Photo transistors

KODENSHI

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

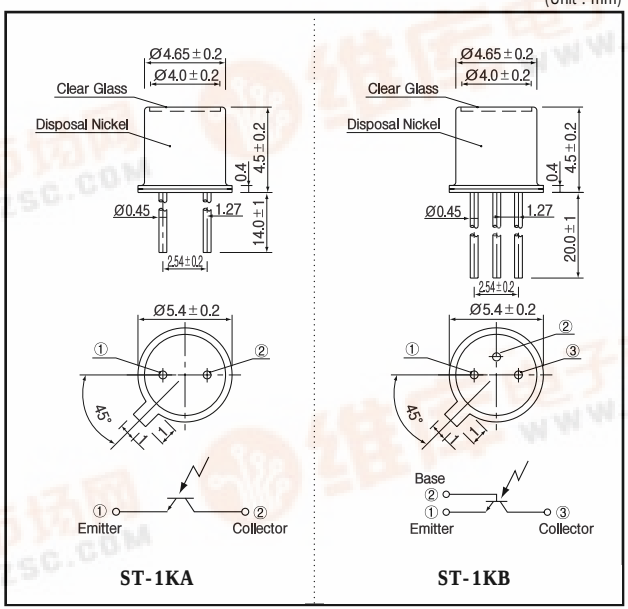
- Wide angular response
- Durable
- High reliability in demanding environments
- Two leads (Collector, Emitter) ST - 1KA
- Three leads (Collector Emitter, Base) ST - 1KB

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_{CEO}	40	V
E - C voltage	V_{ECO}	4	V
Collector current	I_C	50	mA
Collector power dissipation	P_C	150	mW
Operating temp.	Topr.	- 30 ~ + 100	℃
Storage Temp.	Tstg.	- 50 ~ + 150	℃
Soldering temp. *1	Tsol.	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_{CEO}	V_{CEO}=10V		1	200	nA
Light current		I_L	V_{CE}=10V, 200lx*2	0.5	2.0	5.0	mA
C - E saturation voltage		V_{CE}(sat)	I_C=2mA, 2,000lx*2		0.2	0.4	V
Switching speeds	Rise time	tr	V_{CC}=10V, I_C=5mA, R_L=100Ω		0.8		μsec.
	Fall time	tf			10		μsec.
Spectral sensitivity		λ			500~1,050		nm
Peak wavelength		λp			880		nm
Half anglee		△θ			±50		deg.

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

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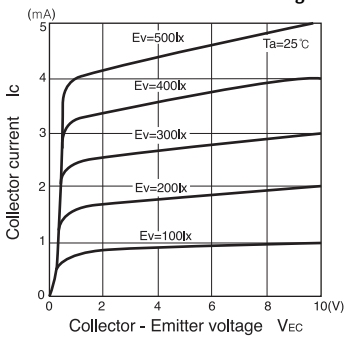
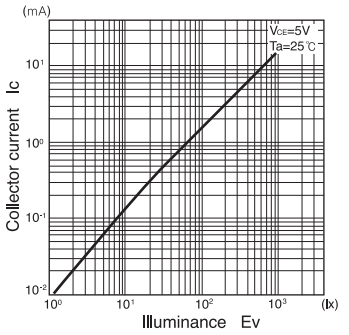
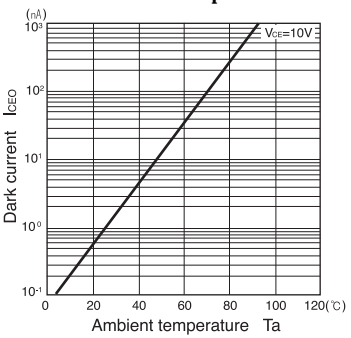
Collector current Vs. Collector - Emitter voltage



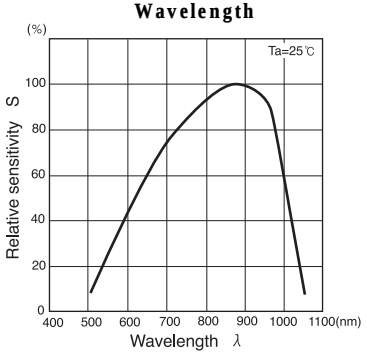
Collector current Vs. Illuminance



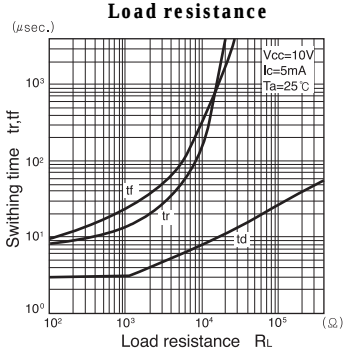
Dark current Vs. Ambient temperature



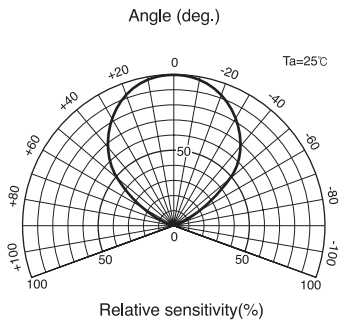
Relative sensitivity Vs. Wavelength



Swithing time Vs. Load resistance



Radiant Pattern



Collector power dissipation Vs. Ambient temperature