

Photo Transistor

0-05-08-08

Module No.: WPTS-450W

1. General Description:

The WPTS-450W is a NPN silicon phototransistor mounted in a compact black epoxy encapsulation. With daylight filter, this phototransistor is only sensitive to infrared rays. This phototransistor permits medium angular response.

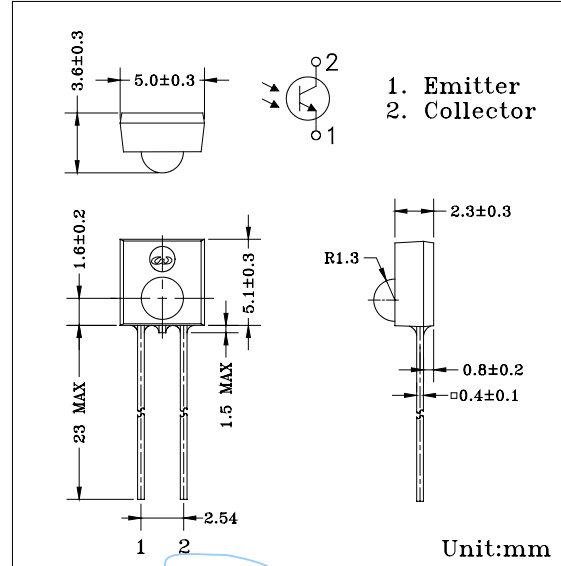
2. Features

- Medium beam angle ($\pm 45^\circ$)
- Side looking package
- Capable of pulse operation
- Low profile
- Low cost

3. Applications

- ☐ Remote control sensors
- ☐ Card readers
- ☐ Optical switches

Dimensions



4. Absolute Maximum Ratings

(Ta=25°C)

Parameter	Symbol	Ratings	Unit
Collector-Emitter Voltage	V _{CEO}	30	V
Emitter-Collector Voltage	V _{ECO}	5	V
Collector Current	I _C	20	mA
Collector Power Dissipation	P _D	100	mW
Operating Temperature	T _{opr}	-25 ~ +65	°C
Storage Temperature	T _{stg}	-25 ~ +85	°C
Soldering Temperature *1	T _{sol}	260	°C

*1 At the position of 2mm from the bottom of the package within 5 seconds.

5. Electro-optical Characteristics

(Ta=25°C)

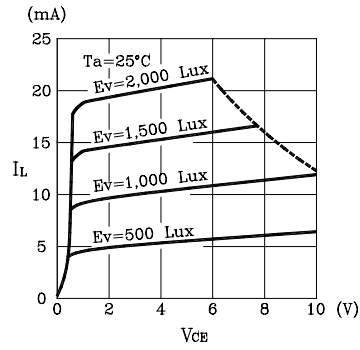
Parameter	Symbol	Testing Conditions	Min.	Typ.	Max.	Unit
Collector Light Current	I _C	V _{CE} =3V, E _v =1000Lux, (E _e =5mW/cm ²) *2	5	10		mA
Collector Dark Current	I _{CEO}	V _{CE} =10V, E _e =0 *2		1	100	nA
Collector-Emitter Saturation Voltage	V _{CE(sat)}	I _C =0.1mA, E _v =1000Lux, E _e =5mW/cm ² *2			0.3	V
Peak Sensitivity Wavelength	λ _p			880		nm
Spectral Sensitivity	Δλ			700 ~ 1050		nm
Angular Response	Δθ			±45		deg.
Rising Response Time	t _r	V _{CC} =5V, I _C =0.5mA,		2.5		μs
Falling Response Time	t _f	R _L =100Ω		3.8		μs

*2 E_v, E_e are illuminance irradiant by CIE standard light source A (tungsten lamp) at 2856K

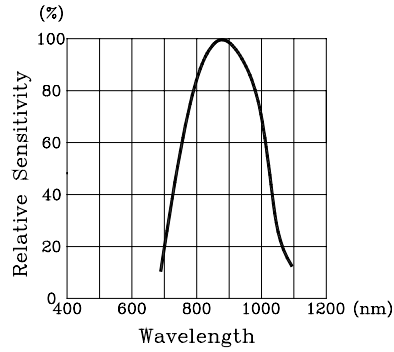
Photo Transistor

Module No.: WPTS-450W

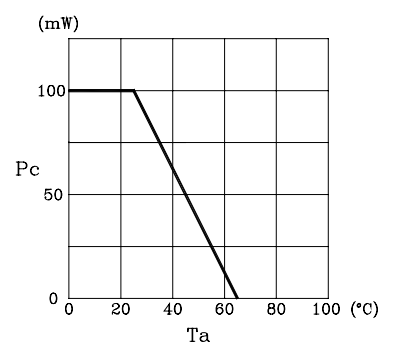
Light Current vs
Collector-Emitter Voltage



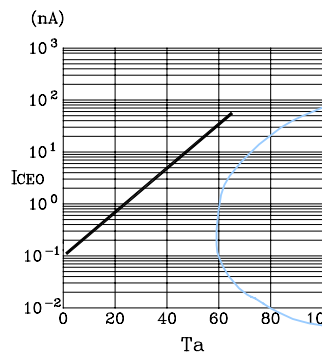
Spectral Sensitivity



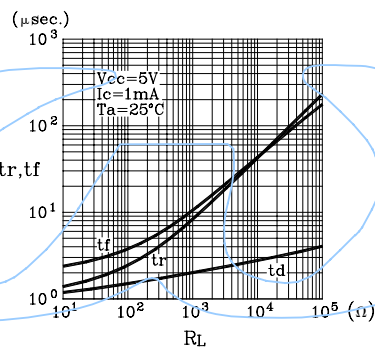
Power Dissipation vs
Ambient Temperature



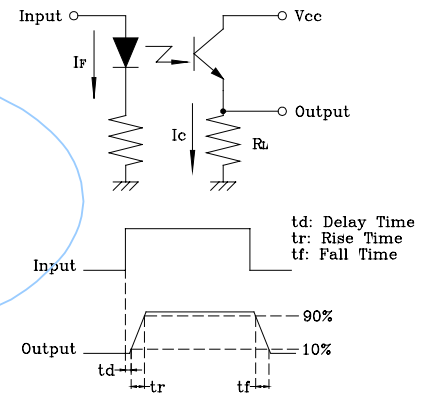
Dark Current vs
Ambient Temperature



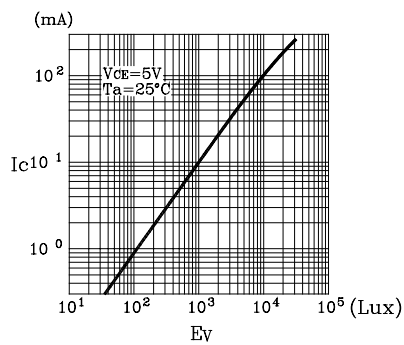
Response Time vs
Load Resistance



Response Time Test Conditions



Collector Current vs
Luminous Incidence



Radiation Diagram

