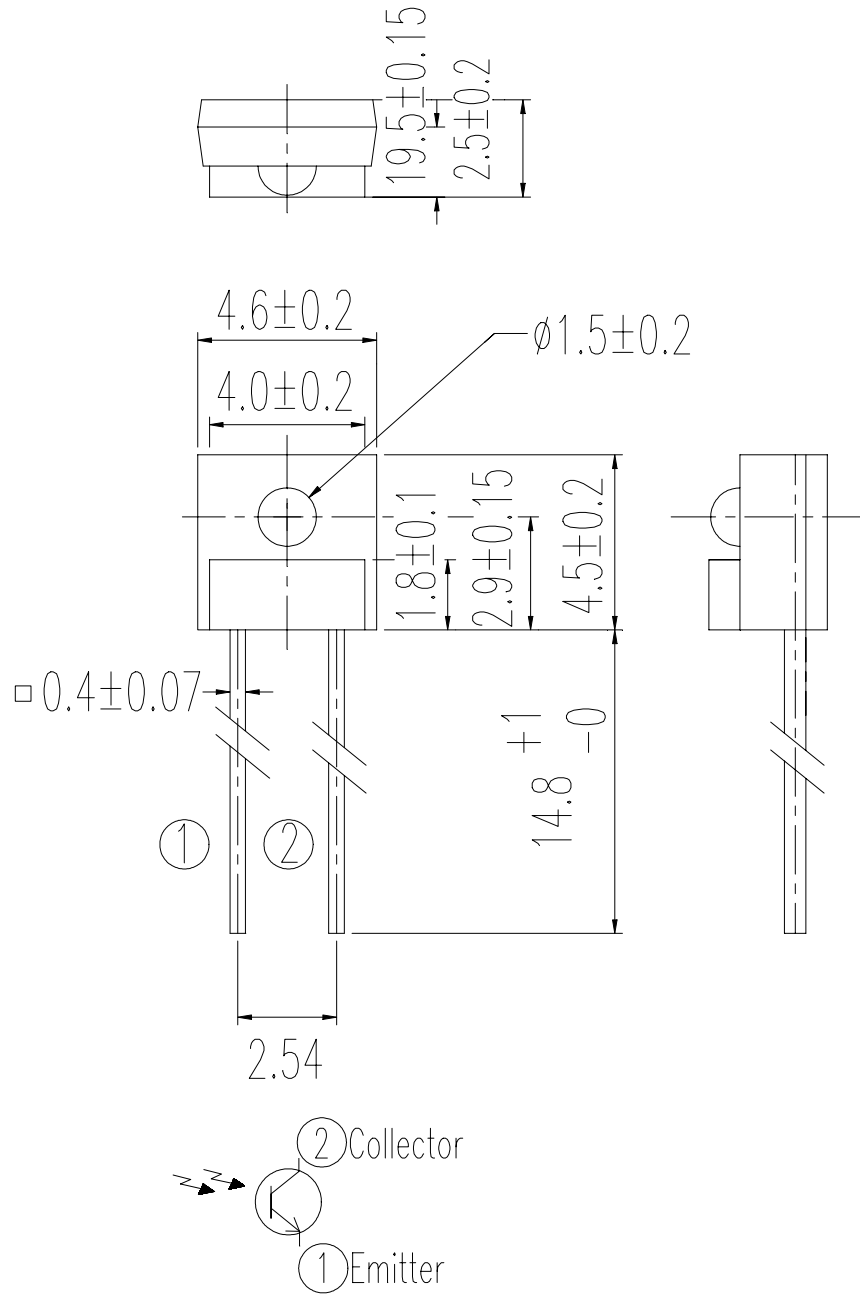


**Package Dimensions:**



**©Notes :**

- 1.All dimensions are in millimeter.
- 2.Lead spacing is measured where the lead emerge from the package .

**Description**

The **PT928-6B** is a high speed and high sensitivity single photo transistor;molded in a black plastic package with spherical side view lens.

The device is spectrally matched with IR emitters.

**Features**

- Wide angle of half sensitivity  $\theta = \pm 25^\circ$
- High sensitivity
- Fast response time

**Applications**

- Mouse
- Optoelectronic Switch
- Photo Interrupter

**Absolute Maximum Ratings**

(Ta=25°C)

ITEM	SYMBOL	RATING	UNIT
Collector Power Dissipation	Pc	75	mW
Collector-Emitter Voltage	V <sub>CEO</sub>	30	V
Emitter-Collector Voltage	V <sub>ECO</sub>	5	V
Collector Current	Ic	20	mA
Operating Temperature	Topr	-25~+85	°C
Storage Temperature	Tstg	-40~+85	°C
Soldering Temperature (1/16 inch from body for 5 seconds)	Tsol	260	°C

**Electro-Optical Characteristics**

(Ta=25°C)

Parameter		Symbol	Min	Typ	Max	Unit	Condition
Collector Dark Current		I <sub>CEO</sub>	-	-	100	nA	V <sub>CE</sub> =20V, Ee=0mW/cm <sup>2</sup>
C-E Saturation Voltage		V <sub>CE(Sat)</sub>	-	-	0.4	V	Ic=0.5mA, Ee=10mW/cm <sup>2</sup>
Light Current		I <sub>L</sub>	0.6	-	4.0	mA	V <sub>CE</sub> =5V, I <sub>F</sub> =5mA
The Wavelength of Peak Sensitivity		λ <sub>p</sub>	-	860	-	nm	---
Range of Spectral Bandwidth		λ <sub>0.5</sub>		700...1200	-	nm	---
Response Time	Rise Time	t <sub>r</sub>	-	15	-	μ Sec	V <sub>CE</sub> =5V Ic=1mA R <sub>L</sub> =1000Ω
	Fall Time	t <sub>f</sub>	-	15	-	μ Sec	
Half sensitivity angle		Δθ	-	± 25	-	°	---

## Typical Characteristics

Fig.1 Collector Power Dissipation vs. Ambient Temperature

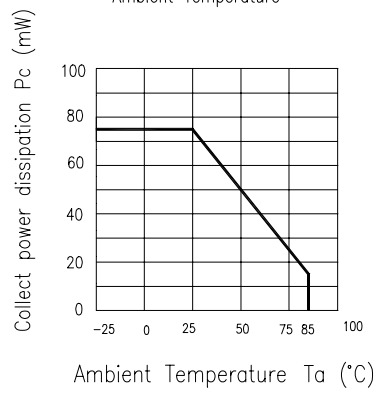


Fig.2 Collector Dark Current vs. Ambient Temperature

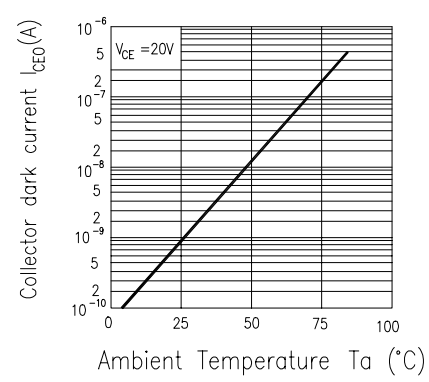


Fig. 3 Relative Collector Current vs. Ambient Temperature

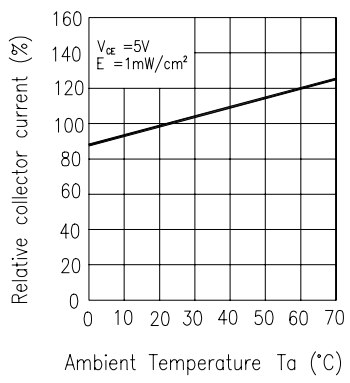


Fig.4 Collector Current vs. Irradiance

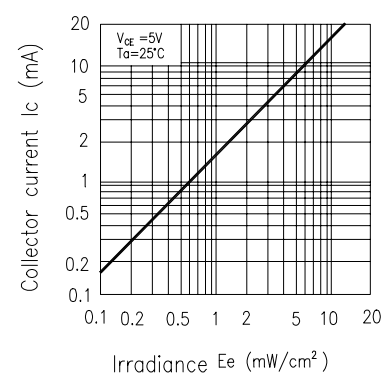


Fig.5 Spectral Sensitivity

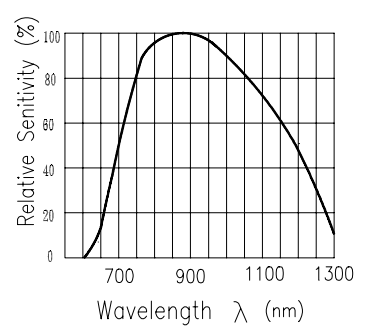
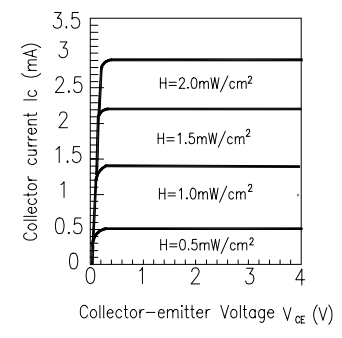
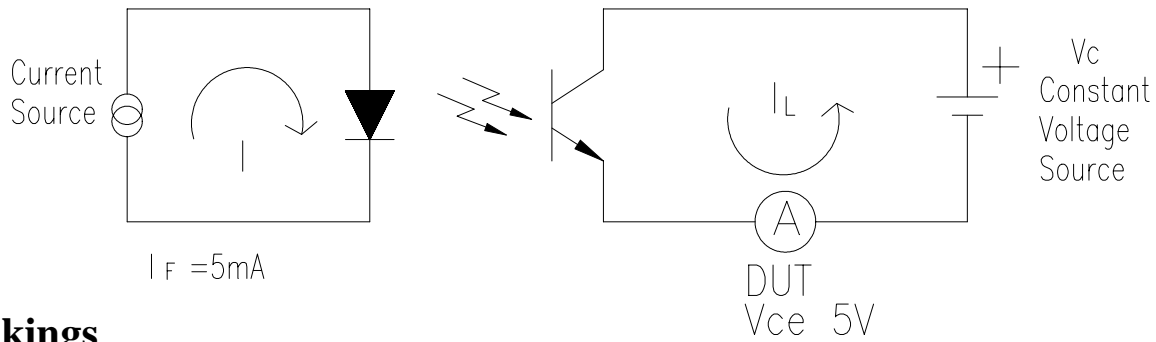


Fig.6 Collector Current vs. Collector-emitter Voltage



**Test Method**

The light current testing method for PTR:



**Rankings**

Parameter	Symbol	Min	Max	Unit	Test Condition
6-1	$I_L$	2.0	4.0	mA	$V_{CE}=5V$ $I_F=5mA$
6-2		1.8	3.5		
7-1		1.4	2.6		
7-2		1.0	2.0		
7-3		0.6	1.4		

**Supplements**

1.Parts

(1) Chip

Type	Material	Peak Wavelength
PT	Silicon	860nm

(2) Material

Type	Lead frame	Wire	Package
Material	SPCC	Gold	Epoxy

**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)
			Defective(c)
Operating life test	V <sub>CE</sub> =5V T <sub>a</sub> : 25°C 1000hrs	I <sub>L</sub> ≤ L x 0.8  L : Lower specification limit	n =22 , c=0
Temperature cycle	1cycle -55°C to+25°C to +85°C (30min) (5min) (30min) 50 cycle test		n =22 , c=0
Thermal shock	-55°C to + 85°C (5min) (5min) 50cycle test		n =22 , c=0
High temperature storage	Temp : +100°C 1000hrs		n =22 , c=0
Low temperature storage	Temp : -55°C 1000hrs		n =22 , c=0
High temperature High humidity	T <sub>a</sub> : 85°C RH : 85% 1000hrs		n =22 , c=0
Solder heat	Temp : 260 ± 5°C 10 sec		n =22 , c=0
Solderability	Temp : 230 ± 5°C 3 sec		n =22 , c=0

