

# ST-8LR2

ST-8LR2 is a high-sensitivity NPN silicon phototransistor mounted in a clear plastic package. With lensed package, this small phototransistor permits narrow angular response.

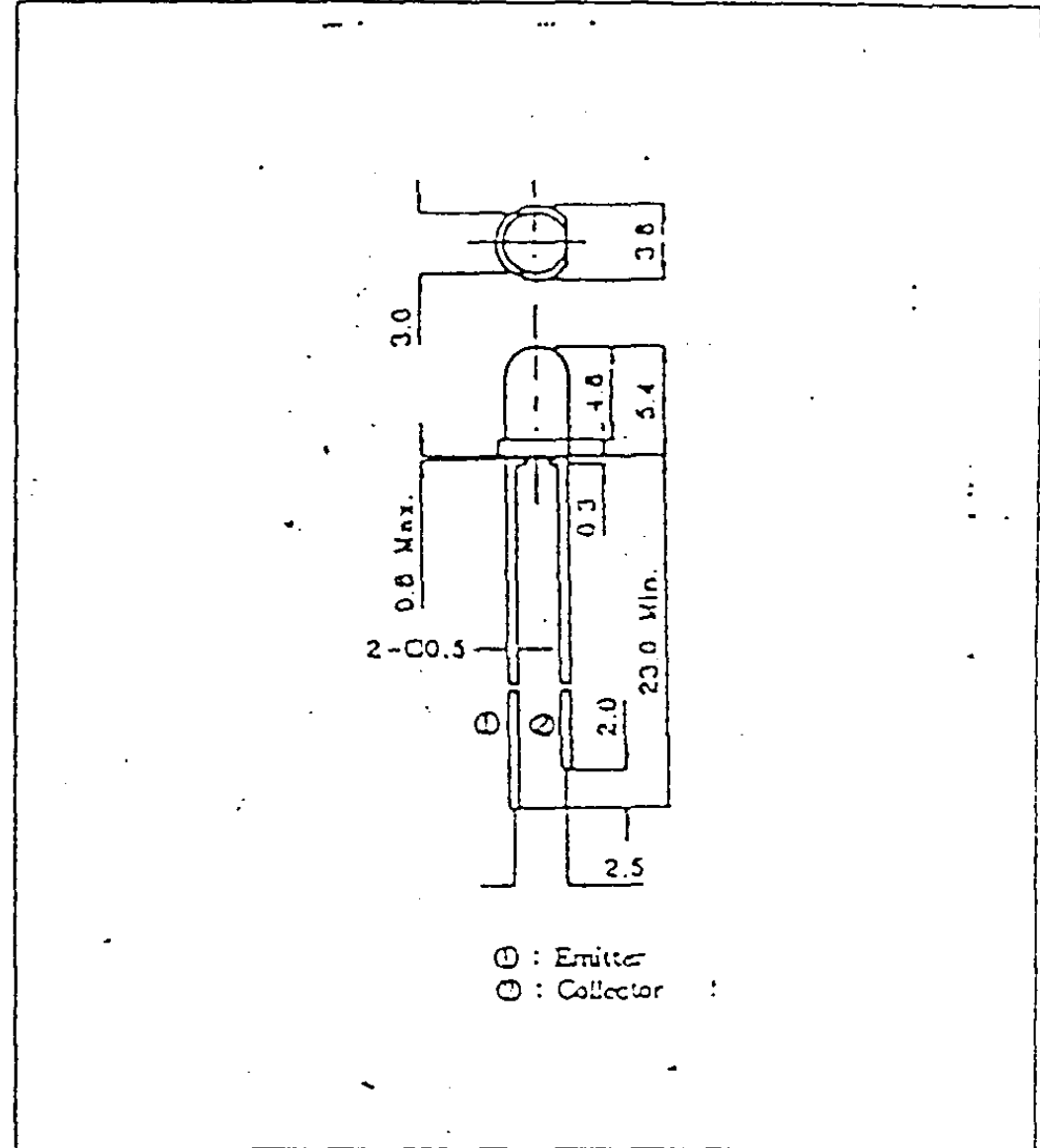
## FEATURES

- Compact ( $\phi 3\text{mm}$ )
- Narrow angular response
- Low-cost

## APPLICATIONS

- Optical counters
- Optical detectors
- Camera stroboscopes

DIMENSIONS (Unit:mm)



## MAXIMUM RATINGS

( $T_a=25^\circ\text{C}$ )

Item	Symbol	Rating	Unit
C-E voltage.	$V_{CE0}$	20	V
E-C voltage.	$V_{ECO}$	5	V
Collector current.	$I_C$	20	mA
Collector Power dissipation.	$P_C$	75	mW
Operating temp.	$T_{opr.}$	-20 ~ +80	$^\circ\text{C}$
Storage temp.	$T_{stg.}$	-20 ~ +80	$^\circ\text{C}$
Soldering temp.* <sup>1</sup>	$T_{sol.}$	240	$^\circ\text{C}$

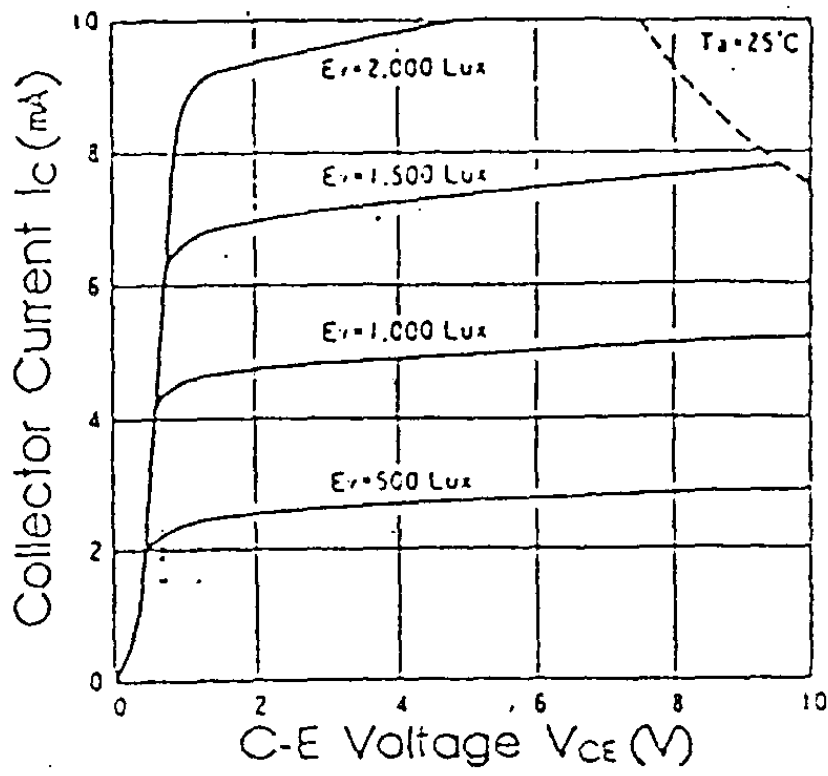
\*<sup>1</sup>. Soldering time  $t=5\text{sec}$ . 2mm removed from lead origin.

## ELECTRO-OPTICAL CHARACTERISTICS

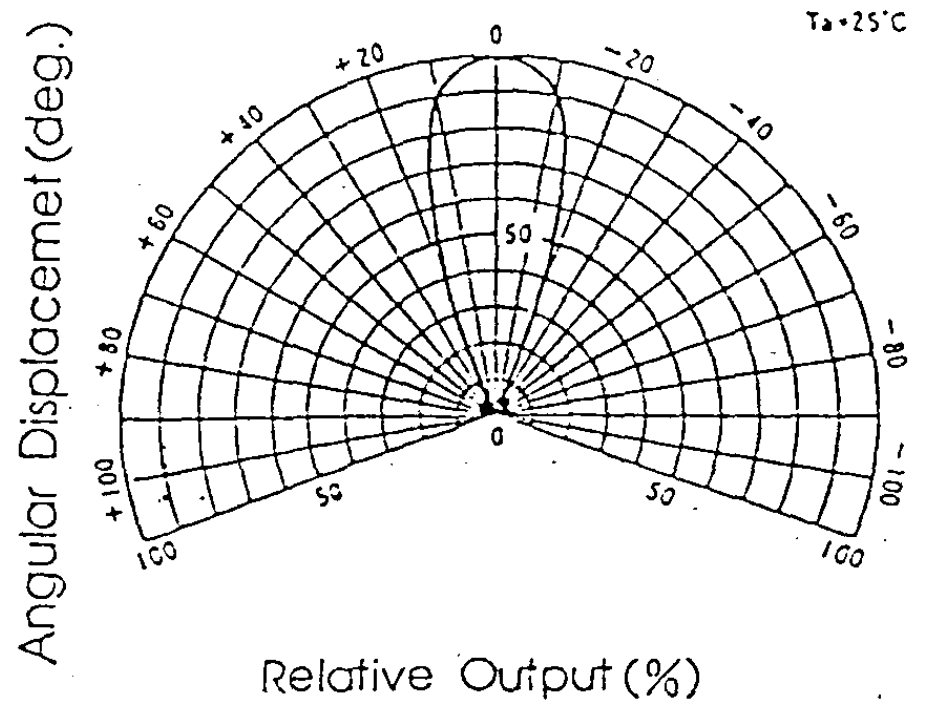
( $T_a=25^\circ\text{C}$ )

Item	Symbol	Conditions	Min.	Typ.	Max.	Unit
Collector dark current	$I_{CBO}$	$V_{CE0}=10\text{V}$		1	100	nA
Light current.	$I_L$	$V_{CE}=3\text{V}, 1000\text{Lux}$	0.5	5.0	20	nA
C-E saturation voltage	$V_{CE(sat)}$	$I_C=0.2\text{mA}, 2000\text{Lux}$		0.15	0.4	V
Switching speeds	Rise time	$t_r$		2.5		$\mu\text{sec.}$
	Fall time	$t_f$		3.8		$\mu\text{sec.}$
Spectral sensitivity	$\lambda$			720 ~ 1050		nm
Peak wavelength	$\lambda_p$			940		nm
Half angle	$\Delta\theta$			$\pm 17$		deg.

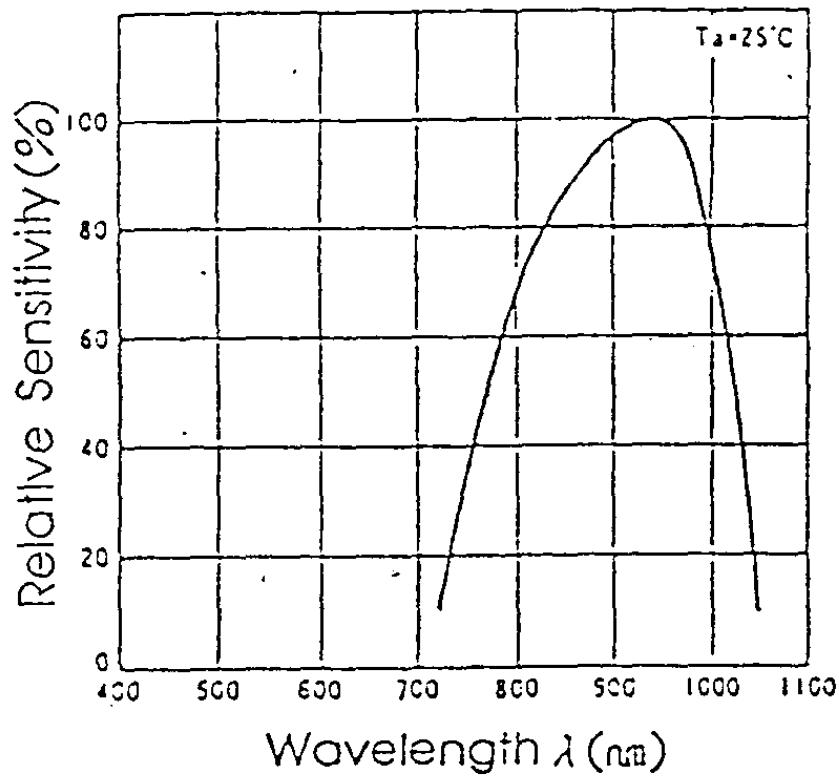
COLLECTOR CURRENT Vs. C-E VOLTAGE



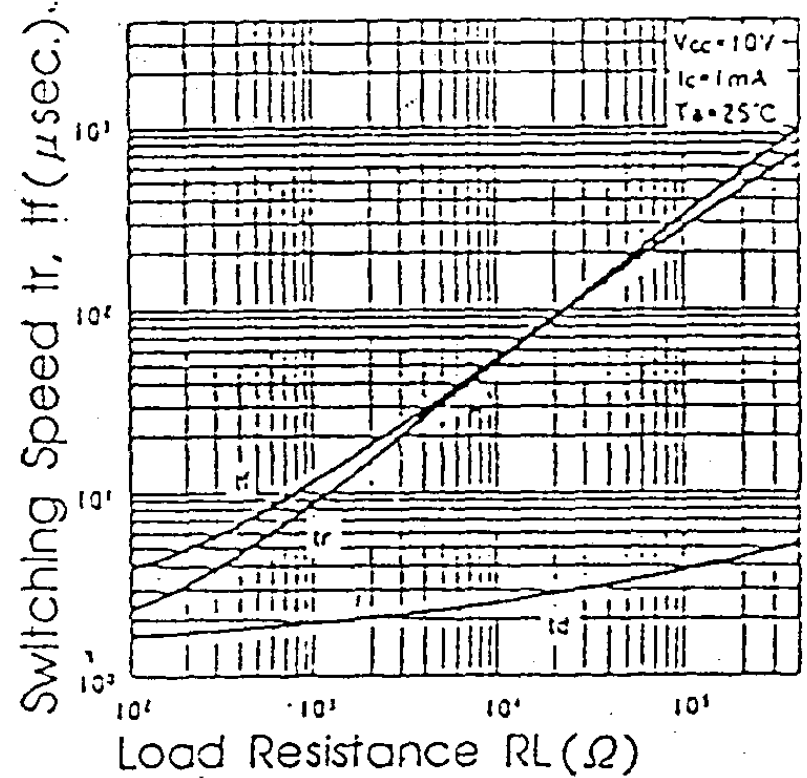
RELATIVE OUTPUT Vs. ANGULAR DISPLACEMENT



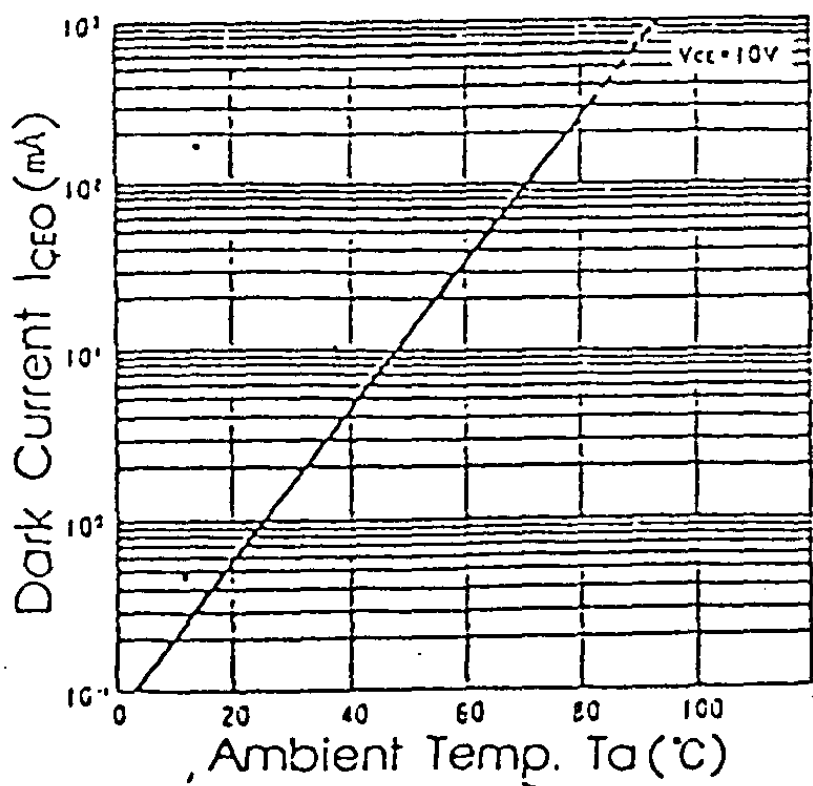
RELATIVE SENSISTIVITY Vs. WAVELENGTH



SWITCHING SPEEDS Vs. LOAD RESISTANCE



DARK CURRENT Vs. AMBIENT TEMP.



COLLECTOR POWER DISSIPATION Vs. AMBIENT TEMP.

