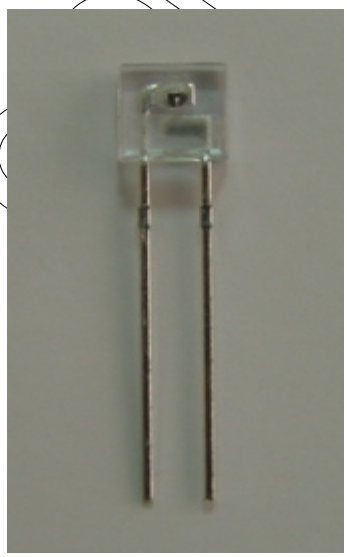
Technical Data Sheet

1.5mm Side Looking Infrared Emitting Diode

IR928-6C



Features

- Low forward voltage
- Peak wavelength λp=940nm
- High reliability

Descriptions

The IR928-6C is a GaAs(GaAlAs) infrared emitting diode. The miniature side-facing device is molded in a water clear plastic package.
The device is spectrally matched with phototransistor.

Applications

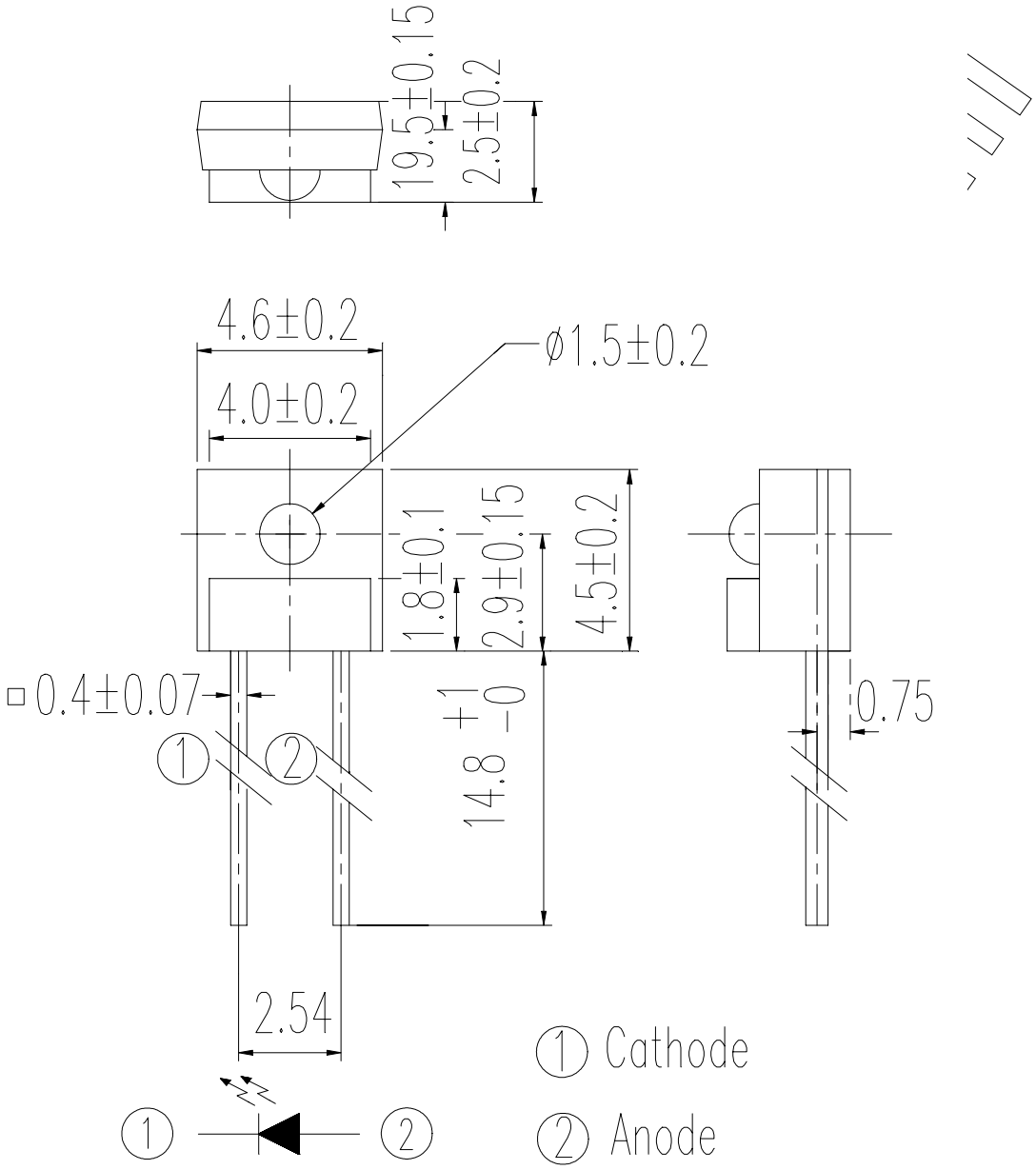
- Mouse
- Optoelectronic switch
- Floppy disk drive
- Photo interrupter

Device Selection Guide

LED Part No.	Chip Material	Lens Color
IR	GaAs(GaAlAs)	Water clear

Device No:DIR-092-107

Package Dimensions



Notes: 1.All dimensions are in millimeters
2.Tolerances unless dimensions ± 0.1mm

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Absolute Maximum Ratings (Ta=25℃)

Parameter	Symbol	Rating	Units
Continuous Forward Current	I_F	50	mA
Peak Forward Current	I_{FP}	1.0	A
Reverse Voltage	V_R	5	V
Operating Temperature	T_{opr}	-25 ~ +85	℃
Storage Temperature	T_{stg}	-40 ~ +85	℃
Soldering Temperature	T_{sol}	260	℃
Power Dissipation at(or below) 25℃ Free Air Temperature	P_d	75	mW

Notes: *1:I_{FP} Conditions--Pulse Width≦100 μs and Duty≦1%.

*2:Soldering time≦5 seconds.

Electro-Optical Characteristics (Ta=25℃)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Units
Collector current	$I_{C(ON)}$	V_{CE}=3.5V,I_F=4mA	140	--	1300	μA
Peak Wavelength	λp	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	2θ1/2	I_F=20mA	--	40	--	deg

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Typical Electro-Optical Characteristics Curves

Fig. 1 Forward Current vs. Ambient Temperature

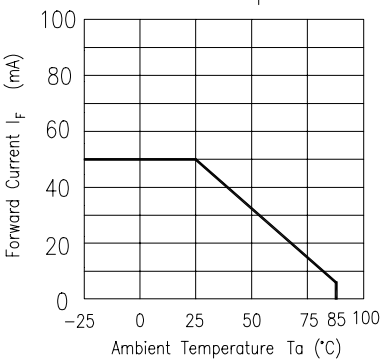


Fig. 2 Spectral Distribution

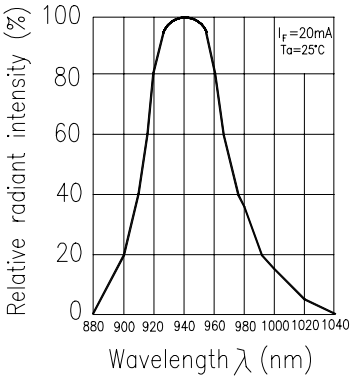


Fig. 3 Peak Emission Wavelength vs. Ambient Temperature

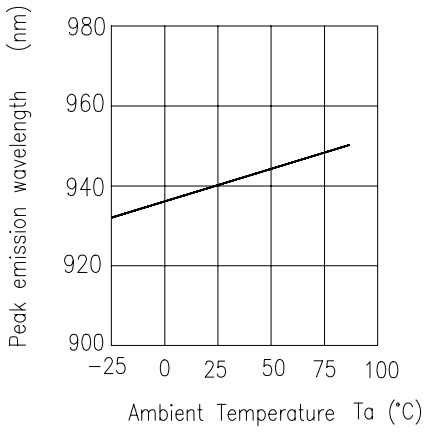


Fig. 4 Forward Current vs. Forward Voltage

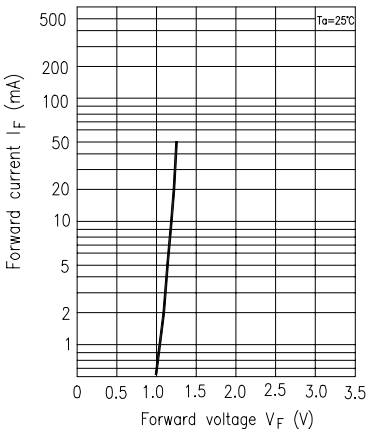


Fig. 5 Forward Voltage vs. Ambient Temperature

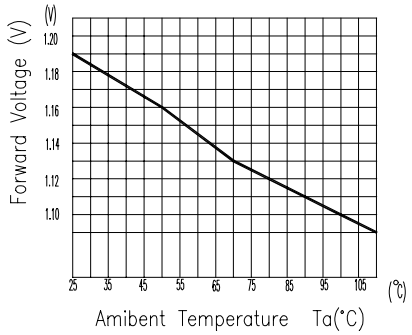
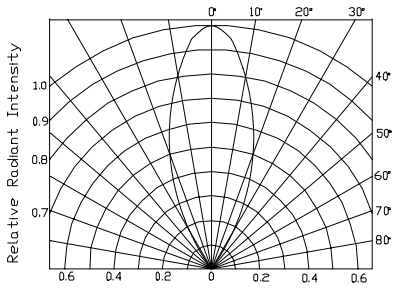


Fig. 6 Relative Radiant Intensity vs. Angular Displacement



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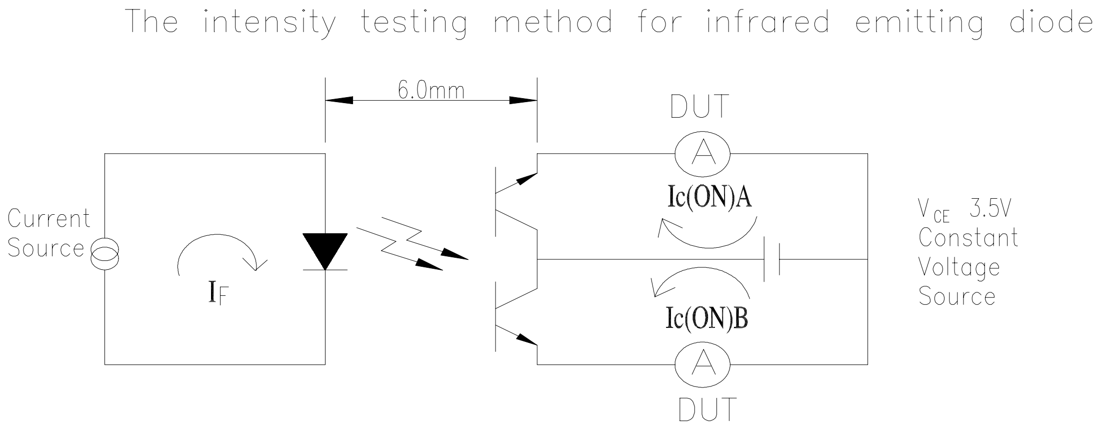
Test Method For $I_{C(ON)}$:

Condition : I_F=4 mA



To Distinguish Intensity:

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

E Ranks

Color Code	Ranks	Min	Max	Unit
Red	E1	140	260	μA
Blue	E2	210	350	μA
Yellow	E3	280	440	μA
Silver	E4	350	530	μA
Green	E5	420	620	μA
Purple	E6	490	710	μA
White	E7	560	800	μA
Brown	E8	630	890	μA
Orange	E9	700	980	μA

Rough ranks

Color Code	Ranks	Min	Max	Unit
No paint	7-2	300	450	μA
No paint	7-1	340	520	μA
No paint	6-2	490	750	μA
No paint	6-1	650	1300	μA

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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℃± 5℃	10secs	22pcs	I_R≧Ux 2 Ee≦Lx 0.8 V_F≧Ux 1.2 U：Upper Specification Limit L：Lower Specification Limit	0/1
2	Temperature Cycle	H : +85℃ 30mins ↕ 5mins L : -55℃ 30mins	50Cycles	22pcs		0/1
3	Thermal Shock	H :+100℃ 5mins ↕ 10secs L :-10℃ 5mins	50Cycles	22pcs		0/1
4	High Temperature Storage	TEMP.：+100℃	1000hrs	22pcs		0/1
5	Low Temperature Storage	TEMP.：-55℃	1000hrs	22pcs		0/1
6	DC Operating Life	I_F=20mA	1000hrs	22pcs		0/1
7	High Temperature/ High Humidity	85℃ / 85% R.H	1000hrs	22pcs		0/1

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