

EVERLIGHT

Technical Data Sheet

High Power Infrared LED

HIR36-01C/S32

Features

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



Descriptions

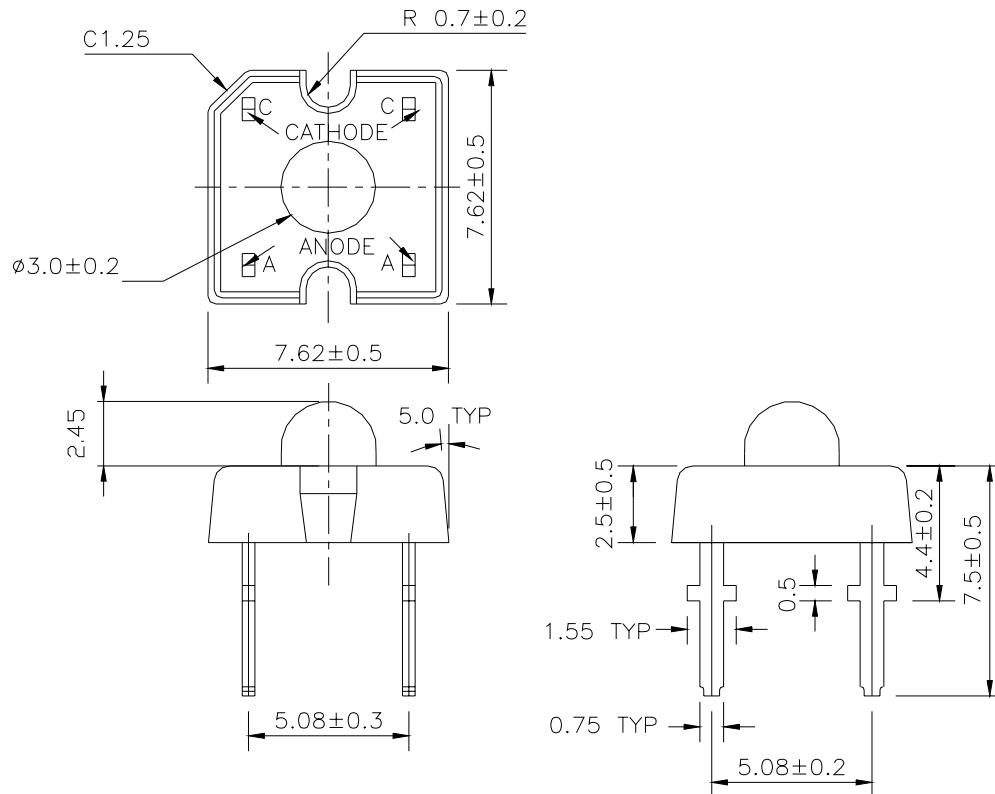
- EVERLIGHT'S Infrared Emitting Diode(HIR36-01C/S32) is a high intensity diode, molded in a water clear plastic package.
- The device is spectrally matched with phototransistor, photodiode and infrared receiver module.

Applications

- CCTV
- Infrared applied system

Device Selection Guide

LED Part No.	Chip	Lens Color
	Material	
HIR	AlGaAs	Water Clear

Package Dimensions


- Notes:** 1.All dimensions are in millimeters
2.Tolerances unless dimensions $\pm 0.25\text{mm}$

Absolute Maximum Ratings ($T_a=25^\circ\text{C}$)

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}	$-40 \sim +85$	$^\circ\text{C}$
Storage Temperature	T_{stg}	$-40 \sim +100$	$^\circ\text{C}$
Soldering Temperature*2	T_{sol}	260	$^\circ\text{C}$
Power Dissipation at(or below) 25 $^\circ\text{C}$ Free Air Temperature	P_d	200	mW

Notes: *1: I_{FP} Conditions--Pulse Width $\leq 100\ \mu\text{s}$ 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	15	29	--	mW/sr
		I _F =100mA Pulse Width ≤ 100 μs, Duty ≤ 1%	--	150	--	
Peak Wavelength	λ _p	I _F =20mA	--	850	--	nm
Spectral Bandwidth	Δλ	I _F =20mA	--	50	--	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	
Optical Rise Time	t _r	I _F =20mA	--	11	--	ns
Optical Fall Time	t _f	I _F =20mA	--	7	--	ns
Reverse Current	I _R	V _R =5V	--	--	10	μA
View Angle	2θ _{1/2}	I _F =20mA	--	20	--	deg

Rank

Condition: I_F=20mA

Unit: mW/sr

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

Typical Electro-Optical Characteristics Curves

**Fig.1 Forward Current vs.
Ambient Temperature**

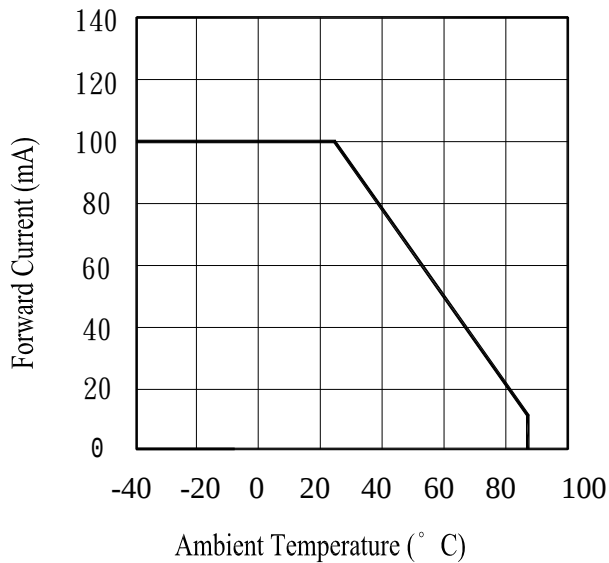
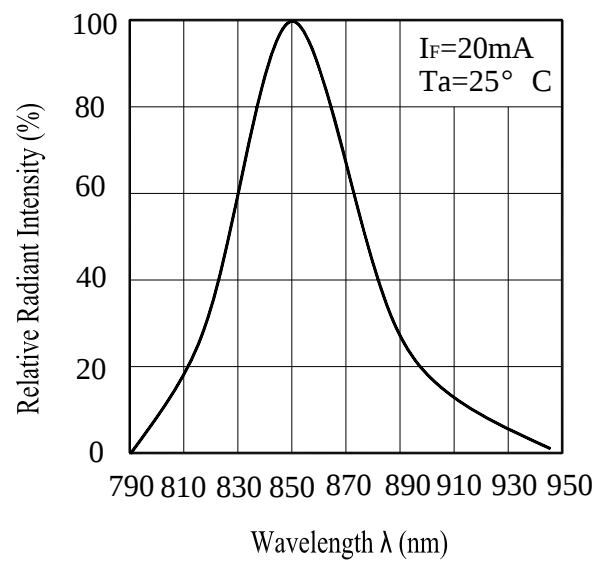
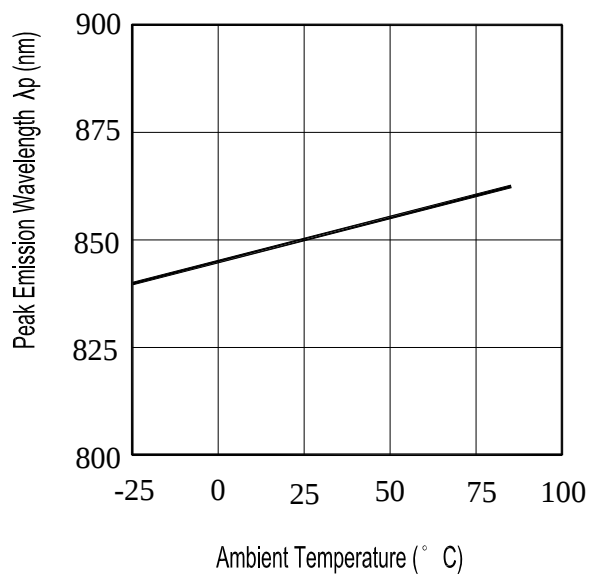


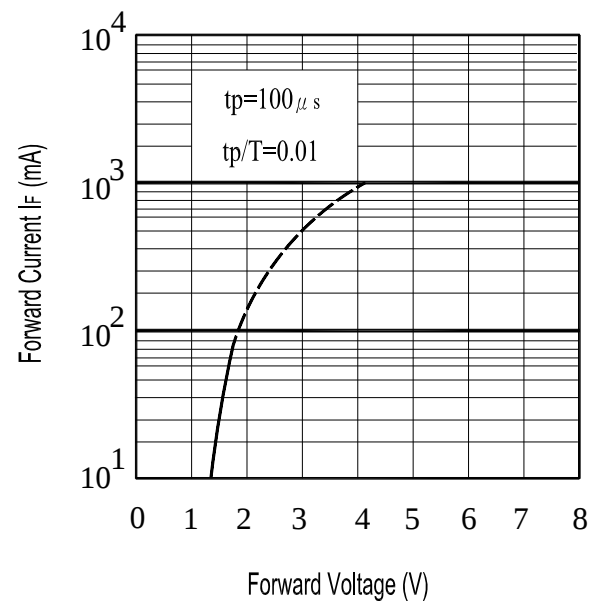
Fig.2 Spectral Distribution



**Fig.3 Peak Emission Wavelength
Ambient Temperature**



**Fig.4 Forward Current
vs. Forward Voltage**



Typical Electro-Optical Characteristics Curve

Fig.5 Relative Intensity vs.
Forward Current

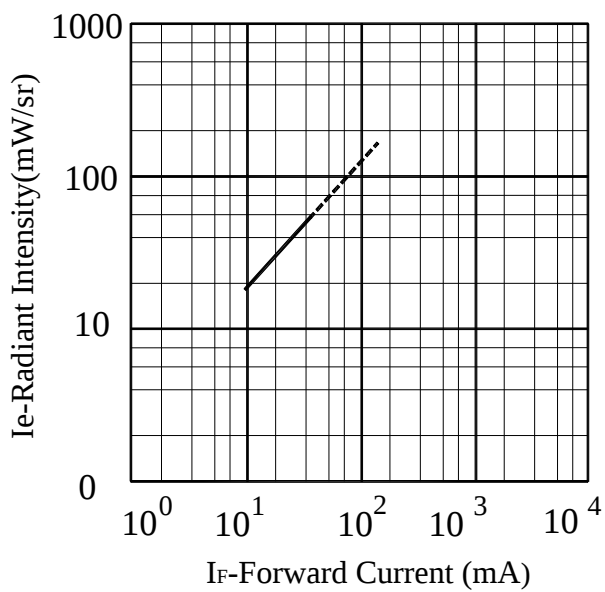
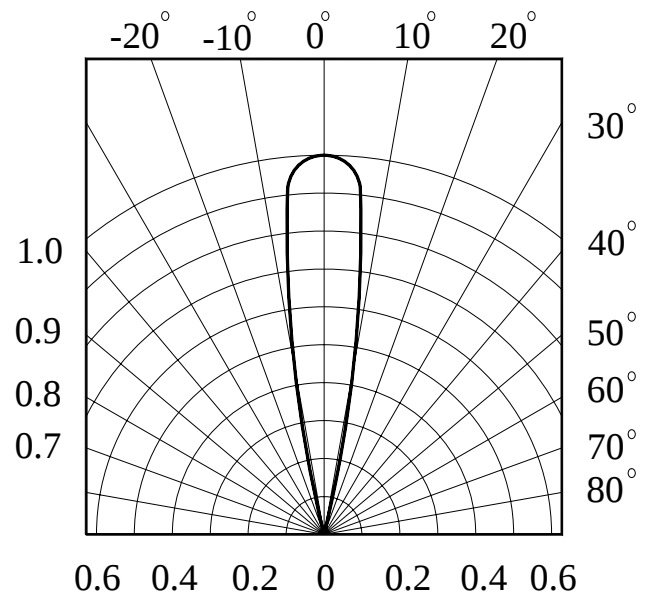


Fig.6 Relative Radiant Intensity vs.
Angular Displacement



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	$I_R \geq U \times 2$ $I_e \leq L \times 0.8$ $V_F \geq U \times 1.2$ U : Upper Specification	0/1
2	Temperature Cycle	H : +100°C 15mins ↑ 5mins ↓ 15mins L : -40°C	50Cycles	22pcs		0/1
3	Thermal Shock	H : +100°C 5mins ↑ 10secs ↓ 5mins L : -10°C	50Cycles	22pcs		0/1
4	High Temperature Storage	TEMP. : +100°C	1000hrs	22pcs		0/1
5	Low Temperature Storage	TEMP. : -40°C	1000hrs	22pcs	Limit L : Lower Specification Limit	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



HIR36-01C/S32

Packing Quantity Specification

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

Label Form Specification(For tube)

	PART NO:	QTY:
	LOT NO:	CAT:

Label Form Specification (For box)

CPN:	
P/N:	
HIR36-01C/S32	
QTY:	CAT:
	HUE:
LOT NO:	REF:
MADE IN TAIWAN	

CPN: Customer's Production Number

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.

EVERLIGHT ELECTRONICS CO., LTD.
Office: No 25, Lane 76, Sec 3, Chung Yang Rd,
Tucheng, Taipei 236, Taiwan, R.O.C

Tel: 886-2-2267-2000, 2267-9936
Fax: 886-2267-6244, 2267-6189, 2267-6306
<http://www.everlight.com>