

Technical Data Sheet

1.5mm Side Face Infrared LED

IR928-6C-F



Features

- High reliability
- High radiant intensity
- Peak wavelength λ p=940nm
- 2.54mm Lead spacing
- Low forward voltage
- Pb.Free
- This product itself will remain within RoHS compliant version.

Descriptions

- EVERLIGHT's Infrared Emitting Diode (IR928-6C-F) is a high intensity diode, molded in a water clear plastic package.
- The miniature side- facing device has a chip, that emits radiation from the side of the clear package.

Applications

- Mouse
- · Optoelectronic switch
- Infrared applied system

Device Selection Guide

I ED Dowt No	Chip	Lens Color	
LED Part No.	Material		
IR928-6C-F	GaAlAs	Water clear	

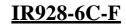
Everlight Electronics Co., Ltd. Device No: CDIR-092-007

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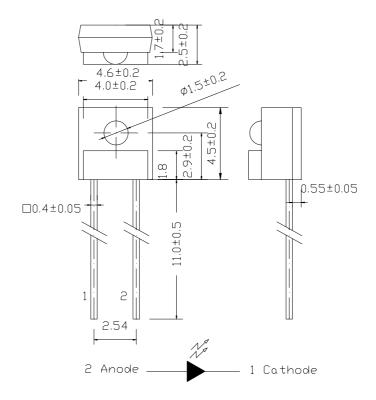
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Package Dimensions



Notes: 1.All dimensions are in millimeters

2.Tolerances unless dimensions ±0.25mm

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

Parameter	Symbol	Rating	Units
Continuous Forward Current	$ m I_F$	50	mA
Peak Forward Current(*1)	I_{FP}	1.0	A
Reverse Voltage	V_R	5	V
Operating Temperature	T_{opr}	-25 ~ +85	$^{\circ}$
Storage Temperature	T_{stg}	-40 ~ +85	$^{\circ}\!\mathbb{C}$
Soldering Temperature(*2)	T_{sol}	260	$^{\circ}\!\mathbb{C}$
Power Dissipation at(or below) 25°C Free Air Temperature	P _d	75	mW

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

*2:Soldering time ≤ 5 seconds.

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Electro-Optical Characteristics (Ta=25 $^{\circ}$ C)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Units
Light Current	Ic(ON)	$I_F=4\text{mA}, V_{CE}=3.5V$	265		1870	μ A
Peak Wavelength	λр	I _F =20mA		940		nm
Spectral Bandwidth	Δλ	I _F =20mA		50		nm
Forward Voltage	V_{F}	I _F =20mA		1.2	1.5	V
Reverse Current	I_R	V _R =5V			10	μΑ
View Angle	2 \theta 1/2	$I_F=20\text{mA}$		40		deg

Wide Rank

Parameter	Symbol	Min	Max	Unit	Test Condition
5-2	Ic(ON)	1053	1870	μ A	$I_F=4\text{mA}, V_{CE}=3.5\text{V}$
6-1	Ic(ON)	650	1274	μ A	$I_F=4\text{mA}, V_{CE}=3.5\text{V}$
6-2	Ic(ON)	465	750	μ A	$I_F=4\text{mA}, V_{CE}=3.5\text{V}$
7-1	Ic(ON)	347	550	μ A	$I_F=4\text{mA}, V_{CE}=3.5\text{V}$
7-2	Ic(ON)	306	441	μ A	$I_F=4\text{mA}, V_{CE}=3.5\text{V}$
7-3	Ic(ON)	265	358	μ A	$I_F=4\text{mA}, V_{CE}=3.5\text{V}$

Thin Rank

Color Code	Ranks	Symbol	Min	Max	Unit	Test Condition
Yellow	E3	Ic(ON)	286	431	μ A	$I_F=4mA, V_{CE}=3.5V$
Silver	E4	Ic(ON)	357	519	μ A	$I_F=4mA, V_{CE}=3.5V$
Green	E5	Ic(ON)	428	608	μ A	$I_F=4mA, V_{CE}=3.5V$
Purple	E6	Ic(ON)	500	696	μ A	I _F =4mA,V _{CE} =3.5V
White	E7	Ic(ON)	571	784	μ A	$I_F=4mA, V_{CE}=3.5V$
Brown	E8	Ic(ON)	643	872	μ A	$I_F=4mA, V_{CE}=3.5V$
Orange	E9	Ic(ON)	714	960	μ A	$I_F=4mA, V_{CE}=3.5V$

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Typical Electro-Optical Characteristics Curves

Fig.1 Forward Current vs.

Ambient Temperature

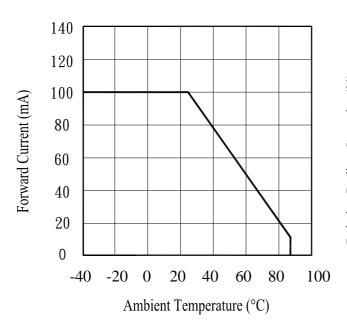


Fig.2 Spectral Distribution

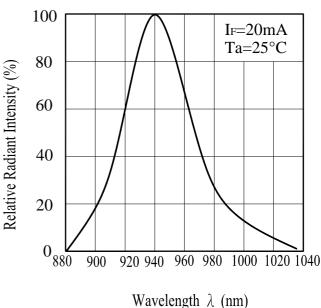


Fig.3 Peak Emission Wavelength

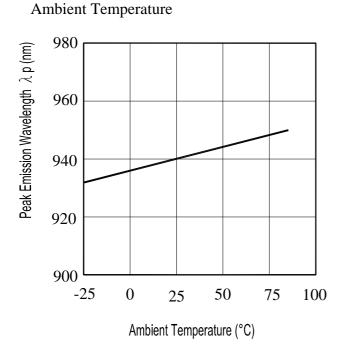
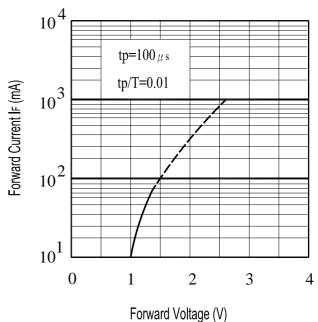


Fig.4 Forward Current vs. Forward Voltage



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Typical Electro-Optical Characteristics Curves

Fig.5 Forward Voltage vs.

Ambient Temperature

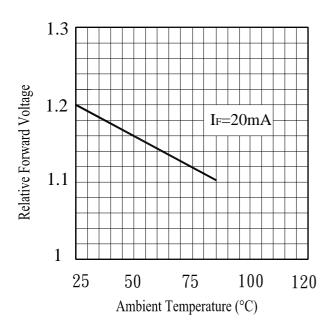
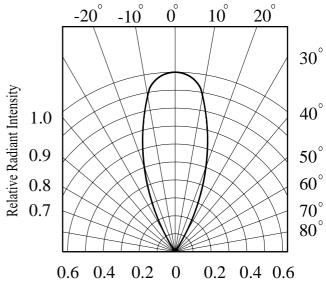


Fig.6 Relative Radiant Intensity vs.

Angular Displacement



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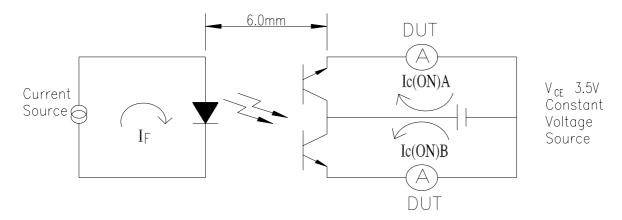
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Test Method For I_{C(ON)}:

Condition: $I_F=4mA, V_{CE}=3.5V$

The intensity testing method for infrared emitting diode



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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		0/1
2	Temperature Cycle	$H: +100^{\circ}C$ 15mins	300Cycles	22pcs	$I_R \ge U \times 2$	0/1
		5mins			$Ee \leq L \times 0.8$	
		L:-40°C 15mins	S		$V_F \ge U \times 1.2$	
3	Thermal Shock	H :+100°C ▲ 5mins	300Cycles	22pcs		0/1
		▼ 10secs	S		U: Upper	
		L :-10°C 5mins			Specification	
4	High Temperature	TEMP. : +100°C	1000hrs	22pcs	Limit	0/1
	Storage				L: Lower	
5	Low Temperature	TEMP. : -40°C	1000hrs	22pcs	Specification	0/1
	Storage				Limit	
6	DC Operating Life	$I_F=20mA$	1000hrs	22pcs		0/1
7	High Temperature/	85°C /85% R.H	1000hrs	22pcs		0/1
	High Humidity					

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Packing Quantity Specification

- 1. 1000PCS/1Bag,10Bag/1Box
- 2. 10Boxes/1Carton

Label Form Specification

EVERLIGHT

CPN: P/N:

IR928-6C-F

LOT NO:

CAT: HUE: REF:



CPN: Customer's Production Number

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.
- 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

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