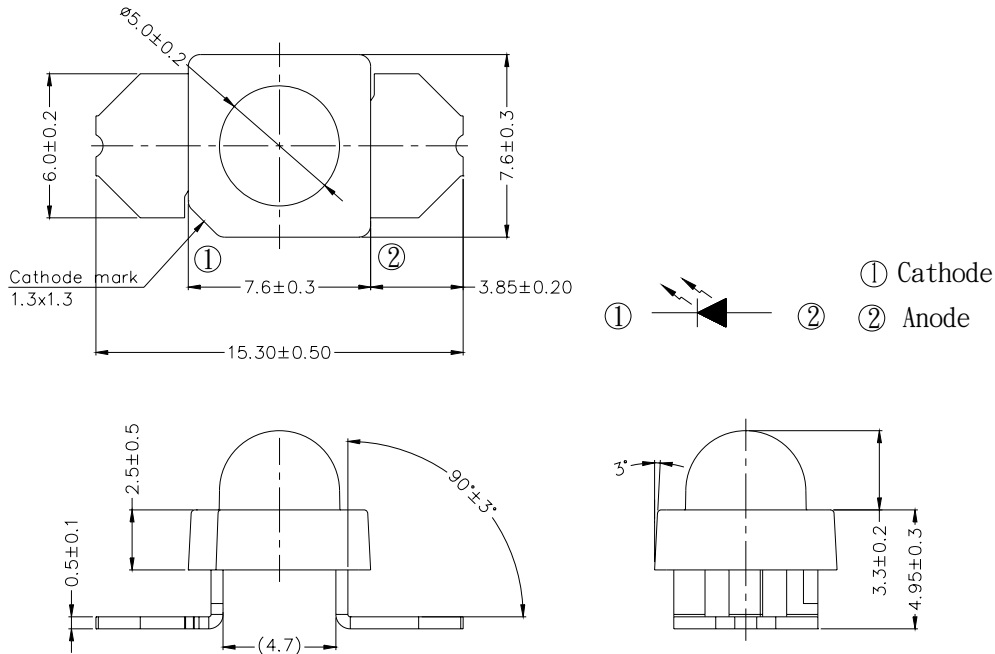
- EVERLIGHT'S Infrared Emitting Diode(HIR35-03C) is a high intensity diode , molded in a water clear plastic package.
- The device is spectrally matched with phototransistor , photodiode and infrared receiver module.

#### Applications

- CCD Camera
- Night Vision
- 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(@DC)	$I_F$	150	mA
Reverse Voltage	$V_R$	5	V
Operating Temperature	$T_{opr}$	-40 ~ +85	°C
Storage Temperature	$T_{stg}$	-40 ~ +85	°C
Thermal resistance, junction to heat-sink	$R_{th}$	100	K/W
Soldering Temperature*2	$T_{sol}$	260	°C
Power Dissipation at(or below) 25°C Free Air Temperature	$P_d$	300	mW

**Notes:** \*1: $I_{FP}$  Conditions--Pulse Width  $\leq 100 \mu s$  and Duty  $\leq 1\%$ .

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

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

Parameter	Symbol	Condition	Min.	Typ.	Max.	Units
Radiant Intensity	I <sub>e</sub>	I <sub>F</sub> =20mA	11	15	--	mW/sr
		I <sub>F</sub> =150mA	--	100	--	
		I <sub>F</sub> =400mA (@DC Continue 1 sec)	--	300	--	
Peak Wavelength	λ <sub>p</sub>	I <sub>F</sub> =20mA	--	850	--	nm
Spectral Bandwidth	Δλ	I <sub>F</sub> =20mA	--	40	--	nm
Forward Voltage	V <sub>F</sub>	I <sub>F</sub> =20mA	--	1.35	1.7	V
		I <sub>F</sub> =150mA	--	1.50	2.1	
		I <sub>F</sub> =400mA (@DC Continue 1 sec)	--	1.80	2.5	
Reverse Current	I <sub>R</sub>	V <sub>R</sub> =5V	--	--	10	μA
View Angle	2θ <sub>1/2</sub>	I <sub>F</sub> =20mA	--	30	--	deg

**Typical Electro-Optical Characteristics Curves**

Fig.1 Forward Current vs. Ambient Temperature

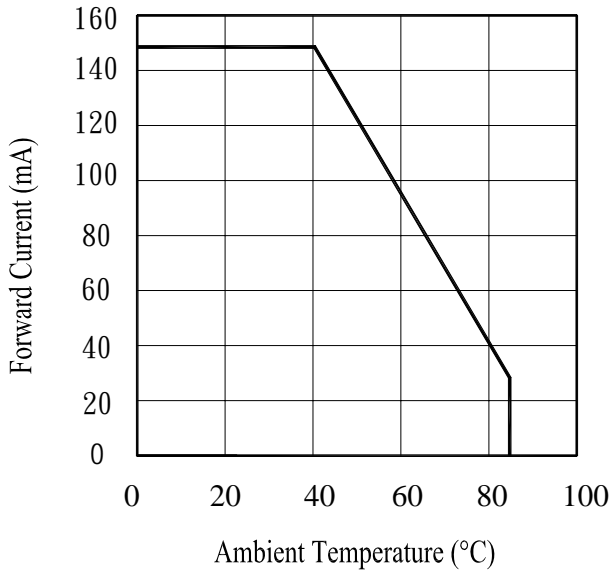


Fig.2 Spectral Distribution

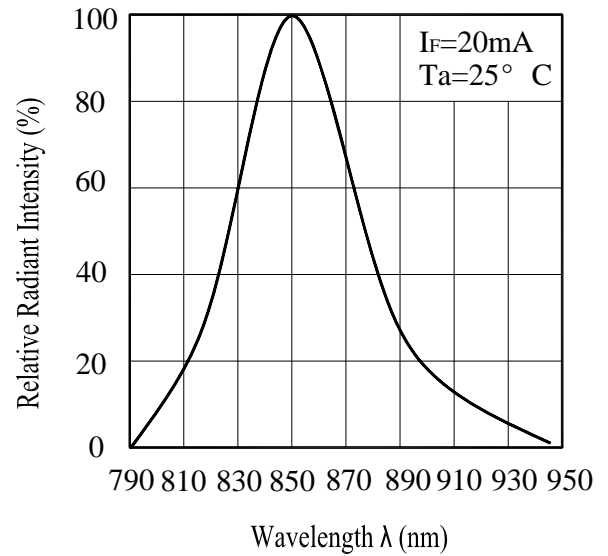


Fig.3 Peak Emission Wavelength vs. Ambient Temperature

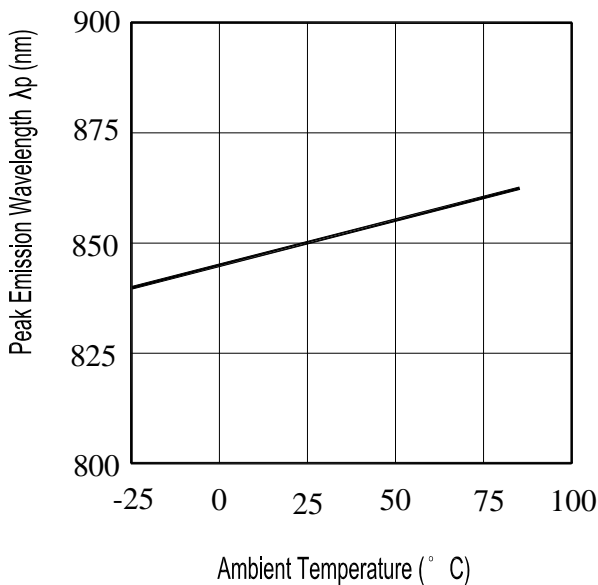
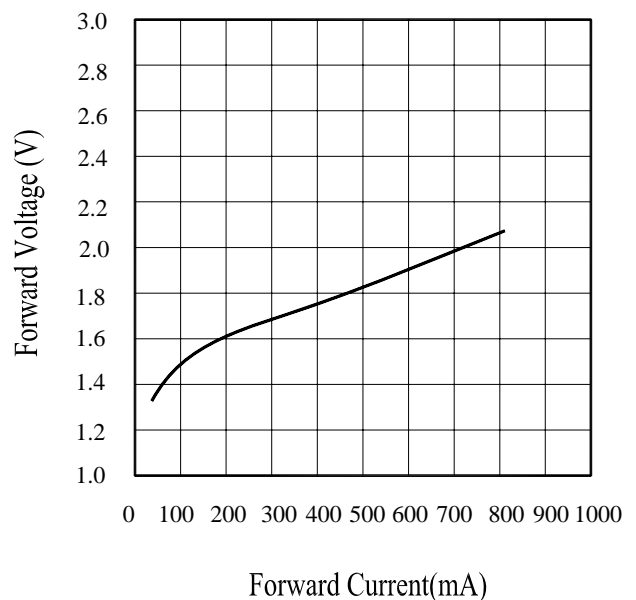


Fig.4 Forward Current vs. Forward Voltage



**Typical Electro-Optical Characteristics Curves**

Fig.5 Relative Intensity vs.  
Forward Current

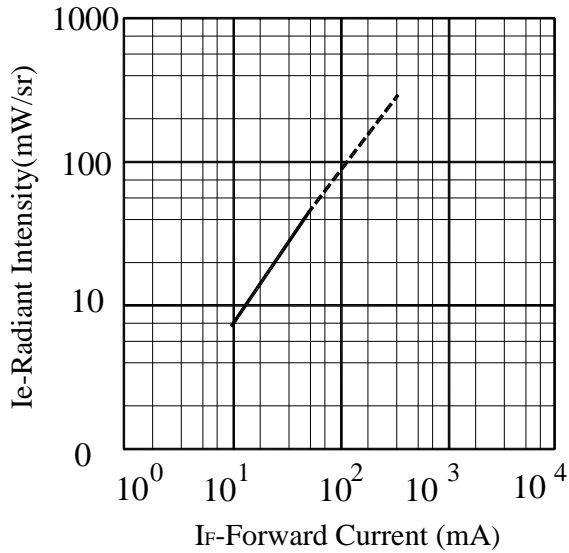
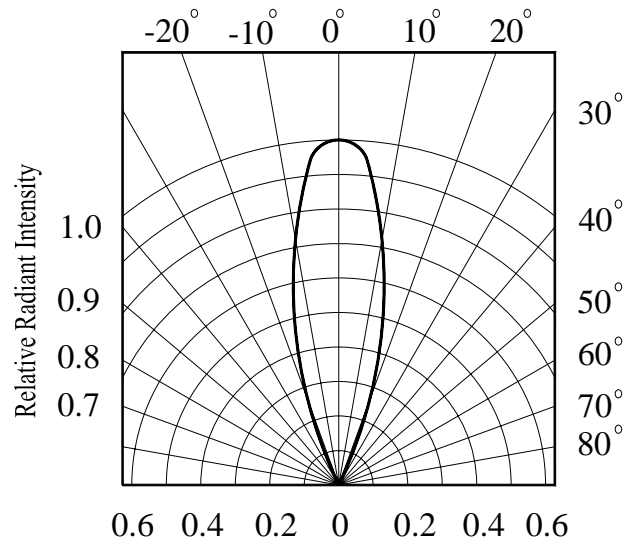


Fig.6 Relative Radiant Intensity vs.  
Angular Displacement



**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 : +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



## HIR35-03C

### Packing Quantity Specification

1.60PCS/1Tube , 30Tubes/1Box or 105Tubles/1Box

### Label Form Specification(For tube)

	PART NO:	QTY:
	LOT NO:	CAT:

### Label Form Specification (For box)

EVERLIGHT

CPN:  
P/N:  
QTY:  
LOT NO:

RoHS

HIR35-03C

CAT:  
HUE:  
REF:

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.
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