



## Technical Data Sheet

# 1.5mm Side Looking Phototransistor

### PT928-6C-F

#### Features

- Fast response time
- High sensitivity
- Small junction capacitance
- Pb free
- This product itself will remain within RoHS compliant version.



#### Descriptions

PT928-6C-F is a phototransistor in miniature package which is molded in a water clear plastic with spherical top view lens. The device is spectrally matched to infrared emitting diode.

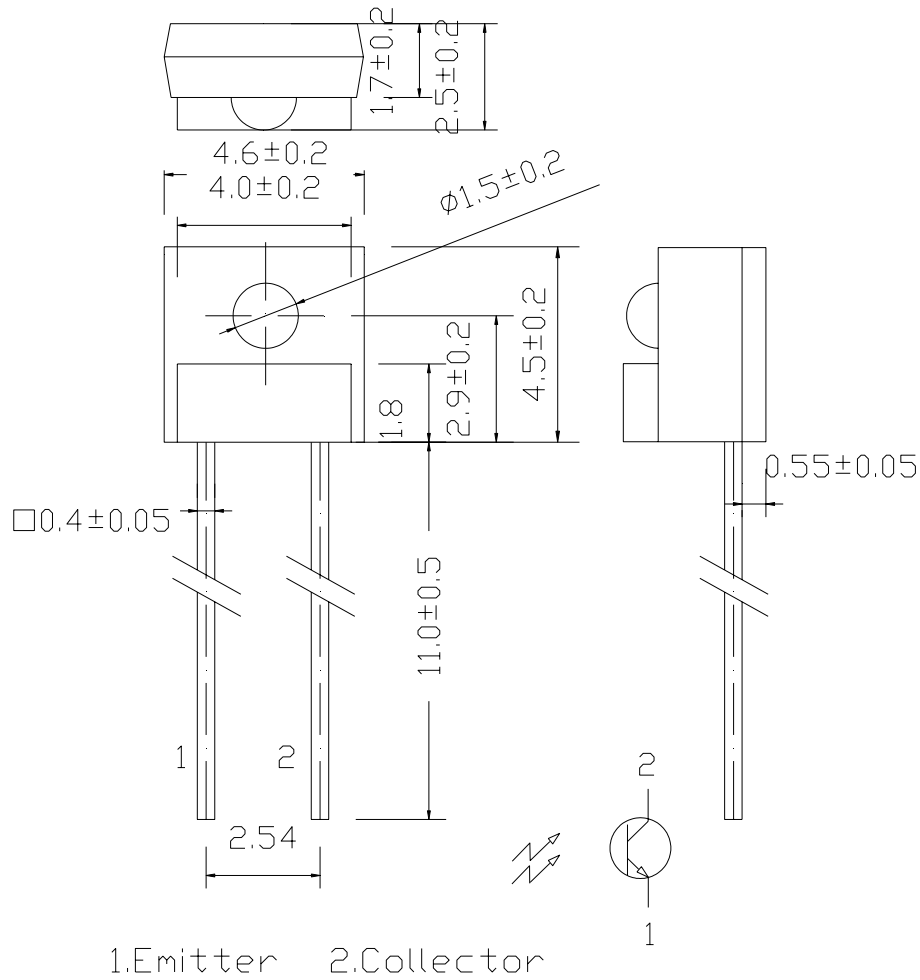
#### Applications

- Optoelectronic switch
- VCR , Video Camera
- Floppy disk drive
- Infrared applied system

#### Device Selection Guide

LED Part No.	Chip	Lens Color
	Material	
PT928-6C-F	Silicon	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)**

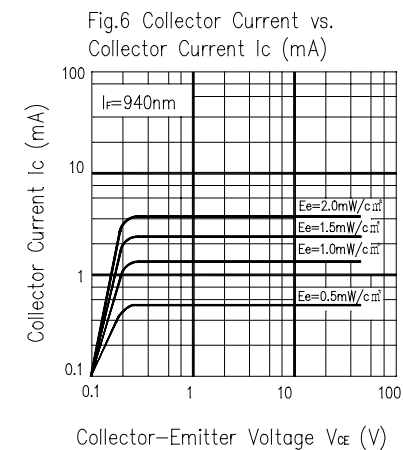
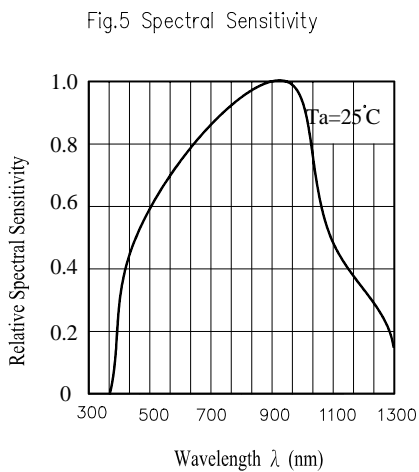
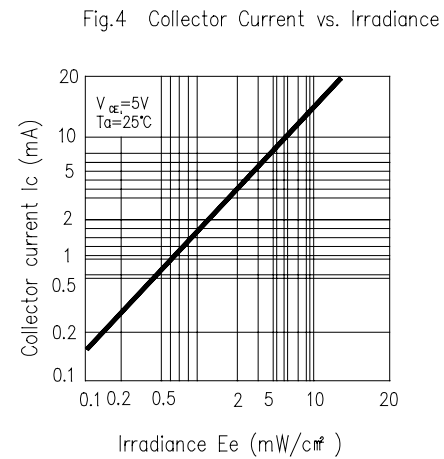
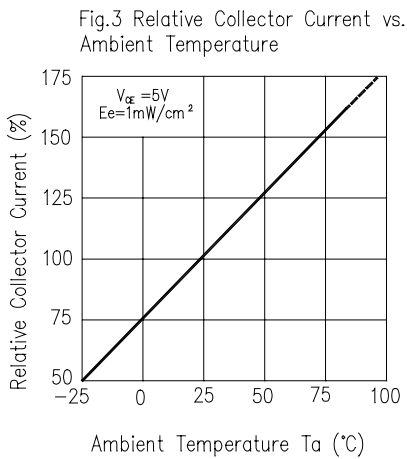
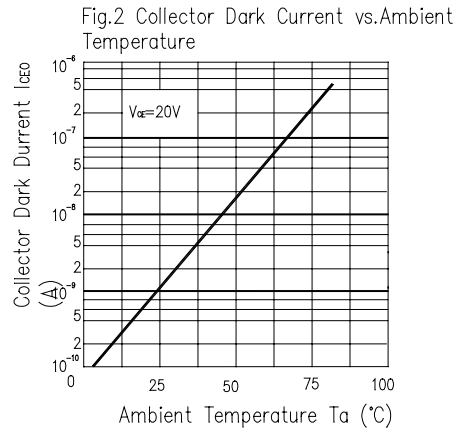
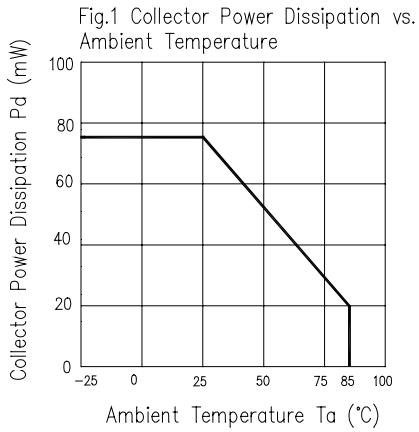
Parameter	Symbol	Rating	Units
Collector-Emitter Voltage	V <sub>CEO</sub>	30	V
Emitter-Collector-Voltage	V <sub>ECO</sub>	5	V
Collector Current	I <sub>C</sub>	40	mA
Operating Temperature	T <sub>opr</sub>	-25 ~ +85°C	°C
Storage Temperature	T <sub>stg</sub>	-40 ~ +85°C	°C
Lead Soldering Temperature	T <sub>sol</sub>	260	°C
Power Dissipation at (or below) 25°C Free Air Temperature	P <sub>D</sub>	75	mW

**Notes:** \*1:Soldering time ≤ 5 seconds.

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

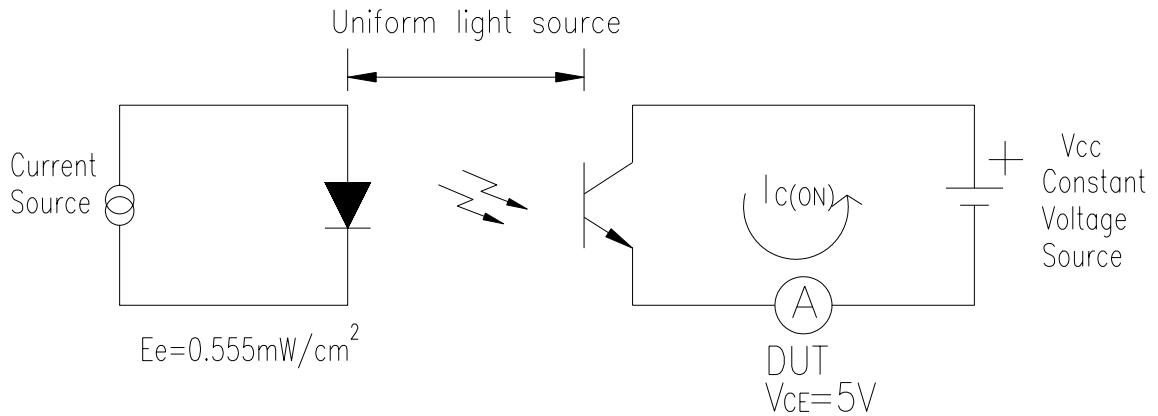
Parameter	Symbol	Condition	Min.	Typ.	Max.	Units
Collector – Emitter Breakdown Voltage	BV <sub>CEO</sub>	I <sub>C</sub> =100 μA Ee=0mW/cm <sup>2</sup>	30	---	---	V
Emitter-Collector Breakdown Voltage	BV <sub>ECO</sub>	I <sub>E</sub> =100 μA Ee=0mW/cm <sup>2</sup>	5	---	---	V
Collector-Emitter Saturation Voltage	V <sub>(CE)(sat)</sub>	I <sub>C</sub> =2mA Ee=1mW/cm <sup>2</sup>	---	---	0.4	V
Rise Time	t <sub>r</sub>	V <sub>CE</sub> =5V I <sub>C</sub> =1mA	---	15	---	μS
Fall Time	t <sub>f</sub>	RL=1000Ω	---	15	---	
Collector Dark Current	I <sub>CEO</sub>	Ee=0mW/cm <sup>2</sup> V <sub>CE</sub> =20V	---	---	100	nA
On State Collector Current	I <sub>C(on)</sub>	Ee=0.555mW/cm <sup>2</sup> V <sub>CE</sub> =5V	0.53		3.41	mA
Wavelength of Peak Sensitivity	λ <sub>p</sub>	---	---	940	---	nm
Rang of Spectral Bandwidth	λ <sub>0.5</sub>	---	400	---	1200	nm

**Typical Electro-Optical Characteristics Curves**



**Test method**

Light current test method for PT:



**Ranks**

Parameter	Symbol	Min	Max	Unit	Test condition
7-3	$I_{C(ON)}$	0.53	1.19	mA	$V_{CE} = 5V$ $E_e = 0.555 \text{ mW/cm}^2$
7-2		0.88	1.70		
7-1		1.24	2.21		
6-2		1.59	2.98		
6-1		1.77	3.41		

**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	10sec	22pcs	More than 90% of lead to be covered by soldering  $I_R \geq U \times 2$ $E_e \leq L \times 0.8$ $V_F \geq U \times 1.2$ U : Upper Specification Limit L : Lower Specification Limit	0/1
2	Temperature Cycle	H : +100°C 15mins $\updownarrow$ 5mins L : -40°C 15mins	300Cycle	22pcs		0/1
3	Thermal Shock	H :+100°C 5mins $\updownarrow$ 10secs L :-10°C 5mins	300cycle	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	$V_{CE}=5V$	1000hrs	22pcs		0/1
7	High Temperature/ High Humidity	85°C / 85% R.H	1000hrs	22pcs		0/1

