

# ST - 1KL3A · ST - 1KL3B

The ST - 1KL3A and 1KL3B are high - sensitivity NPN silicon phototransistors mounted in durable, hermetically sealed TO - 18 metal can which provide years of reliable performance, even under demanding conditions such as use outdoors.

### FEATURES

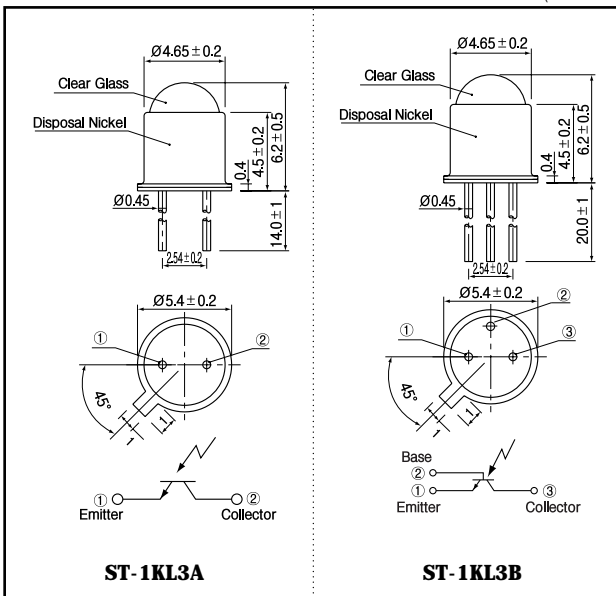
- Narrow angular response
- Durable
- High reliability in demanding environments
- Two leads (Collector, Emitter) ST - 1KL3A
- Three leads (Collector, Emitter, Base) ST - 1KL3B

### APPLICATIONS

- Optical switches
- Optical detectors
- Infrared sensors
- Encoders
- Smoke detectors

### DIMENSIONS

(Unit : mm)



### MAXIMUM RATINGS

(Ta=25 )

Item	Symbol	Rating	Unit
C - E voltage	$V_{CE0}$	40	V
E - C voltage	$V_{EC0}$	6	V
Collector current	$I_c$	50	mA
Collector power dissipation	$P_c$	150	mW
Operating temp.	$T_{opr.}$	- 30 ~ + 100	
Storage Temp.	$T_{stg.}$	- 50 ~ + 150	
Soldering temp. *1	$T_{sol.}$	260	

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

### ELECTRO-OPTICAL CHARACTERISTICS

(Ta=25 )

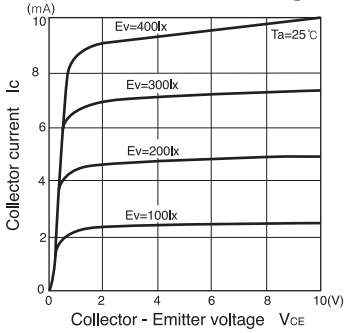
Item	Symbol	Conditions	Min.	Typ.	Max.	Unit.
Collector dark current	$I_{CE0}$	$V_{CE0} = 10V$		1	200	nA
Light current	$I_L$	$V_{CE} = 10V, 200lx^{-2}$	1.5	5.0	15	mA
C - E saturation voltage	$V_{CE(sat)}$	$I_c = 5mA, 2,000lx^{-2}$		0.2	0.4	V
Switching speeds	Rise time	$V_{CC} = 10V, I_c = 5mA, R_L = 100$		3.2		µsec.
	Fall time			4.8		µsec.
Spectral sensitivity				500 - 1,050		nm
Peak wavelength	$p$			880		nm
Half angle				± 6		deg.

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

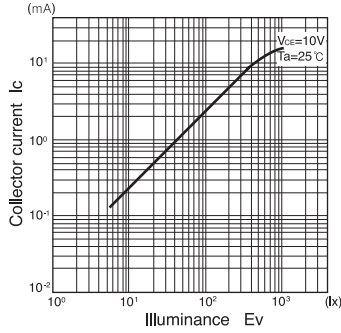
# Photo transistors

ST - 1KL3A · ST - 1KL3B

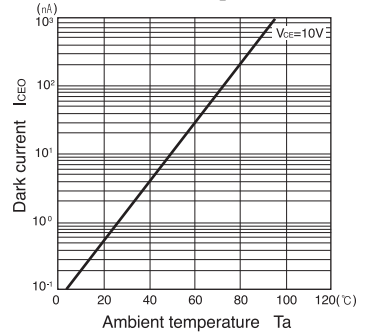
**Collector current Vs. Collector - Emitter voltage**



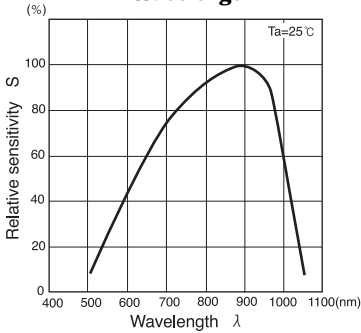
**Collector current Vs. Illuminance**



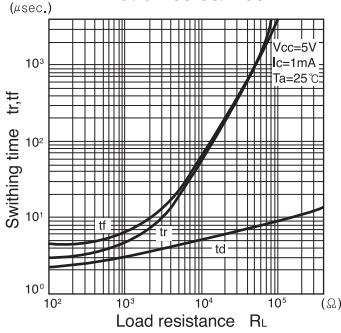
**Dark current Vs. Ambient temperature**



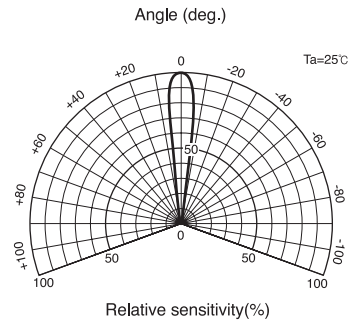
**Relative sensitivity Vs. Wavelength**



**Switching time vs. Load resistance**



**Radiant Pattern**



**Collector power dissipation Vs. Ambient temperature**

