

# ST - 309

The ST - 309 is a double type high - sensitivity Silicon phototransistor. This phototransistor is compact size

### FEATURES

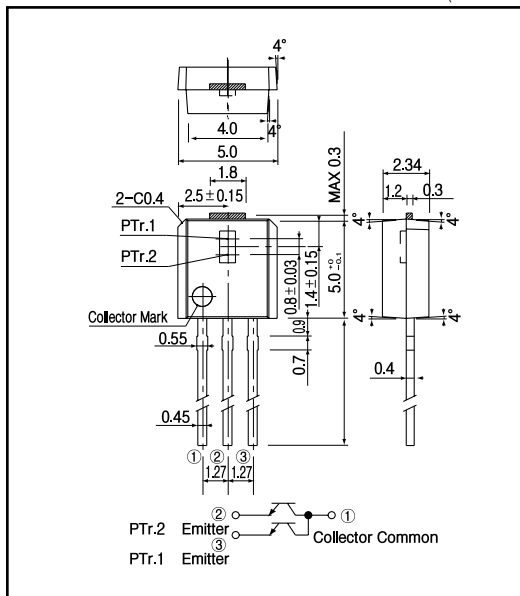
- Side - viewing plastic package
- Built - in 2ch phototransistors

### APPLICATIONS

- Optical mouses
- Encoders

### DIMENSIONS

(Unit : mm)



### MAXIMUM RATINGS

(Ta=25 )

Item	Symbol	Rating	Unit
C - E voltage	V <sub>CEO</sub>	30	V
E - C voltage	V <sub>ECO</sub>	4	V
Collector current	I <sub>c</sub>	30	mA
Collector power dissipation	P <sub>c</sub>	-	mW
Operating temp.	T <sub>opr.</sub>	- 25 ~ + 85	
Storage Temp.	T <sub>stg.</sub>	- 30 ~ + 100	
Soldering temp. *1	T <sub>sol.</sub>	260	

\*1. For MAX.5 seconds at the position of 2 mm from the package

### ELECTRO-OPTICAL CHARACTERISTICS

(Ta=25 )

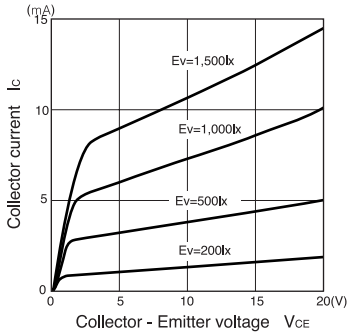
Item	Symbol	Conditions	Min.	Typ.	Max.	Unit.
Collector dark current	I <sub>CEO</sub>	V <sub>CEO</sub> = 10V			0.5	μA
Light current	I <sub>CEL1</sub>	V <sub>CE</sub> = 5V, E <sup>1/2</sup>	40		115	μA
Light current ratio	I <sub>CEL2</sub> /I <sub>CEL1</sub>		0.8		1.2	
Switching speeds	Rise time	V <sub>CC</sub> = 10V, I <sub>c</sub> = 5mA, R <sub>L</sub> = 100		8		μsec.
	Fall time			9		μsec.
Spectral sensitivity		10%		400 1100		nm
Peak wavelength	p			800		nm
Half angle				± 60		deg.

\*2. I<sub>CEL</sub> of PTR1    \*3. Setup luminous intensity by standard devices.

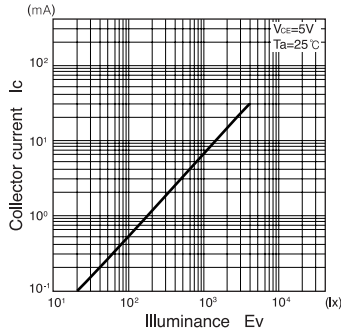
Photo transistors

ST - 309

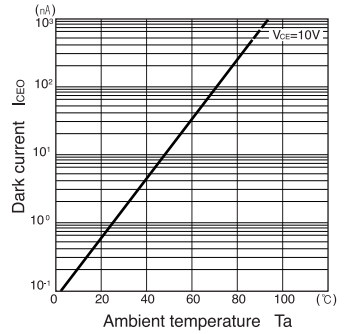
**Collector current Vs. Collector - Emitter voltage**



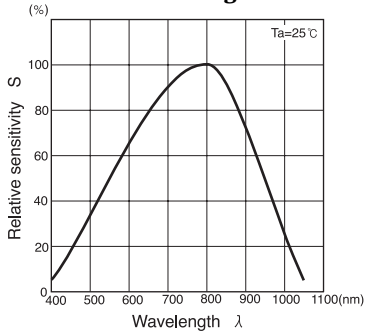
**Collector current Vs. Illuminance**



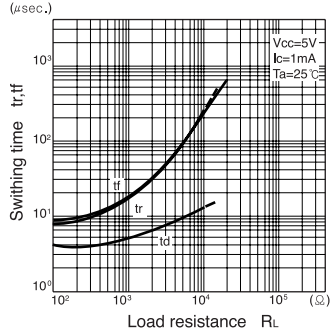
**Dark current Vs. Ambient temperature**



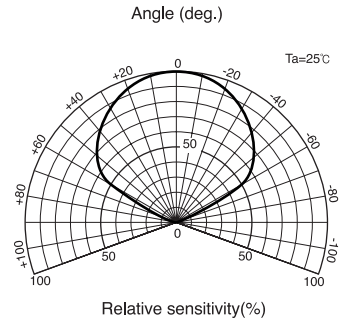
**Relative sensitivity Vs. Wavelength**



**Switching time vs. Load resistance**



**Radiant Pattern**



**Collector power dissipation Vs. Ambient temperature**

