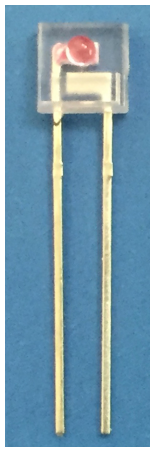
深圳市固芯科技有限公司
SHENZHENSHI ATTCH CHIP TECHNOLOGY CO.,LTD

Technical Data Sheet

1.5mm Side Face Infrared LED

IR928

Features



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

Descriptions

- 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.

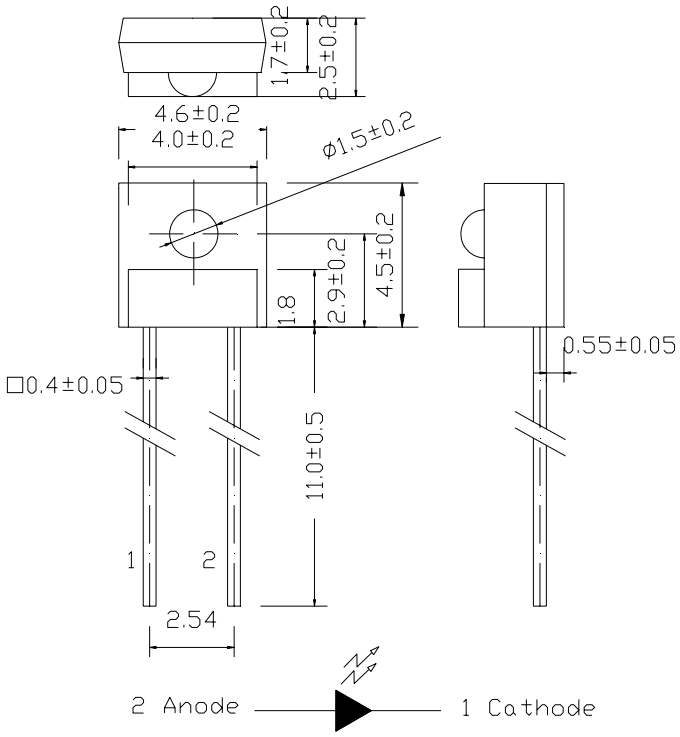
Applications

- Mouse
- Optoelectronic switch
- Infrared applied system

Device Selection Guide

LED Part No.	Chip Material	Lens Color
IR928	GaAlAs	Waterclear

Package Dimensions



Notes: 1.All dimensions are in millimeters
2.Tolerances unless dimensions ±0.25mm

Absolute Maximum Ratings (Ta=25℃)

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}	-25 ~ +85	℃
Storage Temperature	T_{stg}	-40 ~ +85	℃
Soldering Temperature(*2)	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
Light Current	Ic(ON)	I_F=4mA,V_{CE}=3.5V	265	--	1870	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	1.5	V
Reverse Current	I_R	V_R=5V	--	--	10	μA
View Angle	2θ1/2	I_F=20mA	--	40	--	deg

Wide Rank

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

Thin Rank

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

Typical Electro-Optical Characteristics Curves

Fig.1 Forward Current vs. Ambient Temperature

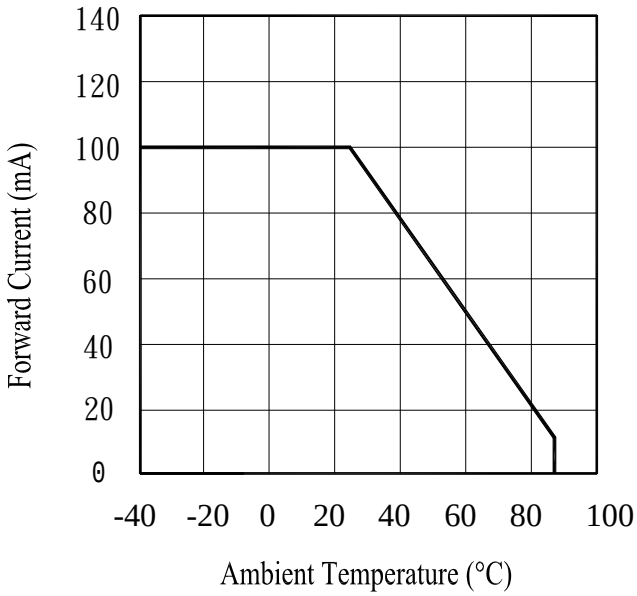


Fig.2 Spectral Distribution

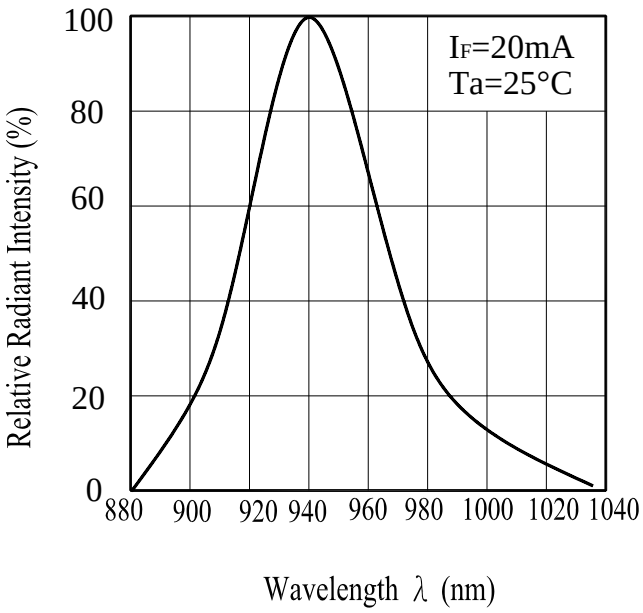


Fig.3 Peak Emission Wavelength Ambient Temperature

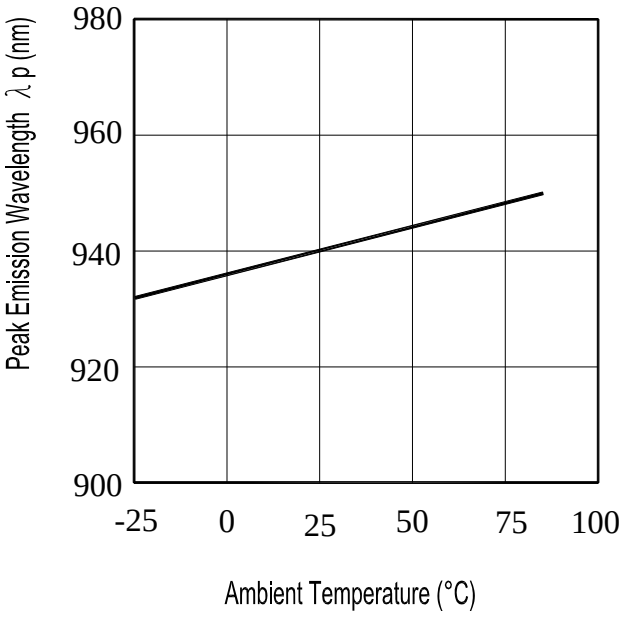
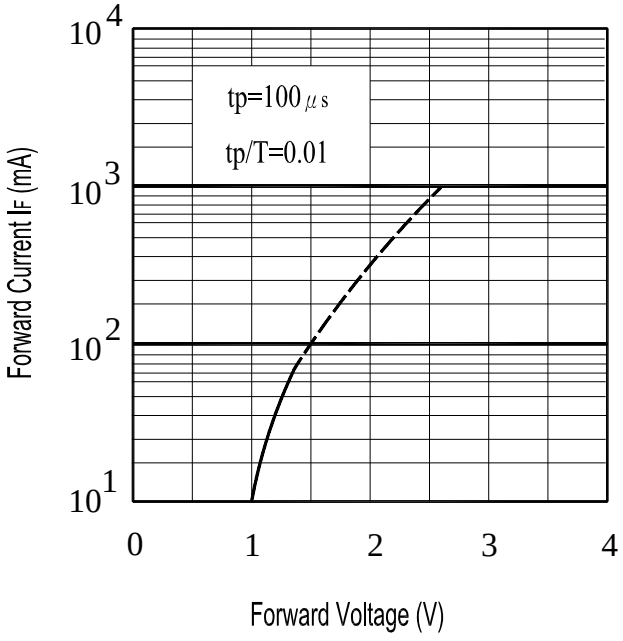


Fig.4 Forward Current vs. Forward Voltage



Typical Electro-Optical Characteristics Curves

Fig.5 Forward Voltage vs. Ambient Temperature

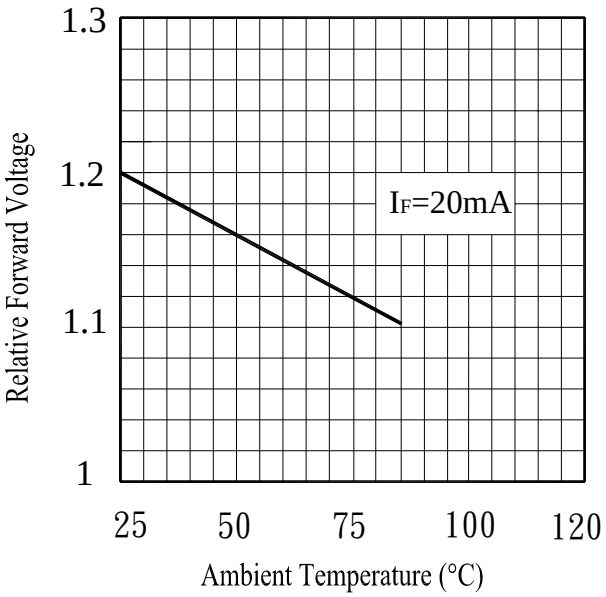
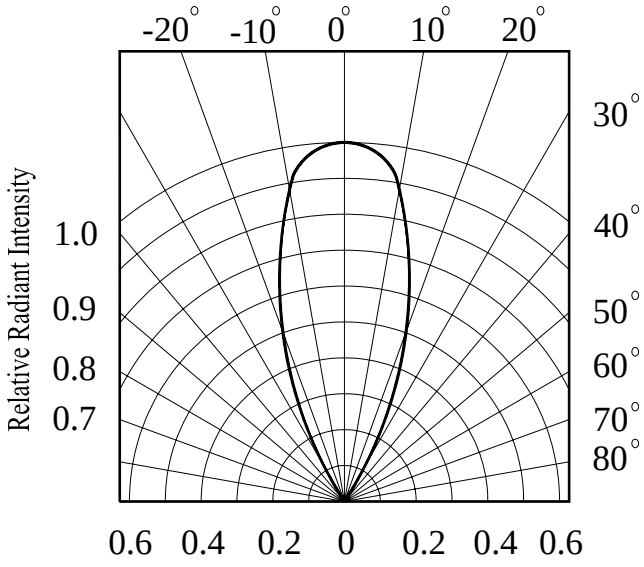
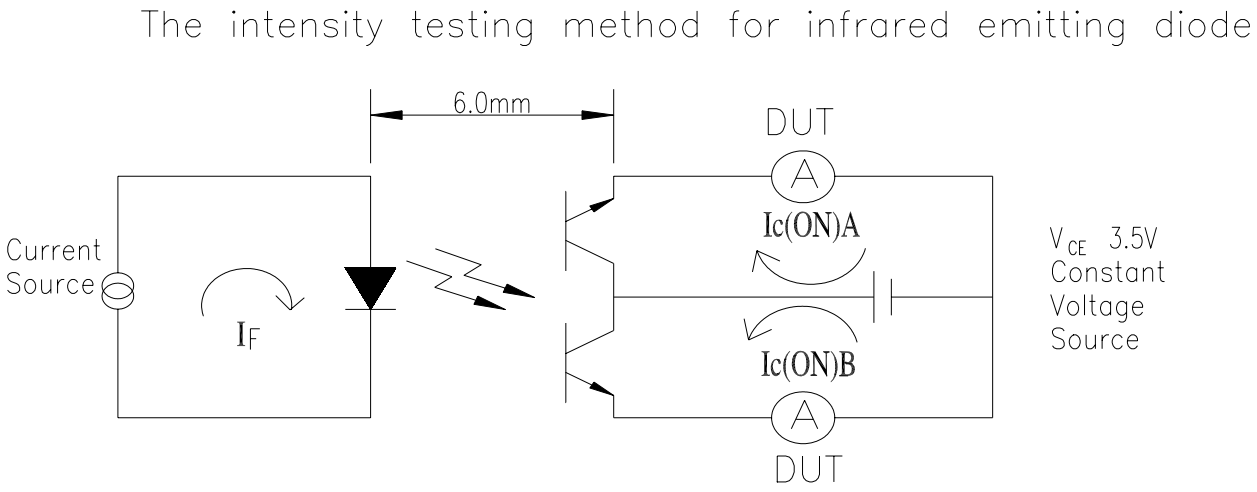


Fig.6 Relative Radiant Intensity vs. Angular Displacement



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

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



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	$I_R \geqq U \times 2$ $Ee \leqq L \times 0.8$ $V_F \geqq U \times 1.2$ U：Upper Specification Limit L：Lower Specification Limit	0/1
2	Temperature Cycle	H：+100℃ 15mins ↕ 5mins L：-40℃ 15mins	300Cycles	22pcs		0/1
3	Thermal Shock	H：+100℃ 5mins ↕ 10secs L：-10℃ 5mins	300Cycles	22pcs		0/1
4	High Temperature Storage	TEMP.：+100℃	1000hrs	22pcs		0/1
5	Low Temperature Storage	TEMP.：-40℃	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