



# Technical Data Sheet

## 1.5mm Side Looking Phototransistor

**PT908-7C**

### Features

- Fast response time
- High sensitivity
- Small junction capacitance
- Pb free

### Descriptions

PT908-7C 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

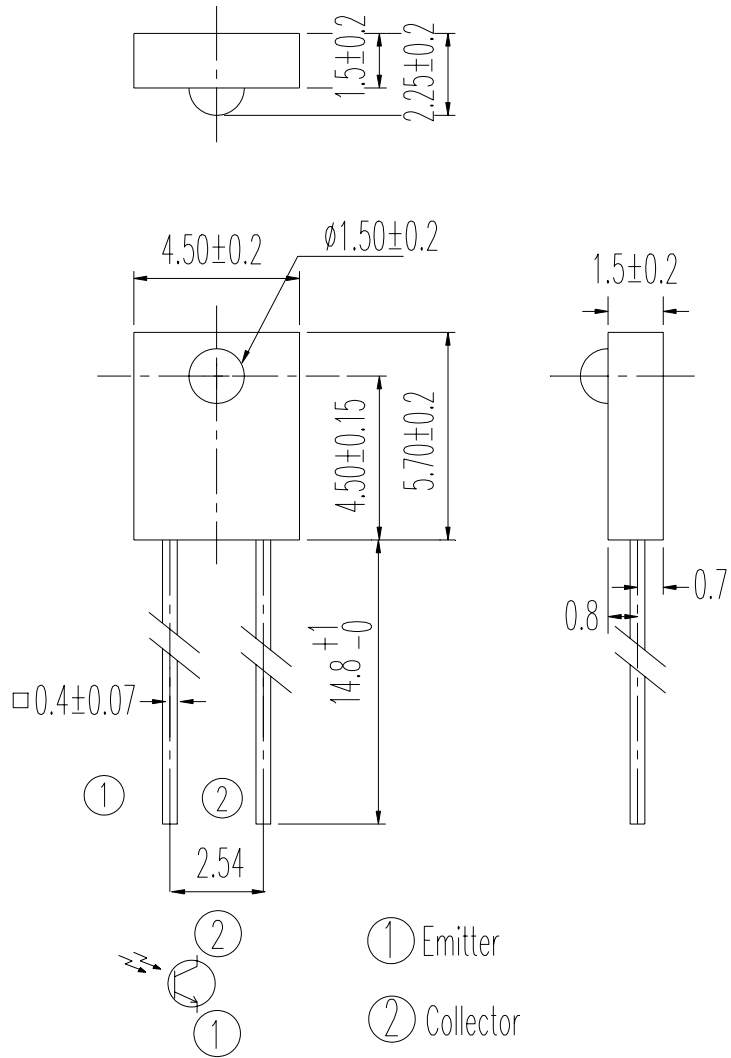
- Optoelectronic switch
- VCR , Video Camera
- Floppy disk drive
- Infrared applied system

### Device Selection Guide

| LED Part No. | Chip     | Lens Color  |
|--------------|----------|-------------|
|              | Material |             |
| PT           | Silicon  | Water Clear |

Device No:DPT-090-081

**Package Dimensions**



- Notes:**
1. All dimensions are in millimeters
  2. Tolerances unless dimensions  $\pm 0.1$  mm

Device No: DPT-090-081

**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>   | 20          | 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)<br>25°C Free Air Temperature | P <sub>c</sub>   | 75          | mW    |

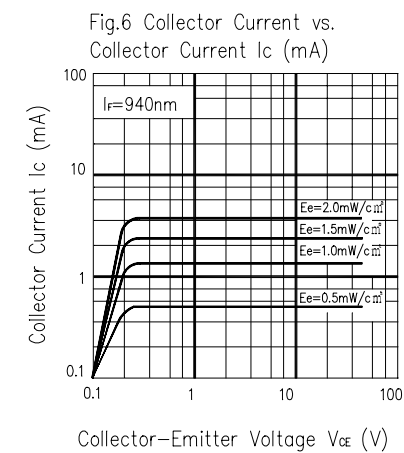
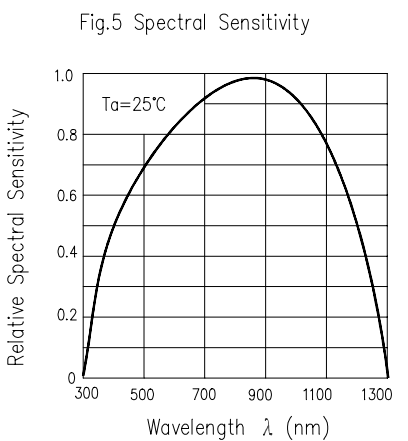
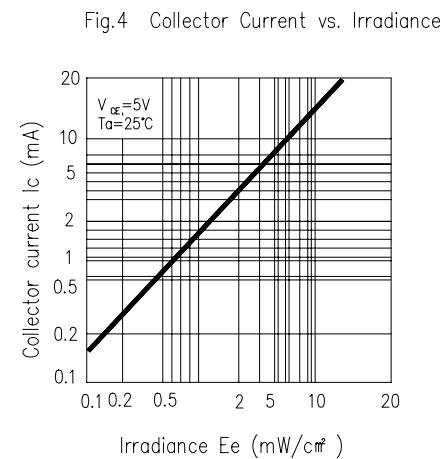
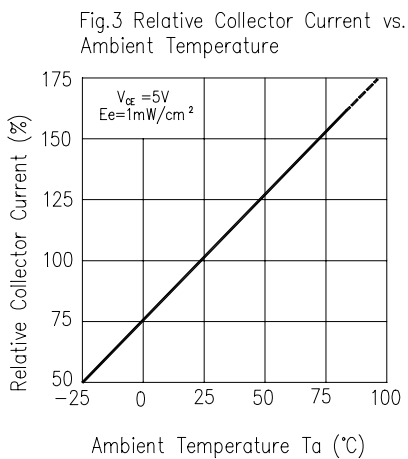
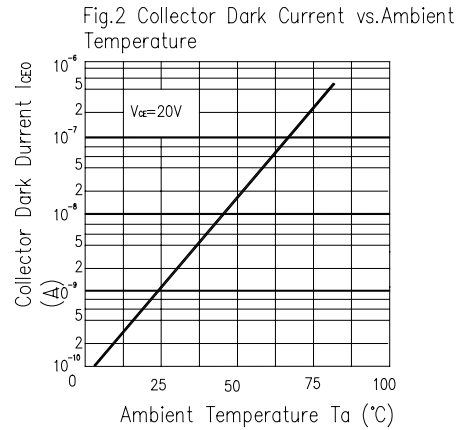
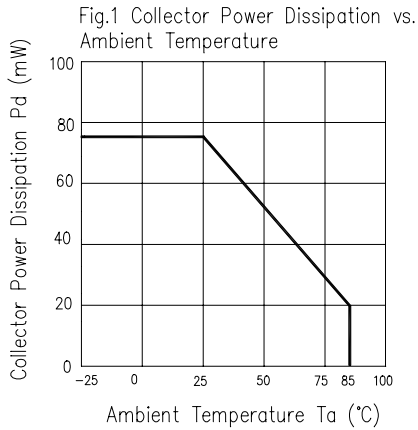
**Notes:** \*1:Soldering time ≤ 5 seconds.

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

| Parameter                            | Symbol               | Condition   | Min. | Typ. | Max. | Units |
|--------------------------------------|----------------------|---|------|------|------|-------|
| Collector-Emitter Saturation Voltage | V <sub>CE(sat)</sub> | I <sub>C</sub> =2mA<br>Ee=1mW/cm <sup>2</sup>     | ---  | ---  | 0.4  | V     |
| Rise Time                            | t <sub>r</sub>       | V <sub>CE</sub> =5V<br>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><br>V <sub>CE</sub> =20V    | ---  | ---  | 100  | nA    |
| On State Collector Current           | I <sub>C(on)</sub>   | Ee=0.555mW/cm <sup>2</sup><br>V <sub>CE</sub> =5V | 0.78 |      | 3.12 | mA    |
| Wavelength of Peak Sensitivity       | λ <sub>p</sub>       | ---   | ---  | 860  | ---  | nm    |
| Rang of Spectral Bandwidth           | λ <sub>0.5</sub>     | ---   | 400  | ---  | 1100 | nm    |

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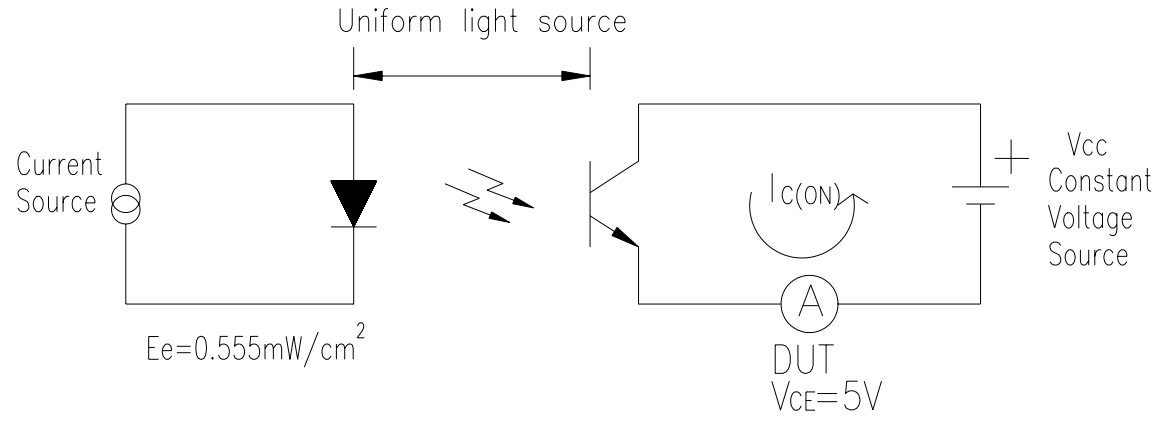
**Typical Electro-Optical Characteristics Curves**



**Device No:DPT-090-081**

**Test method**

Light current test method for PT:



**Ranks**

| Color code | Parameter | Symbol      | Min  | Max  | Unit | Test condition                    |
|------------|-----------|-------------|------|------|------|-----------------------------------|
| Black      | BIN1      | $I_{C(ON)}$ | 0.78 | 1.56 | mA   | $V_{CE}=5V$<br>$E_e=0.555mW/cm^2$ |
| Black      | BIN2      |             | 1.09 | 2.02 |      |                                   |
| Black      | BIN3      |             | 1.40 | 2.73 |      |                                   |
| Black      | BIN4      |             | 1.56 | 3.12 |      |                                   |

Device No:DPT-090-081

**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/<br>Cycles | Sample<br>Sizes | Failure<br>Judgement<br>Criteria   | Ac/Re     |
|-----|------------------------------------|--|-----------------------|-----------------|--|-----------|
| 1   | Solder Heat                        | TEMP:260°C±5°C   | 10sec                 | 22pcs           | More than<br>90% of lead<br>to be covered<br>by soldering                | 0/1       |
| 2   | Temperature Cycle                  | H : +85°C    30mins<br>↕<br>5mins<br>L : -55°C    30mins | 50Cycle               | 22pcs           |  | 0/1       |
| 3   | Thermal Shock                      | H :+100°C    5mins<br>↕<br>10secs<br>L :-10°C    5mins   | 50Cycle               | 22pcs           | I <sub>R</sub> ≥ U×2<br>E <sub>e</sub> ≤ L×0.8<br>V <sub>F</sub> ≥ U×1.2 | 0/1       |
| 4   | High Temperature Storage           | TEMP. : +100°C   | 1000hrs               | 22pcs           |  | U : Upper |
| 5   | Low Temperature Storage            | TEMP. : -55°C  | 1000hrs               | 22pcs           | Specification<br>Limit   | 0/1       |
| 6   | DC Operating Life                  | V <sub>CE</sub> =5V                                      | 1000hrs               | 22pcs           | L : Lower<br>Specification<br>Limit                                      | 0/1       |
| 7   | High Temperature/<br>High Humidity | 85°C / 85% R.H   | 1000hrs               | 22pcs           |  | 0/1       |

|   |   |
|---|---|
| <b>EVERLIGHT ELECTRONICS CO., LTD.</b><br>Office: No 25, Lane 76, Sec 3, Chung Yang Rd,<br>Tucheng, Taipei 236, Taiwan, R.O.C | Tel: 886-2-2267-2000, 2267-9936<br>Fax: 886-2267-6244, 2267-6189, 2267-6306<br>http://www.everlight.com |
|---|---|

**Device No:DPT-090-081**

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