

Technical Data Sheet

Side Face Infrared LED

IR928-6C

Features

- High reliability
- High radiant intensity
- Peak wavelength $\lambda_p=940\text{nm}$
- 2.54mm Lead spacing
- Low forward voltage
- Pb.Free
- This product itself will remain within RoHS compliant version.



Descriptions

- EVERLIGHT's Infrared Emitting Diode (IR928-6C) 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.

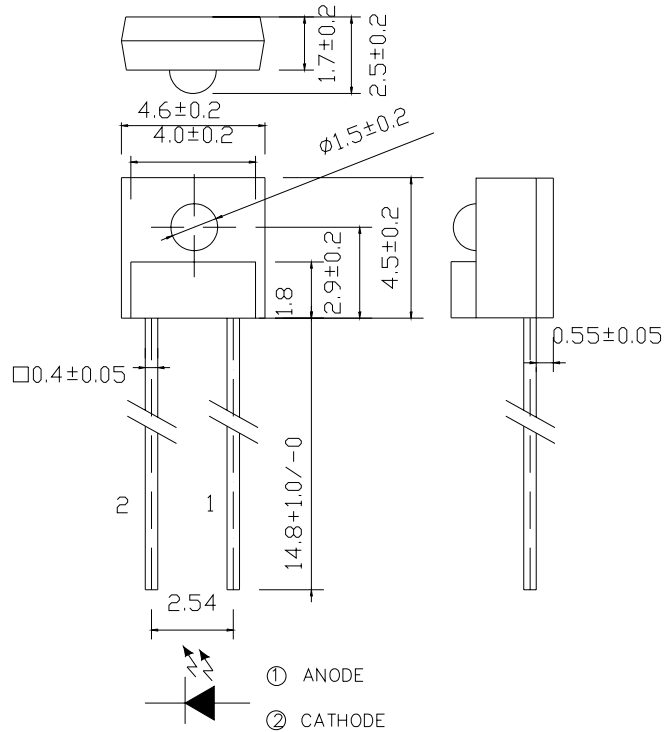
Applications

- Mouse
- Optoelectronic switch
- Infrared applied system

Device Selection Guide

LED Part No.	Chip	Lens Color
	Material	
IR928-6C	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	50	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
Light Current	I _c (ON)	I _F =4mA, V _{CE} =3.5V	306	--	1700	μA
Peak Wavelength	λ _p	I _F =20mA	--	940	--	nm
Spectral Bandwidth	Δλ	I _F =20mA	--	50	--	nm
Forward Voltage	V _F	I _F =20mA	--	1.2	1.6	V
Reverse Current	I _R	V _R =5V	--	--	10	μA
View Angle	2θ 1/2	I _F =20mA	--	40	--	deg

Wide Rank

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

Parameter	Symbol	Min	Max	Unit	Test Condition
5-2	I _c (ON)	1053	1870	μA	I _F =4mA, V _{CE} =3.5V
6-1	I _c (ON)	650	1274	μA	I _F =4mA, V _{CE} =3.5V
6-2	I _c (ON)	465	750	μA	I _F =4mA, V _{CE} =3.5V
7-1	I _c (ON)	347	550	μA	I _F =4mA, V _{CE} =3.5V
7-2	I _c (ON)	306	441	μA	I _F =4mA, V _{CE} =3.5V

Typical Electro-Optical Characteristics Curves

Fig.1 Forward Current vs. Ambient Temperature

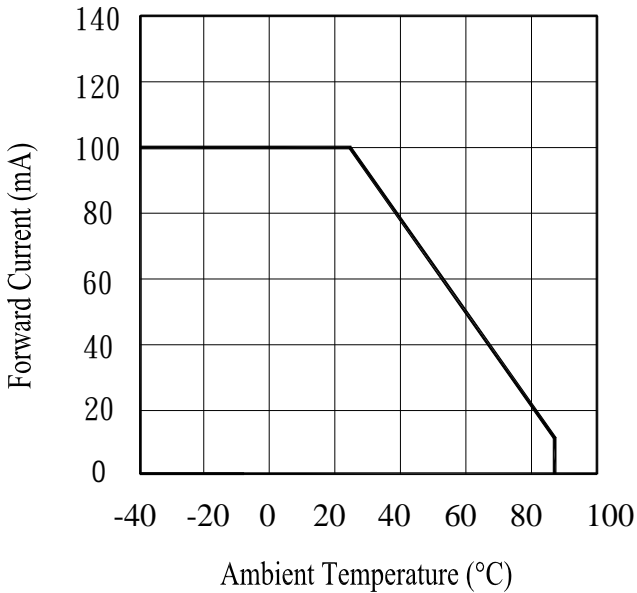


Fig.2 Spectral Distribution

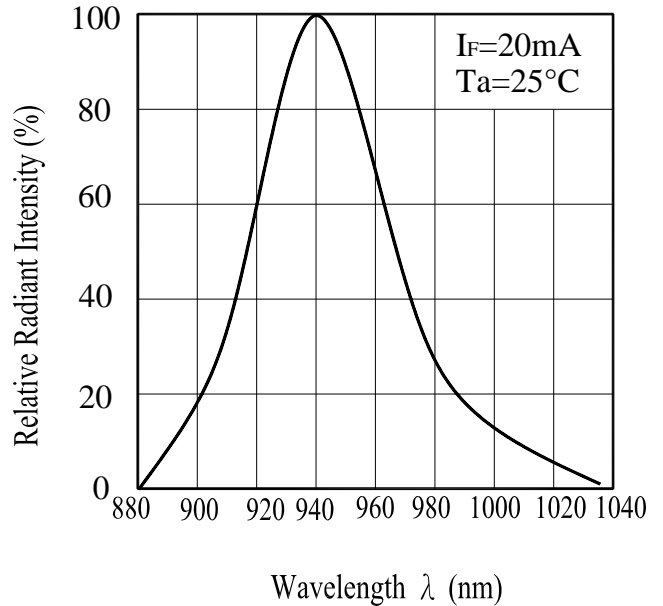


Fig.3 Peak Emission Wavelength vs. Ambient Temperature

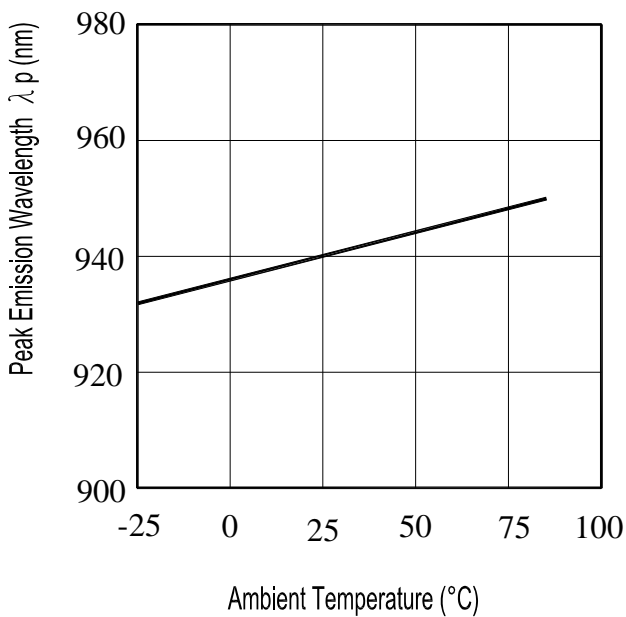
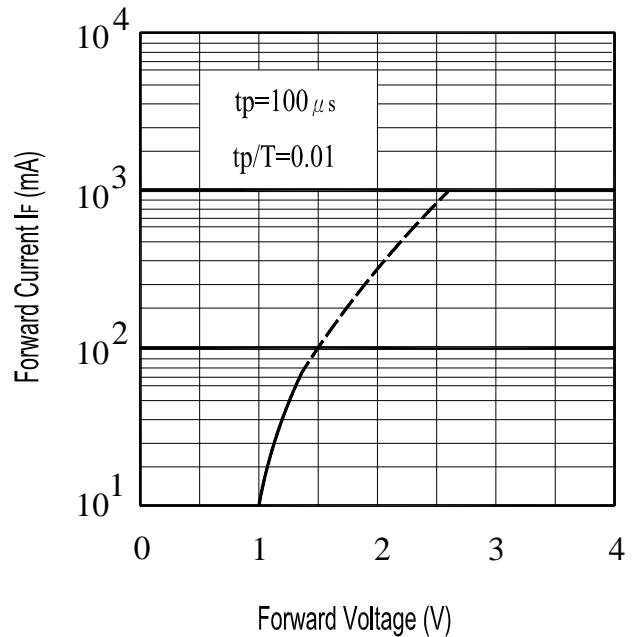


Fig.4 Forward Current vs. Forward Voltage



Typical Electro-Optical Characteristics Curves

Fig.5 Forward Voltage vs. Ambient Temperature

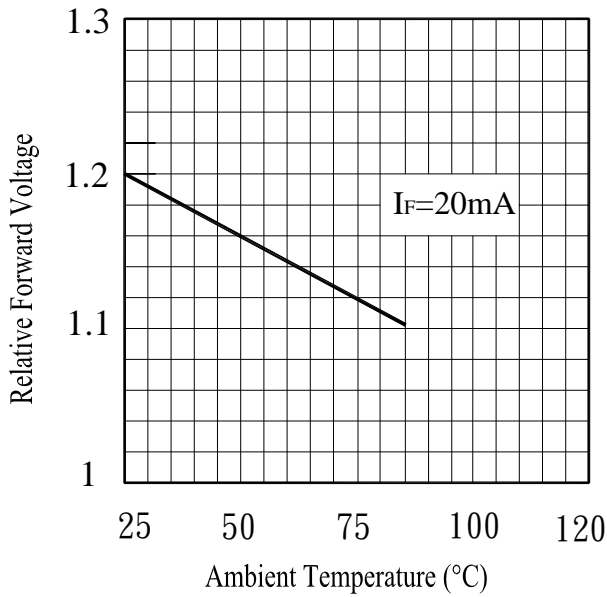
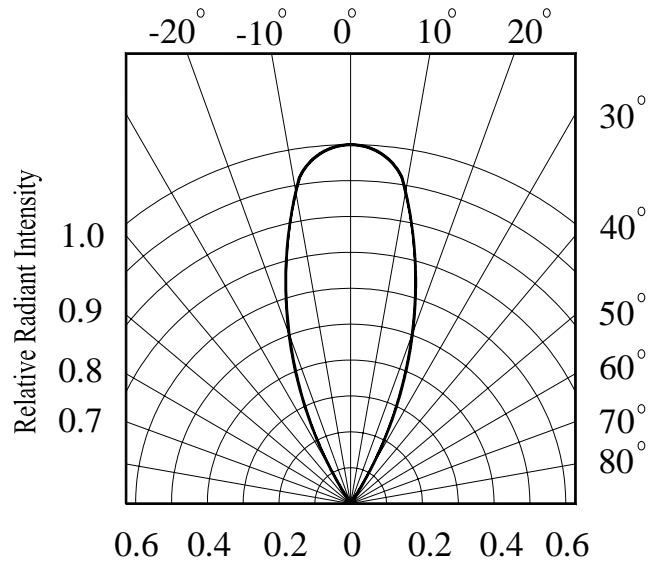


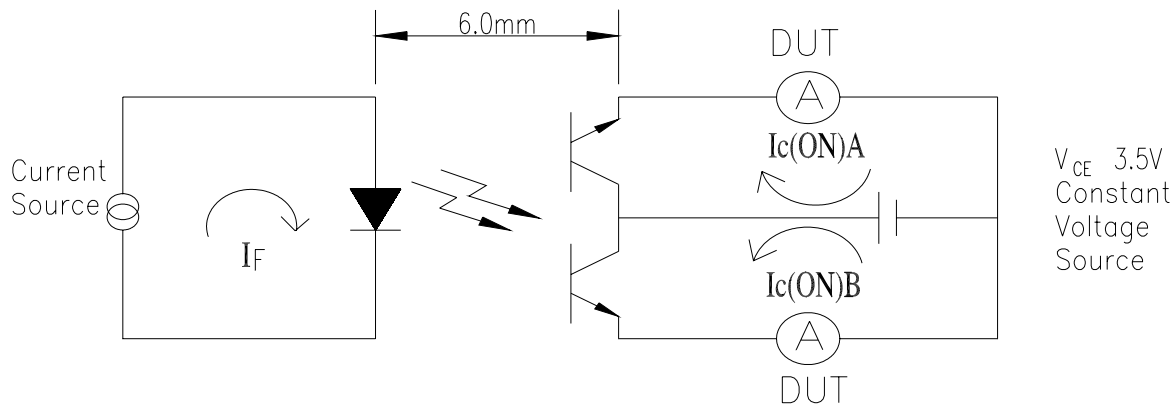
Fig.6 Relative Radiant Intensity vs. Angular Displacement



Test Method For $I_{c(ON)}$:

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

The intensity testing method for infrared emitting diode



To Distinguish Intensity:

Narrow Rank

Parameter	Symbol	Min	Max	Unit	Test Condition
E1	$I_{c(ON)}$	143	255	μA	$I_F=4mA, V_{CE}=3.5V$
E2	$I_{c(ON)}$	214	343	μA	$I_F=4mA, V_{CE}=3.5V$
E3	$I_{c(ON)}$	286	431	μA	$I_F=4mA, V_{CE}=3.5V$
E4	$I_{c(ON)}$	357	519	μA	$I_F=4mA, V_{CE}=3.5V$
E5	$I_{c(ON)}$	428	608	μA	$I_F=4mA, V_{CE}=3.5V$
E6	$I_{c(ON)}$	500	696	μA	$I_F=4mA, V_{CE}=3.5V$
E7	$I_{c(ON)}$	571	784	μA	$I_F=4mA, V_{CE}=3.5V$
E8	$I_{c(ON)}$	643	872	μA	$I_F=4mA, V_{CE}=3.5V$
E9	$I_{c(ON)}$	714	960	μA	$I_F=4mA, V_{CE}=3.5V$
E10	$I_{c(ON)}$	785	1049	μA	$I_F=4mA, V_{CE}=3.5V$
E11	$I_{c(ON)}$	857	1137	μA	$I_F=4mA, V_{CE}=3.5V$

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	$I_R \geq U \times 2$ $E_e \leq L \times 0.8$ $V_F \geq U \times 1.2$ U : Upper Specification Limit L : Lower Specification Limit	0/1
2	Temperature Cycle	H : $+100^{\circ}\text{C}$ 15mins \updownarrow 5mins L : -40°C 15mins	300Cycles	22pcs		0/1
3	Thermal Shock	H : $+100^{\circ}\text{C}$ 5mins \updownarrow 10secs L : -10°C 5mins	300Cycles	22pcs		0/1
4	High Temperature Storage	TEMP. : $+100^{\circ}\text{C}$	1000hrs	22pcs		0/1
5	Low Temperature Storage	TEMP. : -40°C	1000hrs	22pcs		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. 1000PCS/1Bag,8Bag/1Box
2. 10Boxes/1Carton

Label Form Specification

EVERCOLORS	
CPN:	
P/N:	
	
QTY:	IR928-6C
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. EVERCOLORS 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. EVERCOLORS 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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