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# Technical Data Sheet

## Side Face Infrared LED

### SIR928-6C-F

#### Features

- Low forward voltage
- Peak wavelength  $\lambda_p=875\text{nm}$
- High reliability
- Pb free
- This product itself will remain within RoHS compliant version.



#### Descriptions

- SIR928-6C-F is a GaAlAs infrared emitting diode. The miniature side-facing device has a chip that emits radiation from the side of the water clear package

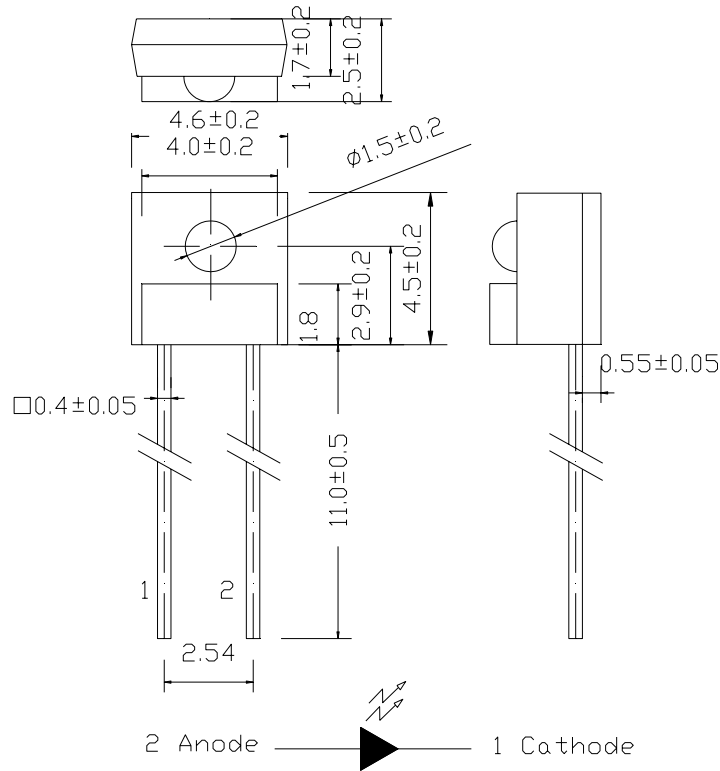
#### Applications

- Optoelectronic switch
- Photo interrupter

#### Device Selection Guide

LED Part No.	Chip	Lens Color
	Material	
SIR928-6C-F	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	$I_F$	100	mA
Peak Forward Current(*1)	$I_{FP}$	1.0	A
Reverse Voltage	$V_R$	5	V
Operating Temperature	$T_{opr}$	-25 ~ +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	$P_d$	100	mW

- Notes:** \*1: $I_{FP}$  Conditions--Pulse Width  $\leq 100 \mu s$  and Duty  $\leq 1\%$ .  
 \*2:Soldering time  $\leq 5$  seconds.

**Electro-Optical Characteristics (Ta=25°C)**

Parameter	Symbol	Condition	Min.	Typ.	Max.	Units
Light Current	Ic(ON)	I <sub>F</sub> =4mA, V <sub>CE</sub> =3.5V	306	--	1870	μA
Peak Wavelength	λ <sub>p</sub>	I <sub>F</sub> =20mA	--	875	--	nm
Spectral Bandwidth	Δλ	I <sub>F</sub> =20mA	--	80	--	nm
Forward Voltage	V <sub>F</sub>	I <sub>F</sub> =20mA		1.3	1.6	V
		I <sub>F</sub> =100mA Pulse Width ≤ 100 μs, Duty ≤ 1%	--	1.4	1.8	
		I <sub>F</sub> =1A Pulse Width ≤ 100 μs, Duty ≤ 1%.	--	2.6	4.0	
Reverse Current	I <sub>R</sub>	V <sub>R</sub> =5V	--	--	10	μA
View Angle	2θ 1/2	I <sub>F</sub> =20mA	--	40	--	deg

**Rank**

 Condition : V<sub>ce</sub>=3.5V, I<sub>F</sub>=4mA

Unit : μA

Bin Number	MIN	MAX	Unit
5-2	1053	1870	μA
6-1	650	1274	μA
6-2	465	750	μA
7-1	347	550	μA
7-2	306	441	μA

**Typical Electro-Optical Characteristics Curves**

Fig.1 Forward Current vs.

Ambient Temperature

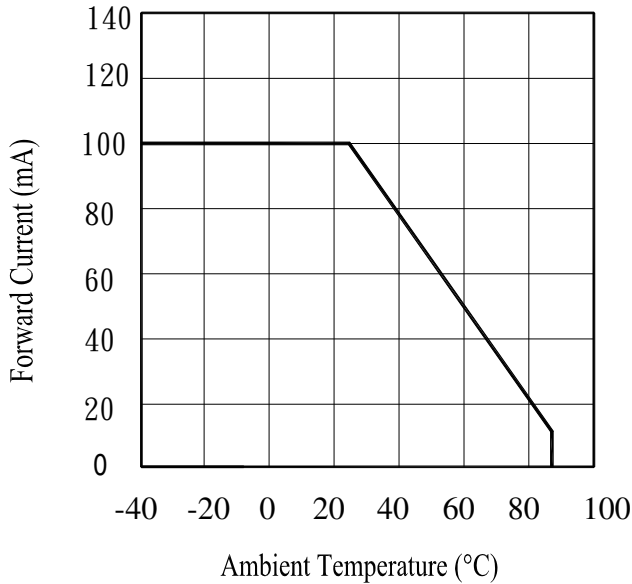


Fig.2 Spectral Distribution

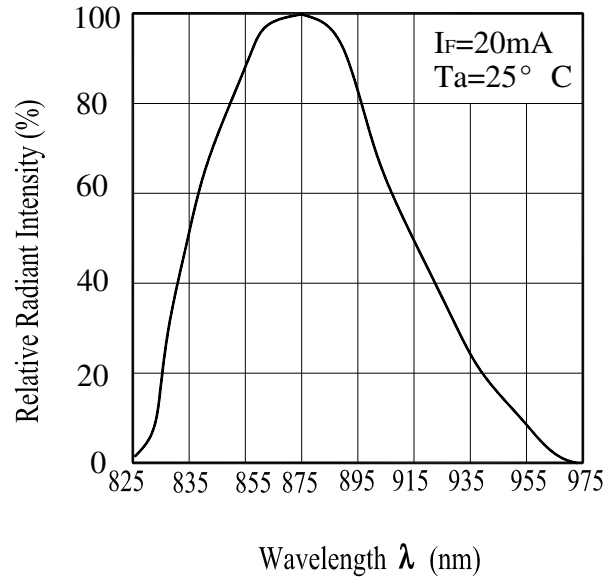


Fig.3 Peak Emission Wavelength

Ambient Temperature

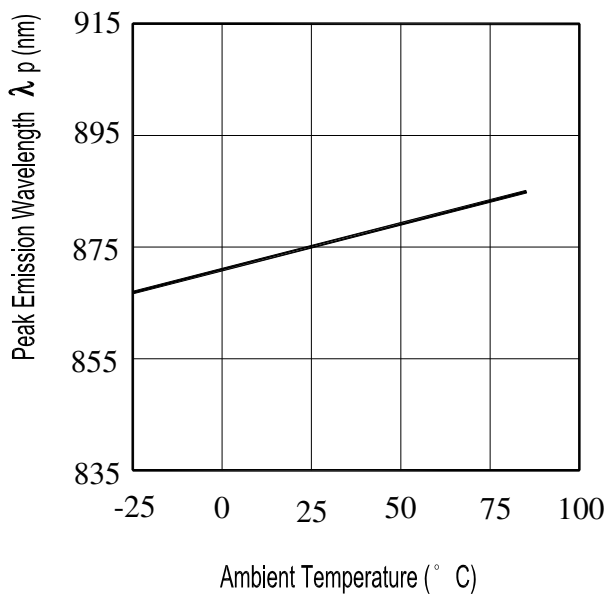
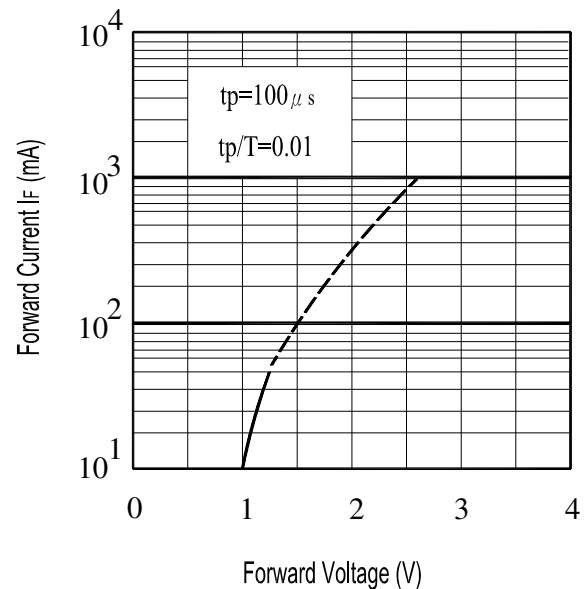


Fig.4 Forward Current vs. Forward Voltage

vs. Forward Voltage





**Typical Electro-Optical Characteristics Curves**

Fig.5 Forward Voltage vs.  
Ambient Temperature(° C)

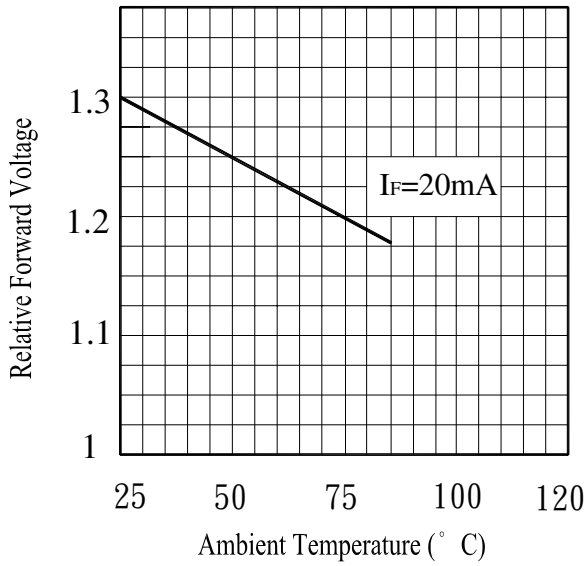
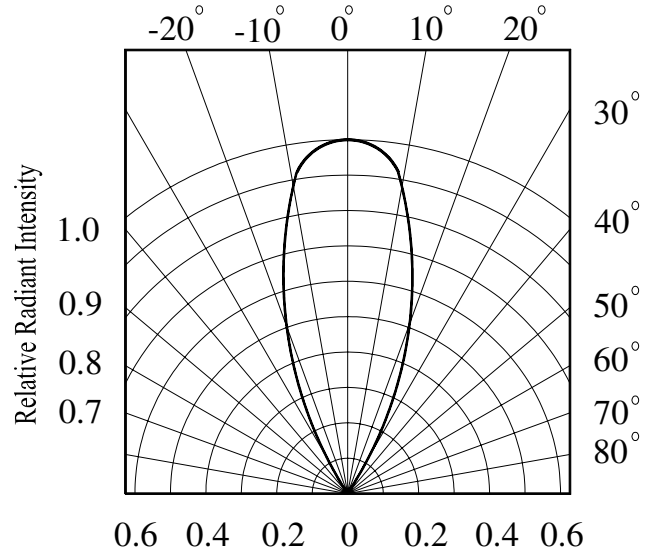


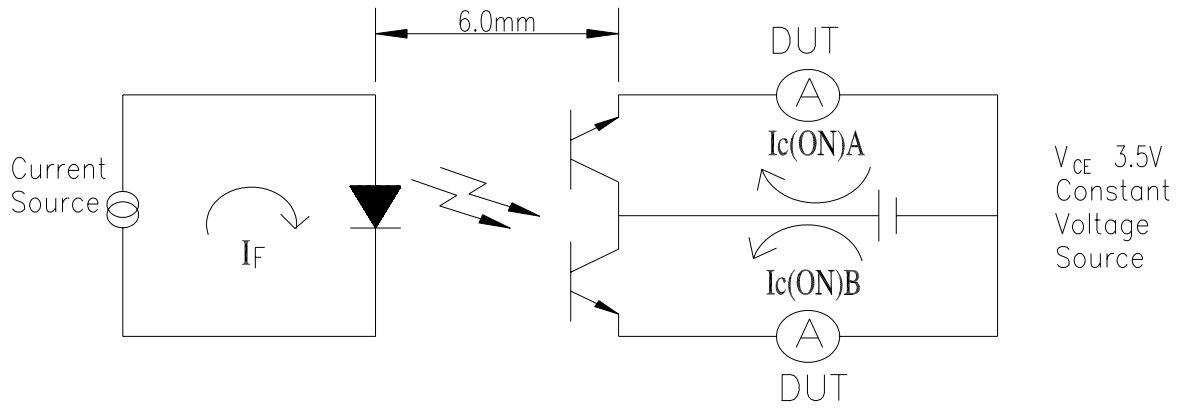
Fig.6 Relative Radiant Intensity vs.  
Angular Displacement



■ **Test Method For  $I_{C(ON)}$ :**

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

The intensity testing method for infrared emitting diode



**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	$I_R \geq U \times 2$ $E_e \leq L \times 0.8$ $V_F \geq U \times 1.2$  U : Upper Specification  Limit L : Lower Specification Limit	0/1
2	Temperature Cycle	H : +100°C    15mins ↑ 5mins ↓ L : -40°C    15mins	300Cycles	22pcs		0/1
3	Thermal Shock	H :+100°C    5mins ↑ 10secs ↓ L :-10°C    5mins	300Cycles	22pcs		0/1
4	High Temperature Storage	TEMP. : +100°C	1000hrs	22pcs		0/1
5	Low Temperature Storage	TEMP. : -40°C	1000hrs	22pcs		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





## **SIR928-6C-F**

### **Packing Quantity Specification**

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

### **Label Form Specification**



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.
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