

# ST - 1MLAR2 · ST - 1MLBR2

The ST - 1MLAR2 and 1MLBR2 are high - sensitivity NPN silicon phototransistors mounted in a TO - 18 Type header with black epoxy encapsulation. With daylight filter the phototransistor is sensitive only to infrared rays.

**FEATURES**

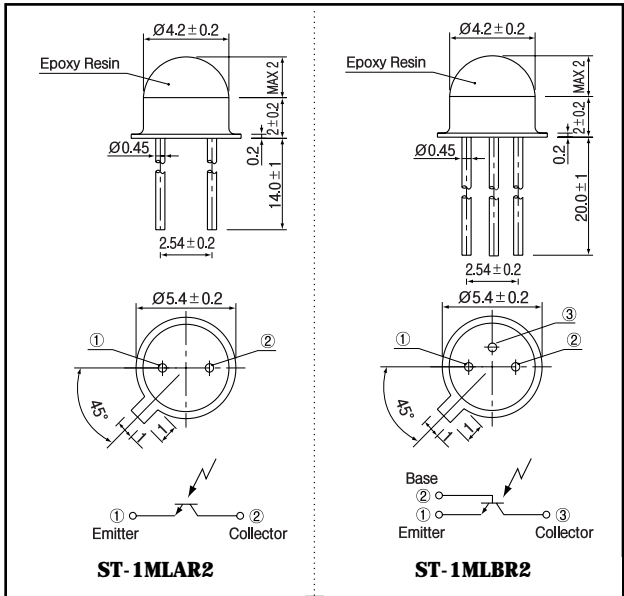
- Wide angular response
- Relatively low - cost against metal can package
- Low profile package
- With daylight filter

**APPLICATIONS**

- Remote control sensors
- Card readers
- Optical switches

**DIMENSIONS**

(Unit : mm)



**MAXIMUM RATINGS**

(Ta=25 )

Item	Symbol	Rating	Unit
C - E voltage	V <sub>CE0</sub>	40	V
E - C voltage	V <sub>E00</sub>	4	V
Collector current	I <sub>c</sub>	30	mA
Collector power dissipation	P <sub>c</sub>	100	mW
Operating temp.	T <sub>opr.</sub>	- 25 ~ +90	
Storage Temp.	T <sub>stg.</sub>	- 30 ~ +100	
Soldering temp. *1	T <sub>sol.</sub>	260	

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

**ELECTRO-OPTICAL CHARACTERISTICS**

(Ta=25 )

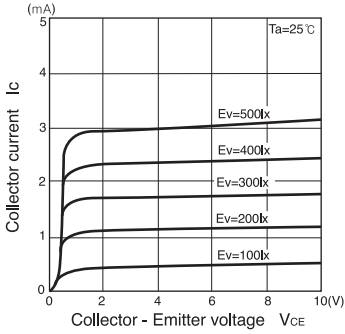
Item	Symbol	Conditions	Min.	Typ.	Max.	Unit.
Collector dark current	I <sub>CE0</sub>	V <sub>CE0</sub> = 10V		1	200	nA
Light current	I <sub>L</sub>	V <sub>CE</sub> = 10V, 200lx <sup>-2</sup>	0.5	1.2	5.0	mA
C - E saturation voltage	V <sub>CE(sat)</sub>	I <sub>c</sub> = 2mA, 2,000lx <sup>-2</sup>		0.2	0.4	V
Switching speeds	Rise time	V <sub>CC</sub> = 10V, I <sub>c</sub> = 5mA, R <sub>L</sub> = 100		8		µsec.
	Fall time			10		µsec.
Spectral sensitivity				720 - 1,050		nm
Peak wavelength	λ <sub>p</sub>			940		nm
Half angle				± 70		deg.

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

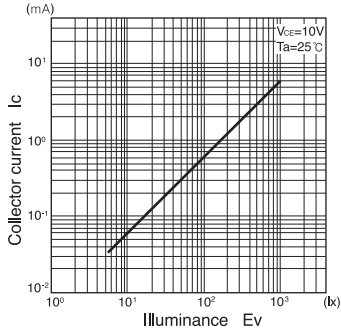
Photo transistors

ST - 1 MLAR2 · ST - 1 MLBR2

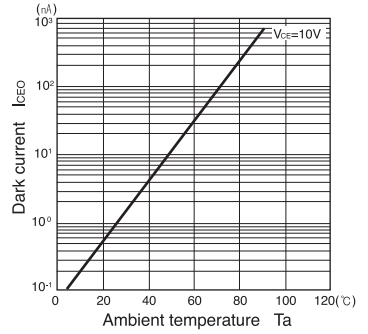
**Collector current Vs. Collector - Emitter voltage**



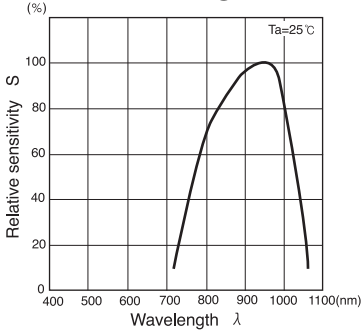
**Collector current Vs. Illuminance**



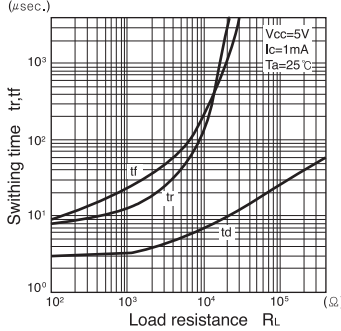
**Dark current Vs. Ambient temperature**



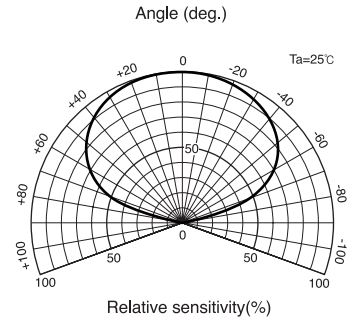
**Relative sensitivity Vs. Wavelength**



**Switching time vs. Load resistance**



**Radiant Pattern**



**Collector power dissipation Vs. Ambient temperature**

