

# ST - 1KA · ST - 1KB

The ST - 1KA and 1KB are high - sensitivity NPN silicon phototransistors mounted in durable, hermetically sealed TO - 18 metal cans, which provide years of reliable performance, even under demanding conditions such as use out - doors.

### FEATURES

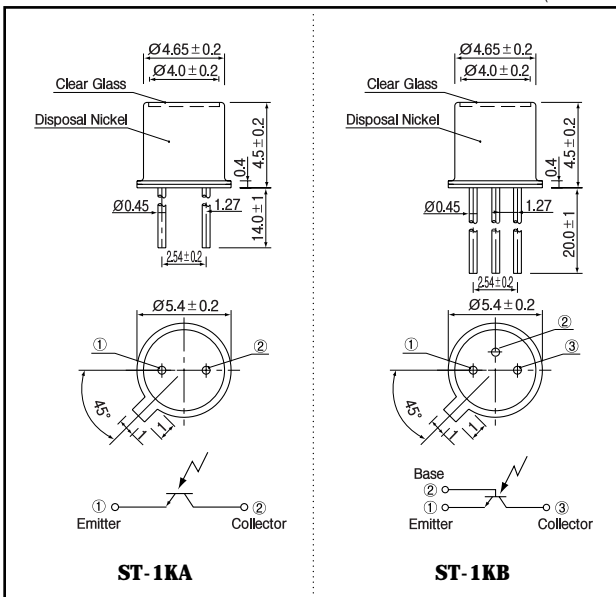
- Wide angular response
- Durable
- High reliability in demanding environments
- Two leads (Collector, Emitter) ST - 1KA
- Three leads (Collector Emitter, Base) ST - 1KB

### APPLICATIONS

- Optical counters
- Optical detectors
- Infrared sensors
- Fiber optic communications

### DIMENSIONS

(Unit : mm)



### MAXIMUM RATINGS

(Ta=25 )

Item	Symbol	Rating	Unit
C - E voltage	V <sub>CEO</sub>	40	V
E - C voltage	V <sub>ECC</sub>	4	V
Collector current	I <sub>c</sub>	50	mA
Collector power dissipation	P <sub>c</sub>	150	mW
Operating temp.	T <sub>opr.</sub>	- 30 - +100	
Storage Temp.	T <sub>stg.</sub>	- 50 - +150	
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 )

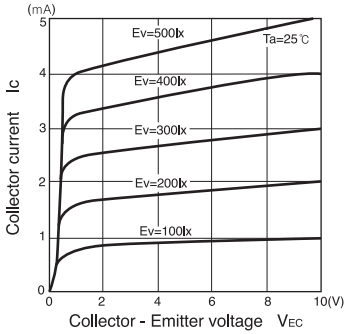
Item	Symbol	Conditions	Min.	Typ.	Max.	Unit.
Collector dark current	I <sub>CEO</sub>	V <sub>CEO</sub> =10V		1	200	nA
Light current	I <sub>L</sub>	V <sub>CE</sub> =10V, 200lx <sup>2</sup>	0.5	2.0	5.0	mA
C - E saturation voltage	V <sub>CE(sat)</sub>	I <sub>c</sub> =2mA, 2,000lx <sup>2</sup>		0.2	0.4	V
Switching speeds	Rise time	V <sub>CC</sub> =10V, I <sub>c</sub> =5mA, R <sub>L</sub> =100		0.8		µsec.
	Fall time			10		µsec.
Spectral sensitivity				500 - 1,050		nm
Peak wavelength	p			880		nm
Half angle				± 50		deg.

\*2. Color temp. =2856K standard Tungsten lamp

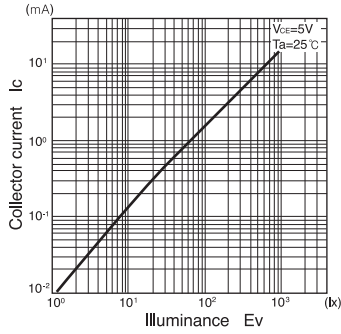
Photo transistors

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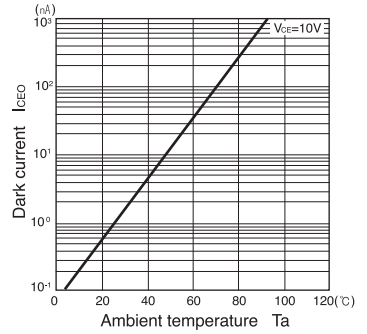
**Collector current Vs. Collector - Emitter voltage**



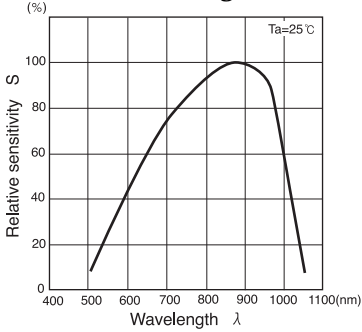
**Collector current Vs. Illuminance**



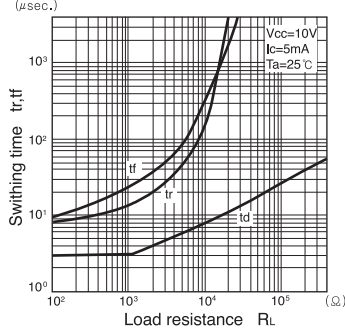
**Dark current Vs. Ambient temperature**



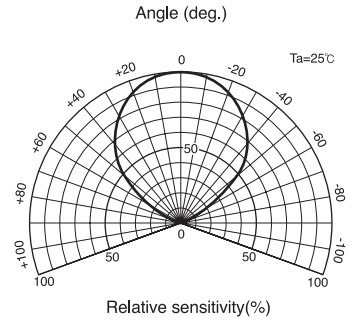
**Relative sensitivity Vs. Wavelength**



**Switching time Vs. Load resistance**



**Radiant Pattern**



**Collector power dissipation Vs. Ambient temperature**

