

# 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**

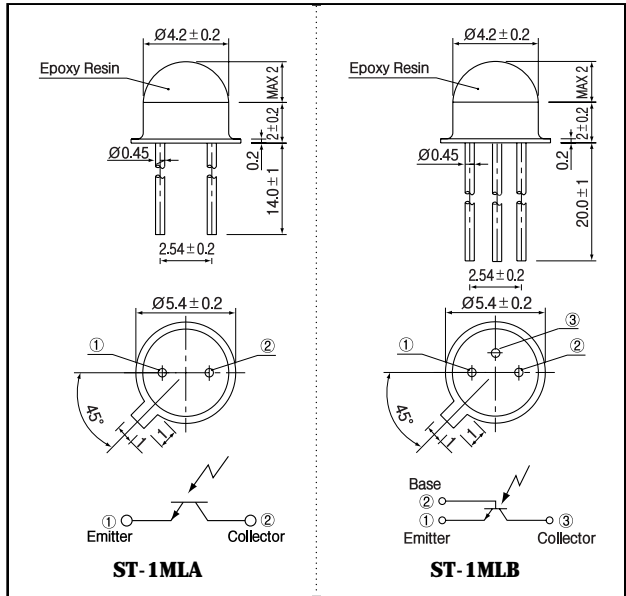
- Wide angular response
- Relatively low - cost against metal can package
- Low profile package
- Two leads (Collector, Emitter) ST - 1MLA
- Three leads (Collector, Emitter, Base) ST - 1MLB

**APPLICATIONS**

- Optical counters
- Infrared sensors
- Camera stroboscopes

**DIMENSIONS**

(Unit : mm)



**MAXIMUM RATINGS**

( $T_a = 25$  )

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**

( $T_a = 25$  )

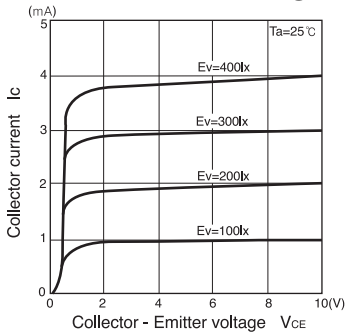
Item	Symbol	Conditions	Min.	Typ.	Max.	Unit.
Collector dark current	$I_{CEO}$	$V_{CE0} = 10V$		1	200	nA
Light current	$I_L$	$V_{CE} = 10V, 200lx^{-2}$	0.5	2.0	5.0	mA
C - E saturation voltage	$V_{CE(sat)}$	$I_c = 2mA, 2,000lx^{-2}$		0.2	0.4	V
Switching speeds	Rise time	$V_{CC} = 10V, I_c = 5mA, R_L = 100$		8		$\mu sec.$
	Fall time			10		$\mu sec.$
Spectral sensitivity				500 - 1,050		nm
Peak wavelength	$\lambda_p$			880		nm
Half angle				$\pm 70$		deg.

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

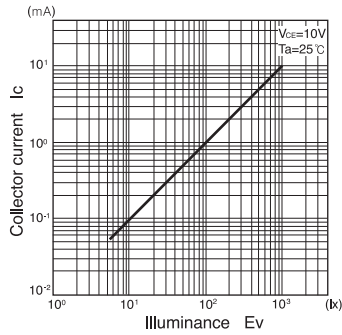
Photo transistors

ST - 1MLA · ST - 1MLB

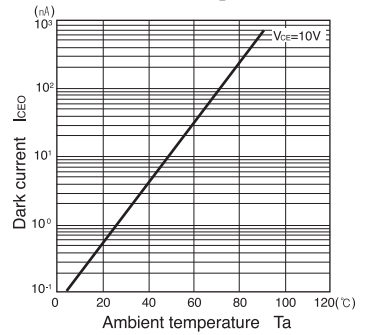
**Collector current Vs. Collector - Emitter voltage**



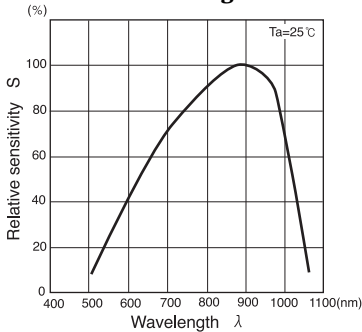
**Collector current Vs. Illuminance**



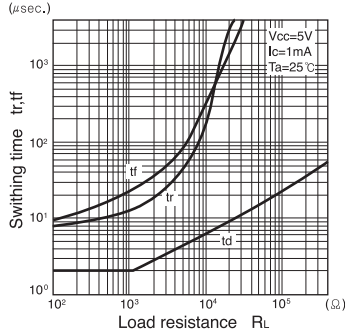
**Dark current Vs. Ambient temperature**



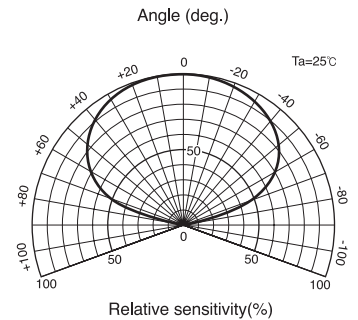
**Relative sensitivity Vs. Wavelength**



**Switching time vs. Load resistance**



**Radiant Pattern**



**Collector power dissipation Vs. Ambient temperature**

