

Technical Data Sheet

Side Face Infrared LED

IR908-7C

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 (IR908-7C) 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.

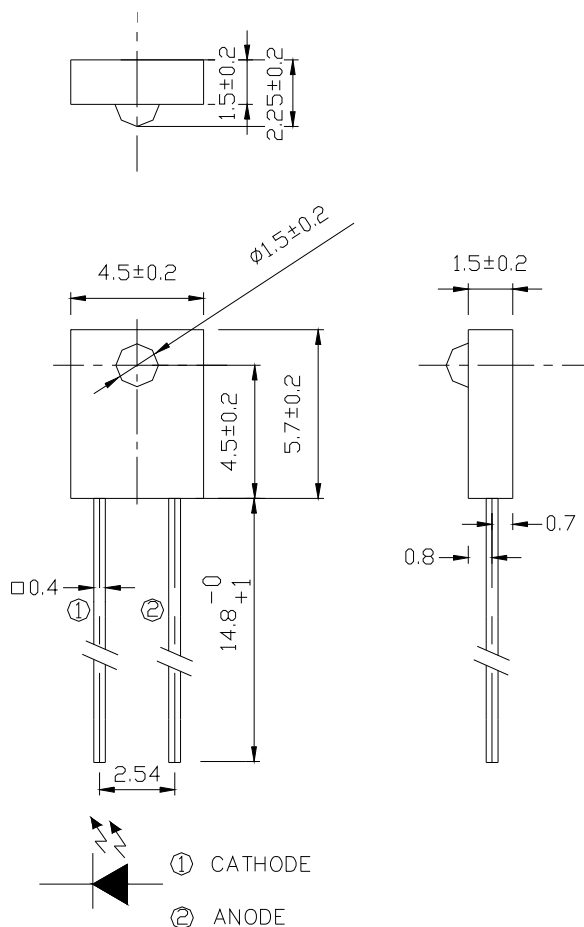
Applications

- Mouse
- Optoelectronic switch
- Infrared applied system

Device Selection Guide

LED Part No.	Chip	Lens Color
	Material	
IR908-7C	GaAlAs	Water clear

Package Dimensions



Notes: 1.All dimensions are in millimeters

2.Tolerances unless dimensions $\pm 0.25\text{mm}$

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

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}	$-25 \sim +85$	$^\circ\text{C}$
Storage Temperature	T_{stg}	$-40 \sim +100$	$^\circ\text{C}$
Soldering Temperature	T_{sol}	260	$^\circ\text{C}$
Power Dissipation at(or below) 25°C Free Air Temperature	P_d	75	mW

Notes: *1: I_{FP} Conditions--Pulse Width $\leq 100 \mu\text{s}$ 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	143	--	1274	μ A
Peak Wavelength	λ _p	I _F =20mA	--	940	--	nm
Spectral Bandwidth	Δ λ	I _F =20mA	--	45	--	nm
Forward Voltage	V _F	I _F =20mA	--	1.2	1.5	V
Reverse Current	I _R	V _R =5V	--	--	10	μ A
View Angle	2 θ 1/2	I _F =20mA	--	60	--	De g

Rank

Color Code	Ranks	Symbol	Min	Typ	Max	Unit	Test Condition
Red	E1	I _{c(on)}	143	---	255	μ A	I _F =4mA, V _{CE} =3.5V
Blue	E2	I _{c(on)}	214	---	343	μ A	I _F =4mA, V _{CE} =3.5V
Yellow	E3	I _{c(on)}	286	---	431	μ A	I _F =4mA, V _{CE} =3.5V
Silver	E4	I _{c(on)}	357	---	519	μ A	I _F =4mA, V _{CE} =3.5V
Green	E5	I _{c(on)}	428	---	608	μ A	I _F =4mA, V _{CE} =3.5V
Purple	E6	I _{c(on)}	500	---	696	μ A	I _F =4mA, V _{CE} =3.5V
White	E7	I _{c(on)}	571	---	784	μ A	I _F =4mA, V _{CE} =3.5V

Rough ranks

Parameter	Min	Max	Unit	Test Condition
7-2	306	441	μ A	I _F =4mA, V _{CE} =3.5V
7-1	347	550	μ A	I _F =4mA, V _{CE} =3.5V
6-2	465	750	μ A	I _F =4mA, V _{CE} =3.5V
6-1	650	1274	μ A	I _F =4mA, V _{CE} =3.5V

Typical Electro-Optical Characteristics Curves

Fig.1 Forward Current vs.

Ambient Temperature

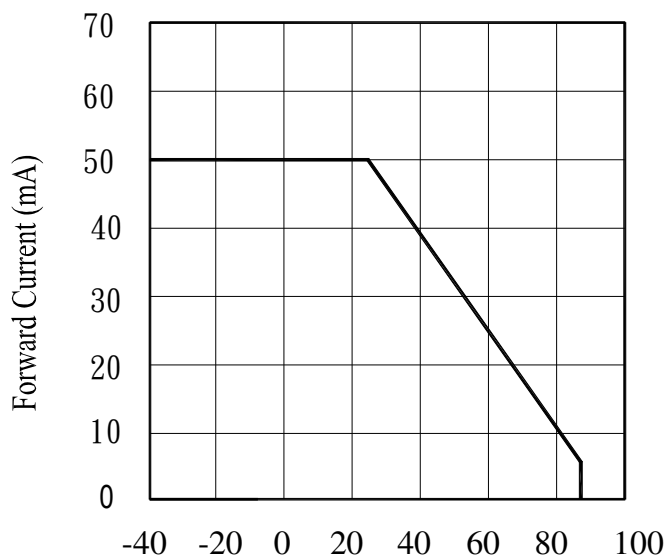


Fig.2 Spectral Distribution

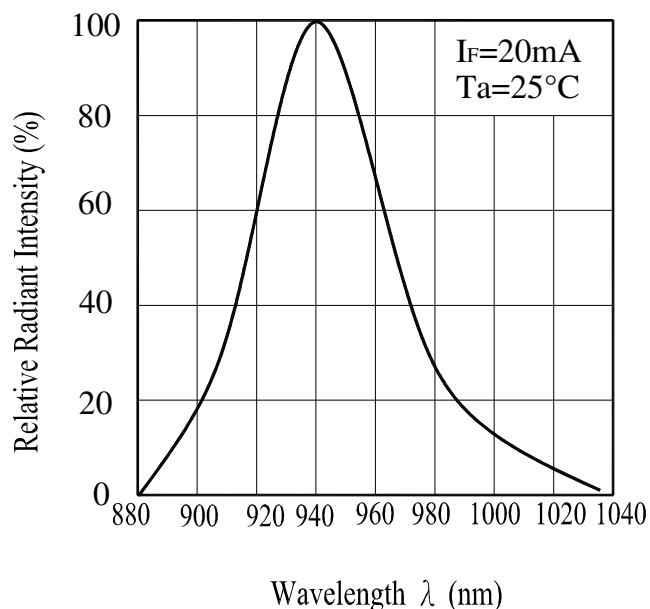


Fig.3 Peak Emission Wavelength vs.

Ambient Temperature

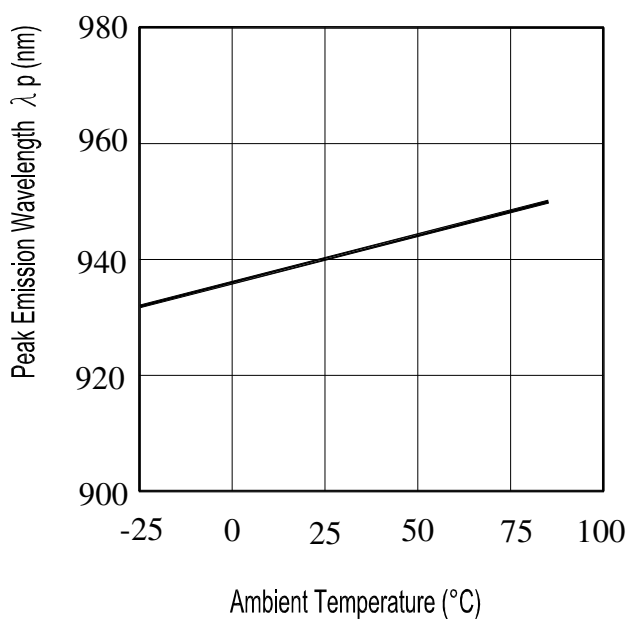
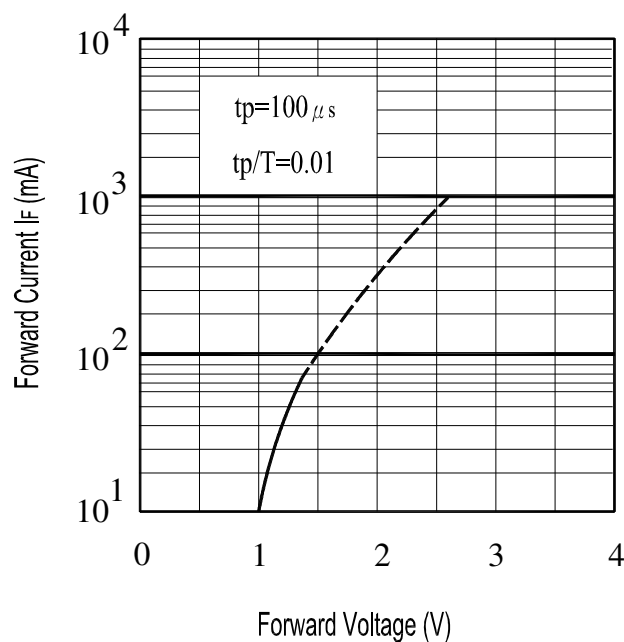


Fig.4 Forward Current vs.

Forward Voltage



Typical Electro-Optical Characteristics Curves

Fig.5 Forward Current vs.

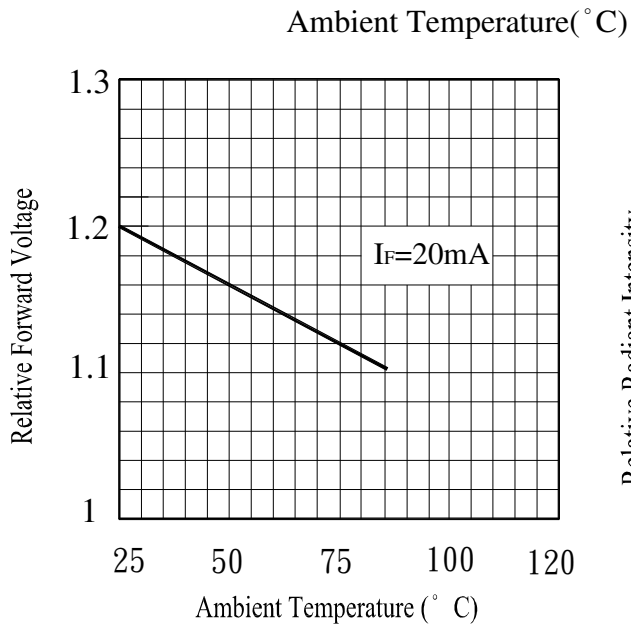
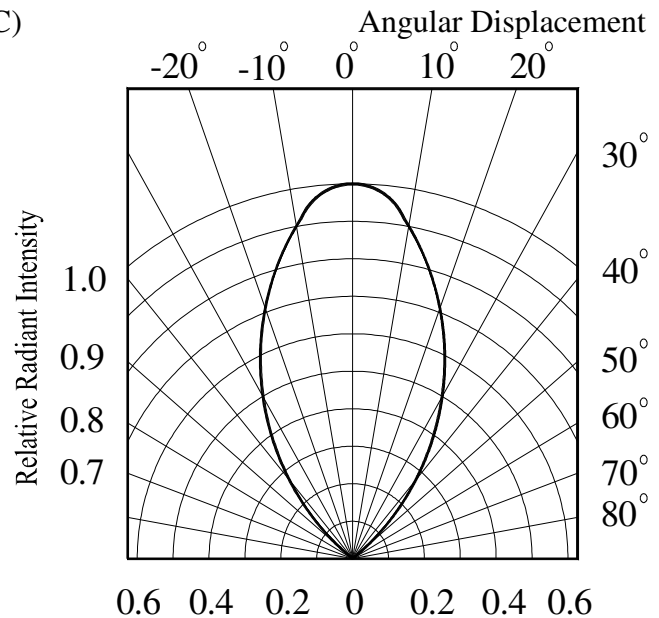


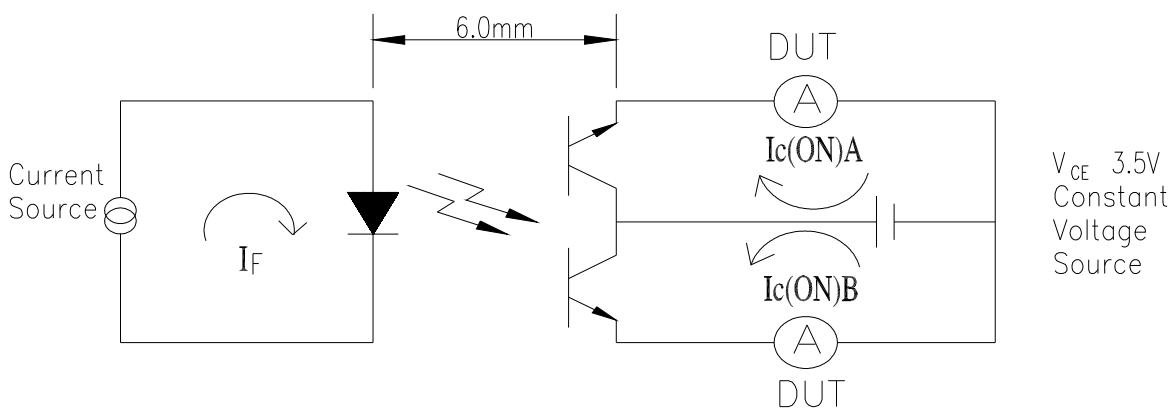
Fig.6 Relative Radiant Intensity vs.



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. : $260^{\circ}\text{C} \pm 5^{\circ}\text{C}$	10secs	22pcs	Attenuation of Light Current value>20%	0/1
2	Temperature Cycle	H : $+100^{\circ}\text{C}$ 15mins ↓ 5mins L : -40°C 15mins	300Cycles	22pcs		0/1
3	Thermal Shock	H : $+100^{\circ}\text{C}$ 5mins ↓ 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°C / 85% R.H	1000hrs	22pcs		0/1

Packing Quantity Specification

1. 1000PCS/1Bag,8Bag/1Box
2. 10Boxes/1Carton

Label Form Specification

	EVERLIGHT	
CPN: P/N:		
		
IR908-7C		
QTY:	CAT:	
	HUE:	
LOT NO:	REF:	
		
Reference		
		

CPN: Customer's Production Number

P/N : Production Number

QTY: Packing Quantity

CAT: Ranks

HUE: Peak Wavelength

REF: Reference

LOT No: Lot Number

X: Month

Reference: Identify Label Number

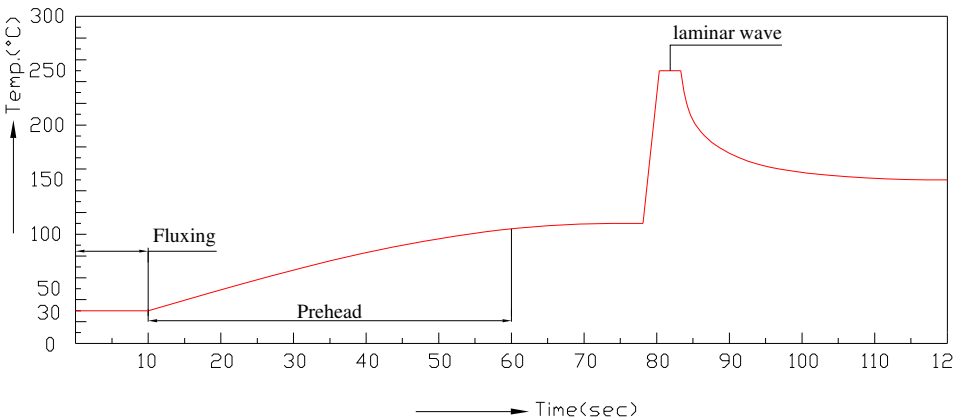
Notes

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.

Application Note:

Through-Hole Type LED Soldering Condition

To avoid overheating and reliability concerns of through-hole type LEDs, below is our suggested soldering method :

Hand-soldering by Solder iron	<ol style="list-style-type: none"> 1. Soldering Temperature: 350°C Max. (30W Max.) 2. Soldering Time: Max. 3sec 3. Position: At least 3mm away from resin body.
DIP-soldering (or Wave- Soldering)	<ol style="list-style-type: none"> 1. Pre-heating Temperature: 120°C below within 60sec 2. Soldering Bath Temperature: 260°C Max. Dipping time: 5s Max 3. Position: At least 3mm away from resin body. 

Notice:

1. Avoiding applying any stress to the lead frame while the LEDs are at high temperature particularly when soldering.
2. Dip and hand soldering should not be done more than 1 time.
3. After soldering the LEDs, the epoxy resin should be protected from mechanical shock or vibration until the LEDs return to room temperature.

4. A rapid-rate process is not recommended for cooling the LEDs down from the peak temperature.
5. Although the recommended soldering conditions are specified in the above table, dip or hand-soldering at the lowest possible temperature is desirable for the LEDs.
6. Wave soldering parameter must be set and maintain according to recommended temperature and dwell time in the solder wave.

Cleaning

1. When necessary, cleaning should only use with isopropyl alcohol at room temperature for a duration of no more than 1 minute. Dry at room temperature before use.
2. Do not clean the LEDs by the ultrasonic. When it is absolutely necessary, the influence of ultrasonic cleaning on the LEDs depends on factors such as ultrasonic power and the assembled condition. (Please refer to below reference condition.)

Notice: (1) This bonding wire in the package can have an effect on the resonance reliability.

Please not touch the vibrating source directly. Ultrasonic cleaning shall be pre-qualified to ensure this will not cause damage to the LED

(2) Reference condition: Refer to JEITA Standard Test requirement

- a. Ultrasonic Wave Frequency: 25KHz \pm 4KHz or 40 KHz (+8 KHz/-4KHz)
- b. Output: 10W/Litre ~30W/Litre
- c. Duration: 60s \pm 5S, Temperature: under 40°C

Drying should be performed under 90°C and 30s.

Both cleaning and Drying should not be performed over 4 times.

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