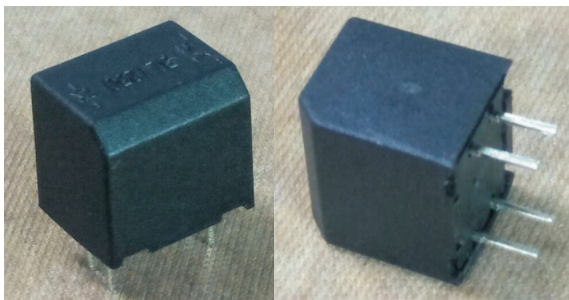


产品规格书 Product Details specification

产品名称 Title	File No.	Version	Date	Page
BL-1250-45光电开关	BL-3D-166	A2	2018.12.18	1/10

■ 功能Function :

- 1.水平倾斜检测
Horizontal tilt anti-fall detecting.
- 2.垂直翻转检测
Vertical flip anti-fall detecting.

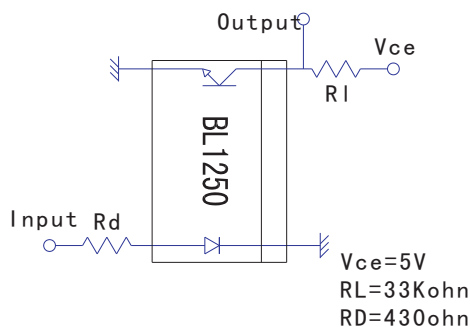
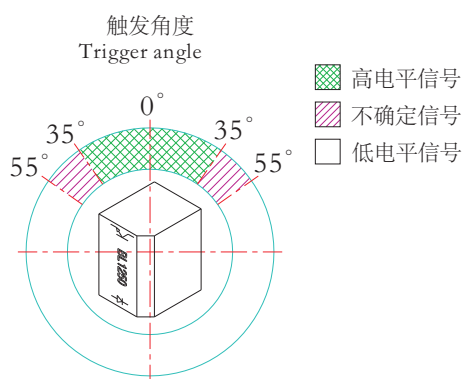


■ 应用产品Applications:

- 1.自动化装置Electric fan anti-fall
- 2.家用电器Home appliances anti-fall

■ 产品特性Features:

1. BL-1250可检测360度全周倾倒。
BL1250 can omni 360 degree tilt detecting.
2. 产品侧立时输出高电平;当产品向任一方向倾斜超 45 ± 10 度, 输出低电平。
When the products is broadside, the output is high level.
When the products tilt to any direction and more than 45 ± 10 degree, output is the low level.
3. 此开关的输出量可触发MCU、I/O等控制电路。
This switch output can trigger MCU, I/O control circuit.



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■ 电器特性Electrical characteristics:

1	电 压 Voltage:	4.5-5V
2	电 流 Current:	6-20mA
3	导 通 时 间 Conductive time:	状态稳定长通
4	对射管特性 LED characteristics	见4-10页

■ 可靠测试项目 Reliable test project:

1	操作温度 Operating Temperature	-25℃ to 85℃
2	储存温度 Storage Temperature	-40℃ to 85℃
3	端子拉力 Pull force of terminal	500gf for 1 minute
4	湿度 Humidity	40℃/95% RH
5	操作寿命 Operating lifespan	1,000,000 times
6	电器寿命 Electrical lifespan	30,000 hours

■ 材料列表Bill of material:

1	胶壳 Housing	Nylon+ Glass fiber
2	胶芯 Plastic	Nylon+ Glass fiber
3	仓体 Storehouse	Brass ,Nickel-plated
4	仓盖 Cover	Brass ,Nickel-plated
5	滚珠 Ball	Brass ,Nickel-plated
6	发射管 Emissions	
7	接收管 Reliever	

■ 焊接特性Welding characteristics

焊锡：含锡量100%

Solder tin, tin content 100%

焊接温度：260℃±5℃

Welding humidity: 260℃ ± 5℃

焊接时间：2-10秒

Welding time: 2-10 seconds

不可使用强酸、碱性助焊剂

Do not use strong acid alkali flux

■ 包装Packaging:

1、200PCS/袋 (PVC塑料袋，按一般电子料存放要求存放)

200PCS/bag (PVC plastic)

2、41PCS/Tube

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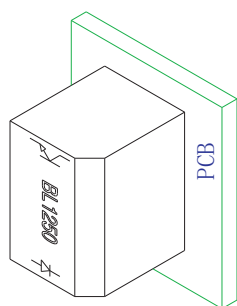
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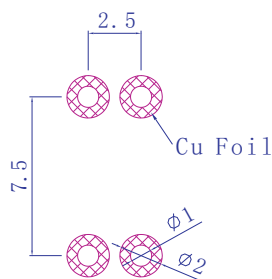
产品名称 Title	File No.	Version	Date	Page
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SIZE尺寸

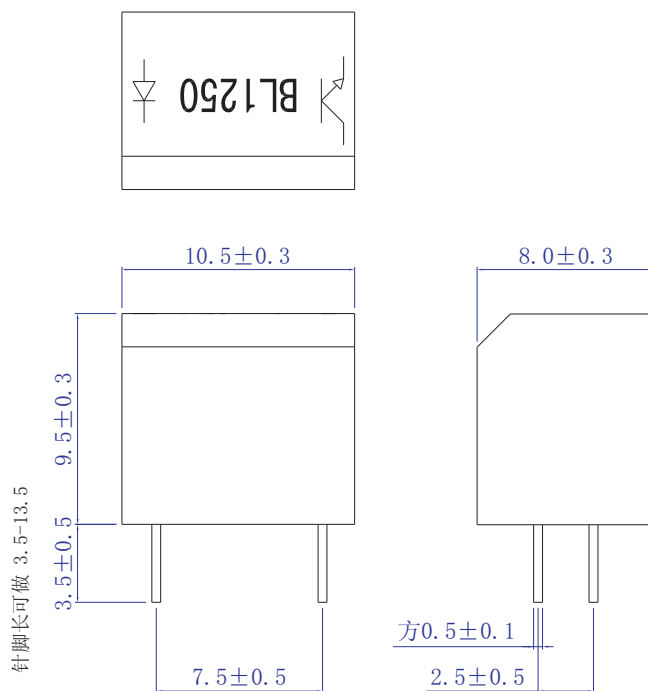
Unit: mm,
Tolerance ± 0.25



垂直板安装



PCB Hole Layout



注意事项Note

1. 如果该产品要用于高安全性产品及耐久性极高的设备中（如生命安全设备、航空设施、防灾装置），请确认是否合用，或咨询我司了解详情。

If the product used for high security products and durability of extremely high equipment (such as life safety equipment, aviation facilities, disaster prevention device), please confirm whether a share, can seek advice our company for details.

2. 请勿超负荷使用，以防发生火灾。

In case of fire, Please do not overload applicable.

3. 焊接温度或时间超过规范时，会造成开关解体。

The welding temperature or time more than standard, can cause switch collapse.

4. 勿使用水溶性助焊剂、可能会造成开关损坏。

Do not use water solubility flux. May cause damage to the switch.

5. 勿使用溶剂清洗开关。

Do not use solvent wash switch.

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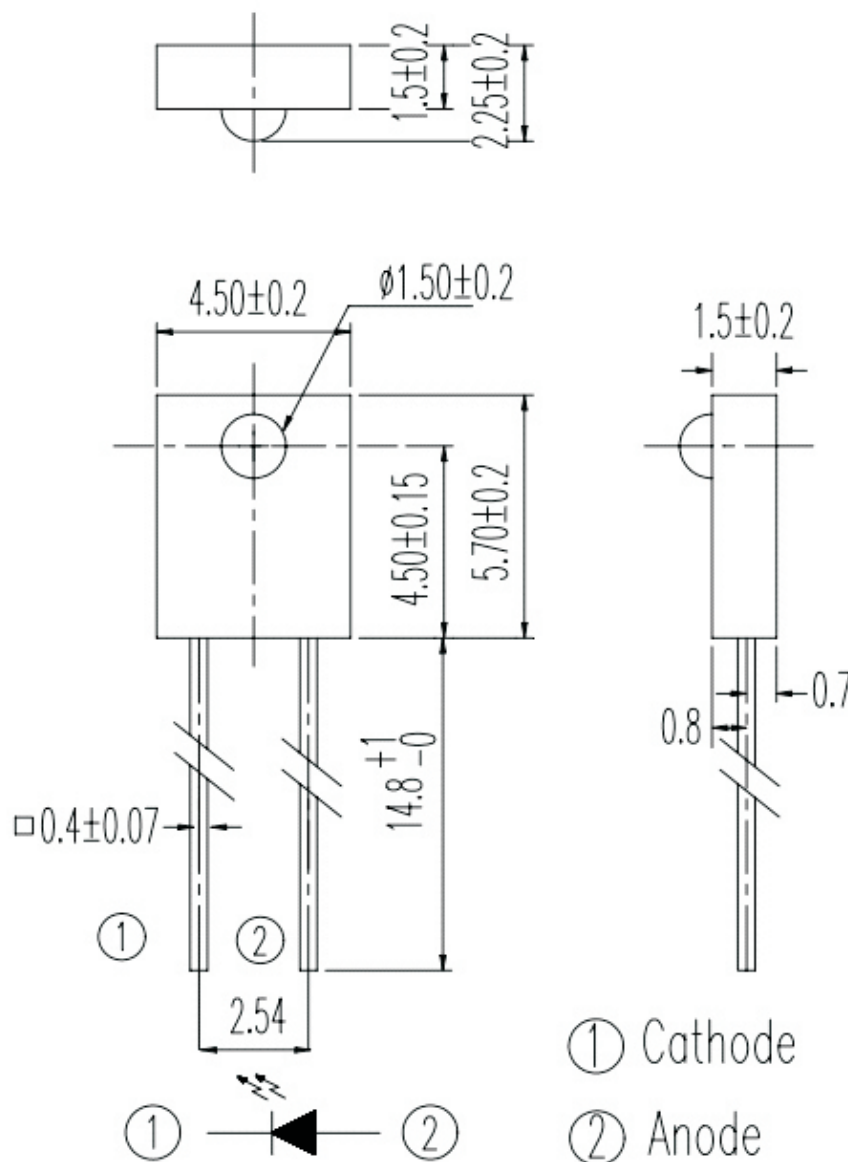
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Package Dimensions:



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◎Notes :

- 1.All dimensions are in millimeter.
- 2.General tolerance : $\pm 0.1\text{mm}$
- 3.Lead spacing is measured where the lead emerge from the package.
- 4.Above specification may be changed without notice. EVERLIGHT will reserve authority on material change for above specification.
- 5.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.
- 6.When using this product , please observe the absolute maximum ratings and the instructions for use 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.

Description

The **IR908-7C** is a GaAs(GaAlAs) infrared emitting diode. The miniature side-facing device has a chip that emits radiation from the side of the water clear package.

Features

- Low forward voltage
- Peak wavelength $\lambda_p=940\text{nm}$
- High reliability

Applications

- Mouse
- Optoelectronic switch
- Photo interrupter

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Absolute Maximum Ratings

(Ta=25°C)

Item	Symbol	Rating	Unit
Power Dissipation	P_D	75	mW
Reverse Voltage	V_R	5	V
Forward Current	I_F	50	mA
Peak Forward Current(*1)	I_{FP}	1	A
Operating Temperature	T_{opr}	-25~+85	°C
Storage Temperature	T_{stg}	-40~+85	°C
Soldering Temperature (1/16 inch from body for 5 seconds)	T_{sol}	260	°C

(*1) $t_w=100 \mu\text{SEC.}$, $T=10 \text{ m SEC.}$

Electro-Optical Characteristics

(Ta=25°C)

Parameter	Symbol	Min	Typ	Max	Unit	Condition
Collector Current	$I_{C(ON)}$	140	---	980	μA	$I_F=4\text{mA}$, $V_{CE}=3.5\text{V}$
		200	---	1030	μA	
Peak Wavelength	λ_p	---	940	---	nm	$I_F=20\text{mA}$
Spectral Bandwidth	$\Delta\lambda$	---	50	---	nm	$I_F=20\text{mA}$
View Angle	$2\theta_{1/2}$	---	60	---	Deg	$I_F=20\text{mA}$
Forward Voltage	V_F	---	1.2	1.6	V	$I_F=20\text{mA}$
Reverse Current	I_R	---	---	10	μA	$V_R=5\text{V}$

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Typical Characteristics

Fig. 1 Forward Current vs. Ambient Temperature

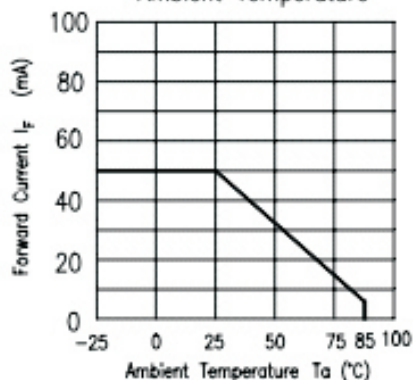


Fig. 2 Spectral Distribution

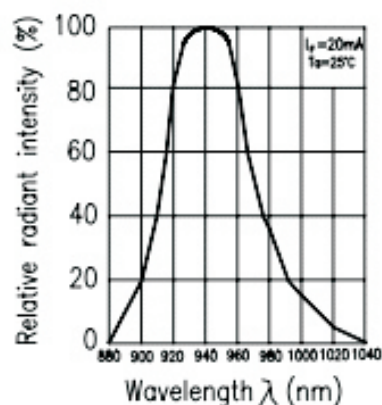


Fig. 3 Peak Emission Wavelength vs. Ambient Temperature

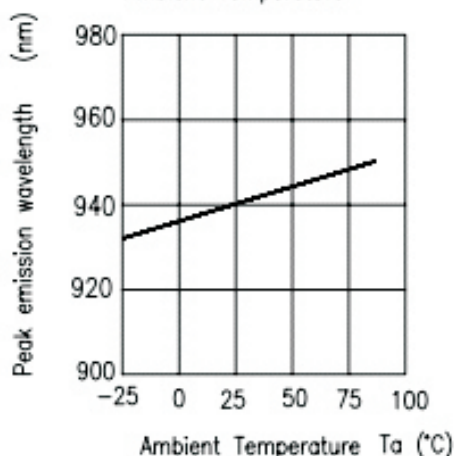


Fig. 4 Forward Current vs. Forward Voltage

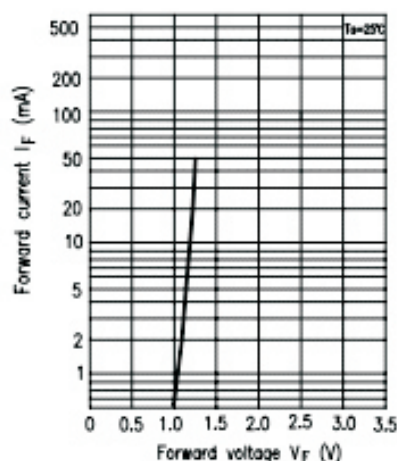


Fig. 5 Forward Voltage vs. Ambient Temperature

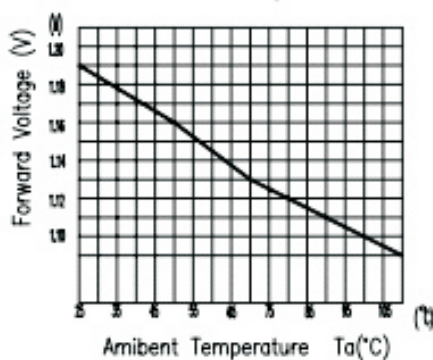
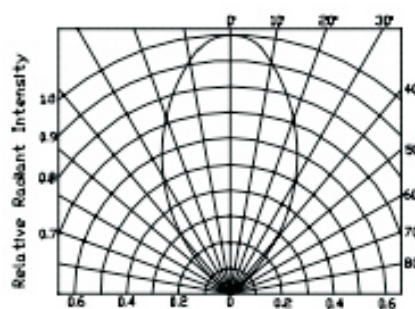


Fig. 6 Relative Radiant Intensity vs. Angular Displacement



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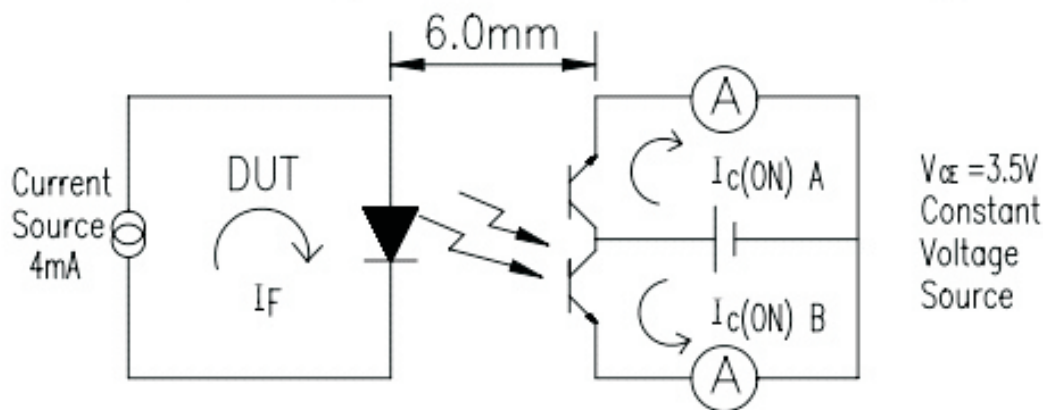
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Test Method

The intensity testing method of Infrared emitting diode:



Standard PTR

$$I_c(ON) = \frac{I_c(ON) A + I_c(ON) B}{2}$$

$$\text{Ratio} = I_c(ON) A / I_c(ON) B \approx 1.0$$

E Ranks

Color Code	Parameter	Symbol	Min	Max	Unit	Test Condition
Red	E1	$I_c(ON)$	140	260	μA	$I_F = 4mA, V_{CE} = 3.5V$
Blue	E2	$I_c(ON)$	210	350	μA	$I_F = 4mA, V_{CE} = 3.5V$
Yellow	E3	$I_c(ON)$	280	440	μA	$I_F = 4mA, V_{CE} = 3.5V$
Silver	E4	$I_c(ON)$	350	530	μA	$I_F = 4mA, V_{CE} = 3.5V$
Green	E5	$I_c(ON)$	420	620	μA	$I_F = 4mA, V_{CE} = 3.5V$
Purple	E6	$I_c(ON)$	490	710	μA	$I_F = 4mA, V_{CE} = 3.5V$
White	E7	$I_c(ON)$	560	800	μA	$I_F = 4mA, V_{CE} = 3.5V$
Brown	E8	$I_c(ON)$	630	890	μA	$I_F = 4mA, V_{CE} = 3.5V$
Orange	E9	$I_c(ON)$	700	980	μA	$I_F = 4mA, V_{CE} = 3.5V$
Collector Current Ratio of 2 Photo Transistors		R	0.8	---	1.2	$I_c(ON)A / I_c(ON)B$

* $I_c(ON) = [I_c(ON)A + I_c(ON)B] / 2$

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M Ranks

Color Code	Parameter	Symbol	Min	Max	Unit	Test Condition
Red	M1	$I_c(ON)$	200	390	μA	$I_F=4mA, V_{CE}=3.5V$
Blue	M2	$I_c(ON)$	270	470	μA	$I_F=4mA, V_{CE}=3.5V$
Yellow	M3	$I_c(ON)$	340	550	μA	$I_F=4mA, V_{CE}=3.5V$
Silver	M4	$I_c(ON)$	410	630	μA	$I_F=4mA, V_{CE}=3.5V$
Green	M5	$I_c(ON)$	480	710	μA	$I_F=4mA, V_{CE}=3.5V$
Purple	M6	$I_c(ON)$	550	790	μA	$I_F=4mA, V_{CE}=3.5V$
White	M7	$I_c(ON)$	620	870	μA	$I_F=4mA, V_{CE}=3.5V$
Brown	M8	$I_c(ON)$	690	950	μA	$I_F=4mA, V_{CE}=3.5V$
Orange	M9	$I_c(ON)$	760	1030	μA	$I_F=4mA, V_{CE}=3.5V$
Collector Current Ratio of 2 Photo Transistors		R	0.8	---	1.2	$I_c(ON)A / I_c(ON)B$

* $I_c(ON)=[I_c(ON)A+I_c(ON)B]/2$

*For the intensity test method, the output intensity is measured indirectly by measuring the emitter current of a "standard phototransistor". The parts are 6mm apart (lead center to lead center), the test condition is $I_F=4mA, V_{CE}=3.5V$. The calibration standard for PTR sensitivity is $532 \mu A$ when irradiated with a $0.555mW/cm^2$ light source. When exposed to the uniform light, Collector Current Ratio of 2 Photo transistors must be 1.0 almost. Maximum and minimum values must include all variations due to mechanical electrical sorting and measurement error.

Supplement

1.Parts (1) Chip

Type	Material	Peak Wavelength
IR	GaAs or GaAlAs	940nm

(2) Material

Type	Lead frame	Wire	Package
Material	SPCC	Gold	Epoxy

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Reliability

The reliability of products shall be satisfied with items listed below.

Confidence level : 90%

LTPD : 10%

Test Items	Test Conditions	Failure Judgement Criteria	Samples(n)
			Defect (c)
Operating life test	$V_{CE}=5V$, $I_F=20mA$ $T_a : 25^{\circ}C$ 1000hrs	$I_{c(on)} \leq L \times 0.8$ $V_F \geq U \times 1.2$ $I_R \geq U \times 2$ L : Lower specification limit U : Upper specification limit	n =22 , c=0
Temperature cycle	1 cycle $-55^{\circ}C$ to $+25^{\circ}C$ to $+85^{\circ}C$ (30min) (5min) (30min) 50 cycle test		n =22 , c=0
Thermal shock	$-55^{\circ}C$ to $+85^{\circ}C$ (5min) (10 sec) (5min) 50cycle test		n =22 , c=0
High temperature storage	Temp : $+100^{\circ}C$ 1000hrs		n =22 , c=0
Low temperature storage	Temp : $-55^{\circ}C$ 1000hrs		n =22 , c=0
High temperature High humidity	$T_a : 85^{\circ}C$ RH : 85% 1000hrs		n =22 , c=0
Solder heat	Temp : $260 \pm 5^{\circ}C$ 10 sec		n =22 , c=0
Solderability	Temp : $230 \pm 5^{\circ}C$ 3 sec 4mm from the bottom of the package.	More than 90% of lead to be covered by soldering	n =22 , c=0

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