

Photo transistors

KODENSHI

ST - 1MLA · ST - 1MLB

The ST - 1MLA and 1MLB are high - sensitivity NPN silicon phototransistors mounted in TO - 18 Type header with clear epoxy encapsulation. The phototransistors have a wide angular response and relatively low - cost compared to TO - 18 can type devices.

FEATURES

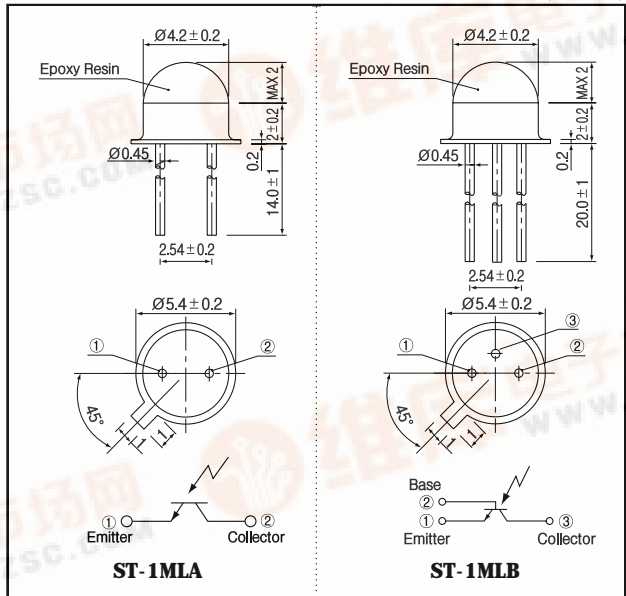
- Wide angular response
- Relatively low - cost against metal can package
- Low profile package
- Two leads (Collector, Emitter) ST - 1MLA
- Three leads (Collector, Emitter, Base) ST - 1MLB

APPLICATIONS

- Optical counters
- Infrared sensors
- Camera stroboscopes

DIMENSIONS

(Unit : mm)



MAXIMUM RATINGS

(Ta=25)

Item	Symbol	Rating	Unit
C - E voltage	V_{CE0}	40	V
E - C voltage	V_{ECO}	4	V
Collector current	I_C	30	mA
Collector power dissipation	P_C	100	mW
Operating temp.	$T_{opr.}$	- 25 ~ + 90	
Storage Temp.	$T_{stg.}$	- 30 ~ + 100	
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	$V_{CE} = 10V, 200lx^{-2}$	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	$V_{CC} = 10V, I_C = 5mA, R_L = 100$		8		$\mu sec.$
	Fall time			10		$\mu sec.$
Spectral sensitivity				500 ~ 1,050		nm
Peak wavelength	ρ			880		nm
Half angle				± 70		deg.

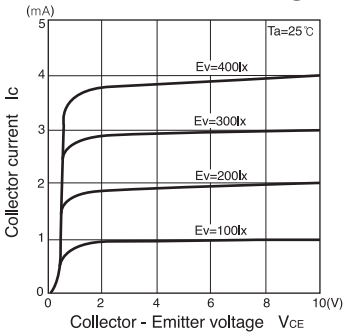
²⁾ Color temp. = 2856K standard Tungsten lamp



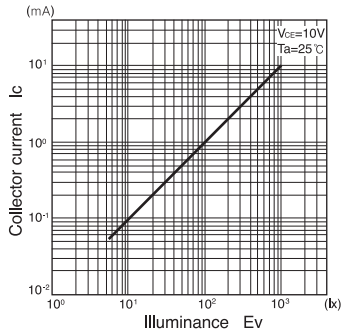
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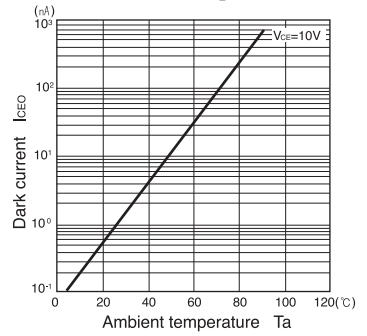
Collector current Vs. Collector - Emitter voltage



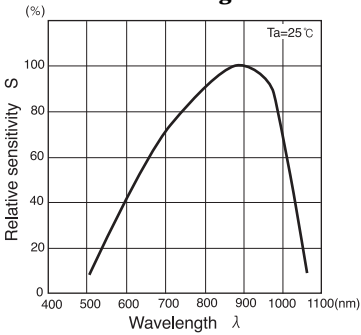
Collector current Vs. Illuminance



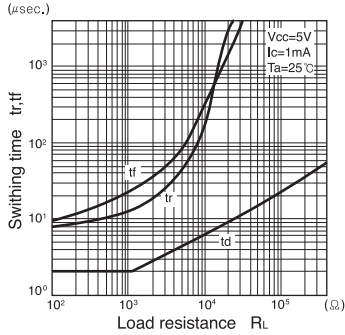
Dark current Vs. Ambient temperature



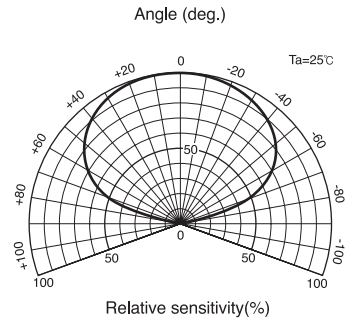
Relative sensitivity Vs. Wavelength



Switching time vs. Load resistance



Radiant Pattern



Collector power dissipation Vs. Ambient temperature

