

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

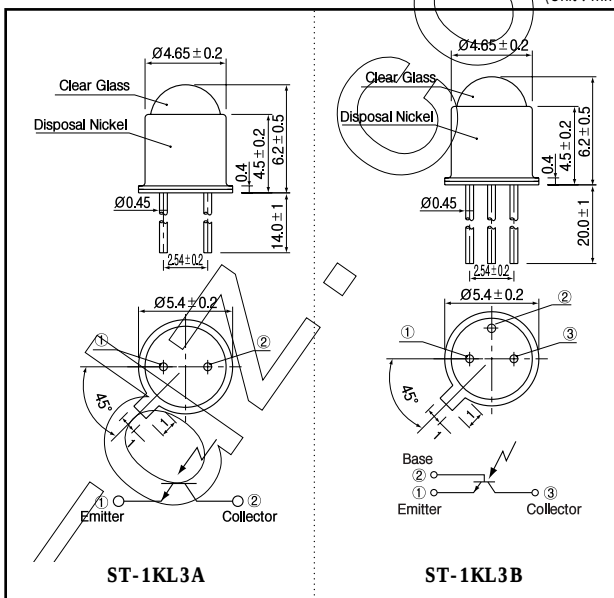
- Narrow angular response
- Durable
- High reliability in demanding environments
- Two leads (Collector, Emitter) ST - 1KL3A
- Three leads (Collector, Emitter, Base) ST - 1KL3B

APPLICATIONS

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

DIMENSIONS

(Unit : mm)



MAXIMUM RATINGS

(Ta = 25°C)

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	°C
Storage Temp.	$T_{stg.}$	- 50 ~ + 150	°C
Soldering temp. ^{*1}	$T_{sol.}$	260	°C

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

ELECTRO-OPTICAL CHARACTERISTICS

(Ta = 25°C)

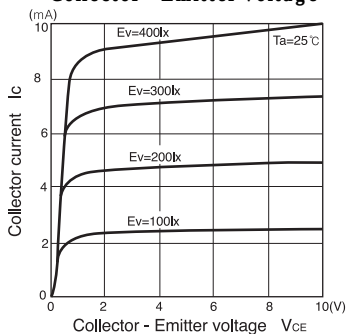
Item	Symbol	Conditions	Min.	Typ.	Max.	Unit.
Collector dark current	I_{CE0}	$V_{CE0} = 10V$		1	200	nA
Light current	I_L	$V_{CE} = 10V, 200lx^{-1}$	1.5	5.0	15	mA
C - E saturation voltage	$V_{CE(sat)}$	$I_C = 5mA, 2,000lx^{-1}$		0.2	0.4	V
Switching speeds	Rise time	$V_{CC} = 10V, I_C = 5mA, R_L = 100\Omega$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

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

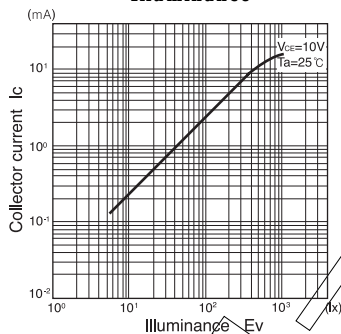
Photo transistors

ST - 1KL3A · ST - 1KL3B

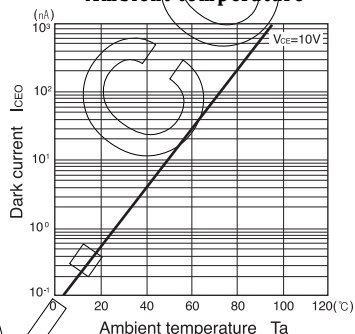
**Collector current Vs.
Collector - Emitter voltage**



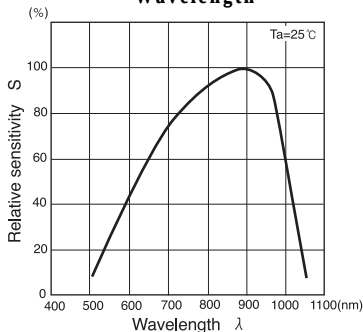
**Collector current Vs.
Illuminance**



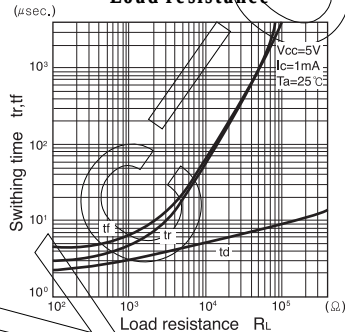
**Dark current Vs.
Ambient temperature**



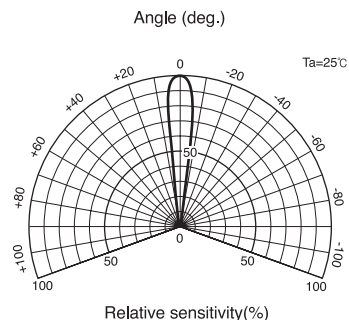
**Relative sensitivity Vs.
Wavelength**



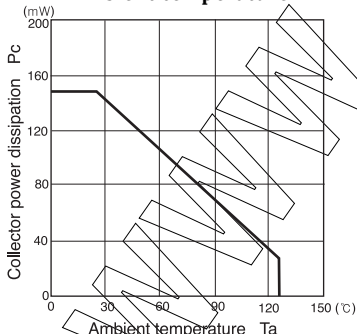
**Switching time vs.
Load resistance**



Radiant Pattern



**Collector power dissipation Vs.
Ambient temperature**



*** Switching time measurement circuit**

