



## ZPT054C

### Technical Data Sheet

### 5mm Silicon Phototransistor



### Descriptions

ZPT054C is a high speed and high sensitive NPN silicon phototransistor molded in a standard 5mm package.

Due to its water clear epoxy the device is sensitive to visible and near infrared radiation.

### Features

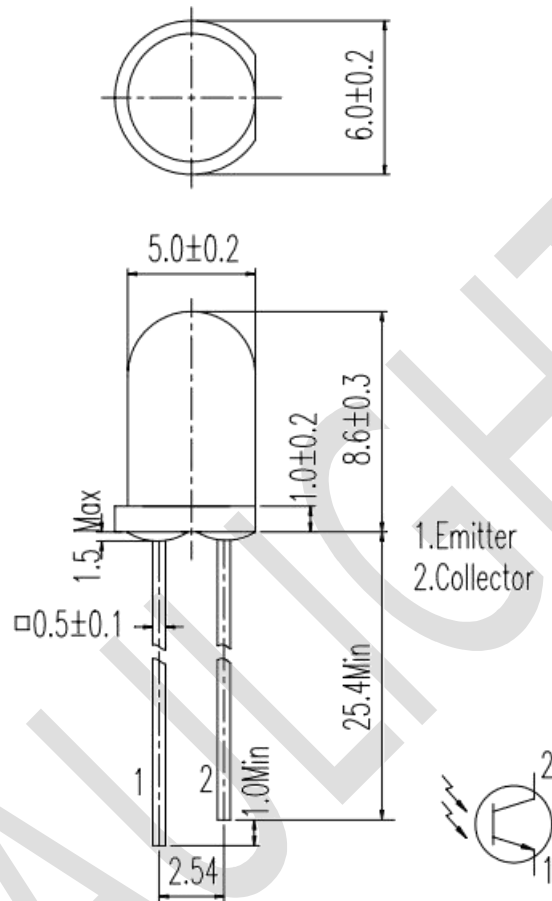
- Fast response times
- High photo sensitivity
- Copliance with EU REACH
- Pb.Free
- The product itself will remain within RoHS compliant version.
- Compliance Halogen Free. (Br<900 ppm, Cl<900ppm, Br+Cl<1500ppm)

### Applications

- Camera
- Infrared applied system



## Package Dimension



### Notes:

1. All dimensions are in millimeters
2. Tolerances unless dimensions  $\pm 0.3$  mm
3. Lead spacing is measured where the lead emerge from the package



## Absolute Maximum Ratings (Ta=25°C)

Parameter (Ta=25°C)	Symbol	Ratings	Unit
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>	-40 ~ +85	°C
Storage Temperature	T <sub>stg</sub>	-40 ~ +100	°C
Lead Soldering Temperature*1	T <sub>sol</sub>	260	°C
Power Dissipation at (or below)25°C Free Air Temperature	P <sub>c</sub>	75	mW

Notes: \*1: Soldering time  $\leq$  5 seconds.



## Electro-Optical Characteristics

Parameter (Ta=25°C)	Symbol	Condition	Min.	Typ.	Max.	Unit
Collector – Emitter Breakdown Voltage	$BV_{CEO}$	$I_C=100 \mu A$ $E_e=0mW/cm^2$	30	--	--	V
Emitter-Collector Breakdown Voltage	$BV_{ECO}$	$I_E=100 \mu A$ $E_e=0mW/cm^2$	5	--	--	V
Collector-Emitter Saturation Voltage	$V_{CE}(sat)$	$I_C=2mA$ $E_e=1mW/cm^2$	--	--	0.4	V
Rise Time	$t_r$	$V_{CE}=5V$	--	15	--	$\mu S$
Fall Time	$t_f$	$I_C=1mA$ $R_L=1000\Omega$	--	15	--	
Collector Dark Current	$I_{CEO}$	$E_e=0mW/cm^2$ $V_{CE}=20V$	--	--	100	nA
On State Collector Current	$I_C(on)$	$E_e=1mW/cm^2$ $V_{CE}=5V$	1.77	3.15	5.07	mA
Wavelength of Peak Sensitivity	$\lambda_p$	--	--	940	--	nm
Rang of Spectral Bandwidth	$\lambda_{0.5}$	--	400	--	1100	nm

Note:

Tolerance of Luminous Intensity:  $\pm 10\%$

Tolerance of Dominant Wavelength:  $\pm 1nm$

Tolerance of Forward Voltage:  $\pm 0.1V$



## Rank

Parameter	Symbol	Condition	Min.	Max.	Unit
J	$I_{C(ON)}$	VCE=5V Ee=1mW/c m <sup>2</sup>	1.77	3.61	mA
K	$I_{C(ON)}$	VCE=5V Ee=1mW/c m <sup>2</sup>	2.67	5.07	mA

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## Typical Electro-Optical Characteristics Curves

Fig.1 Collector Power Dissipation vs. Ambient Temperature

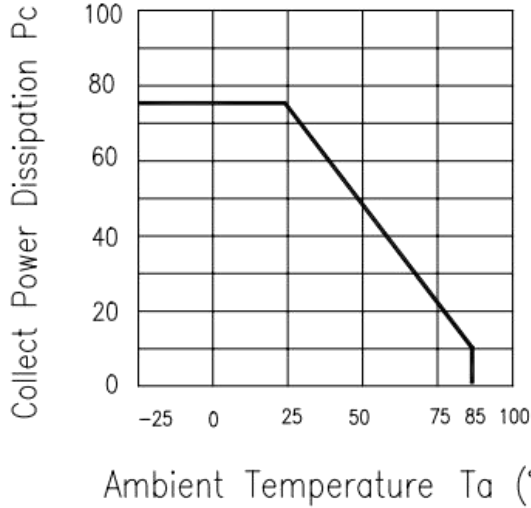


Fig.2 Collector Dark Current vs. Ambient Temperature

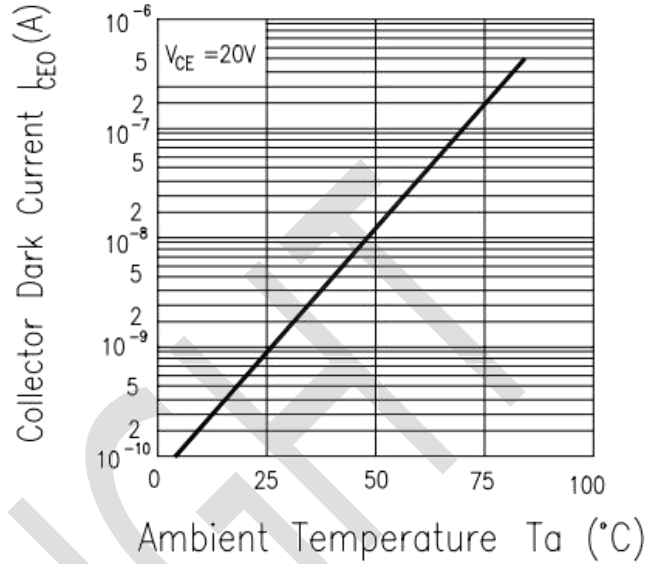


Fig. 3 Relative Collector Current vs. Ambient Temperature

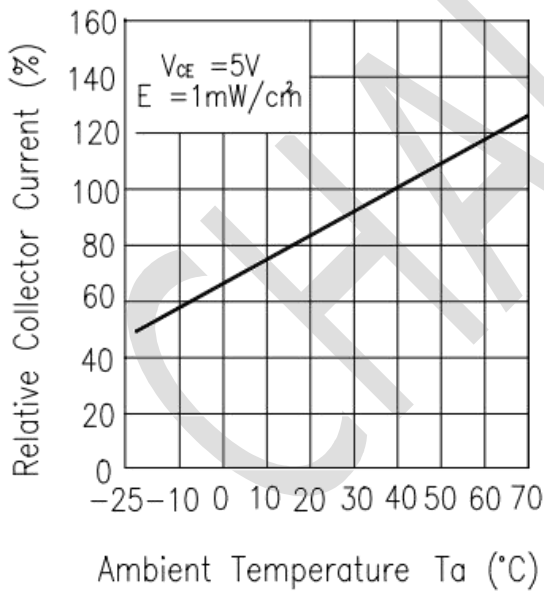


Fig.4 Collector Current vs. Irradiance

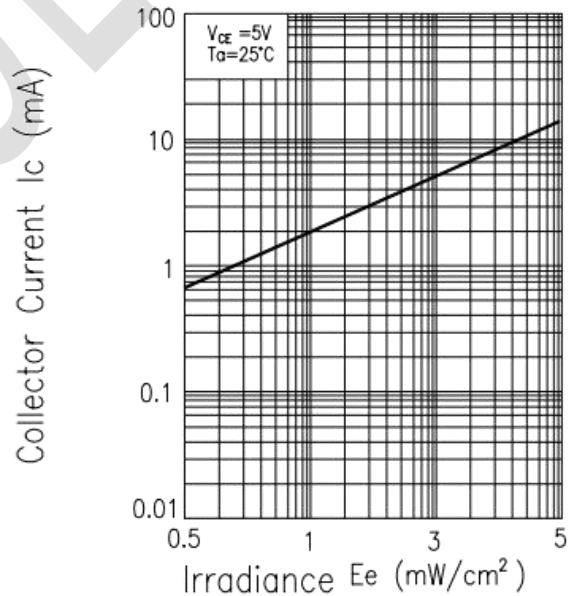




Fig.5 Spectral Sensitivity

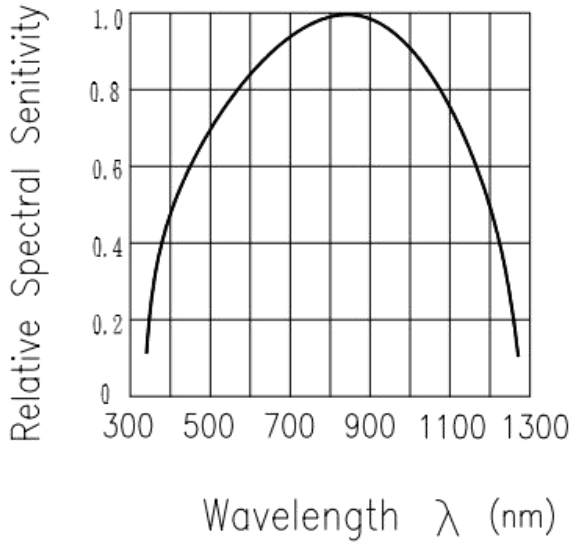
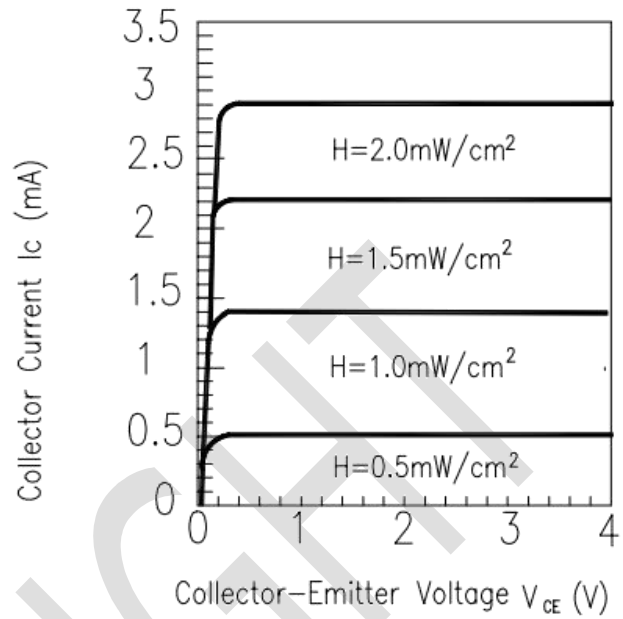


Fig.6 Collector Current vs. Collector-Emitter Voltage





## Packing Quantity Specification

1. 1000PCS/1bag, 4bags/1 Box
2. 10BOXES/1 Carton

## Notes

1. Above specification may be changed without notice. CHAU LIGHT will reserve authority on material change for above specification.
2. When using this product, please observe the absolute maximum ratings and the instruction for using outlined in these specification sheets. CHAU LIGHT 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.
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