

Phototransistor

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.

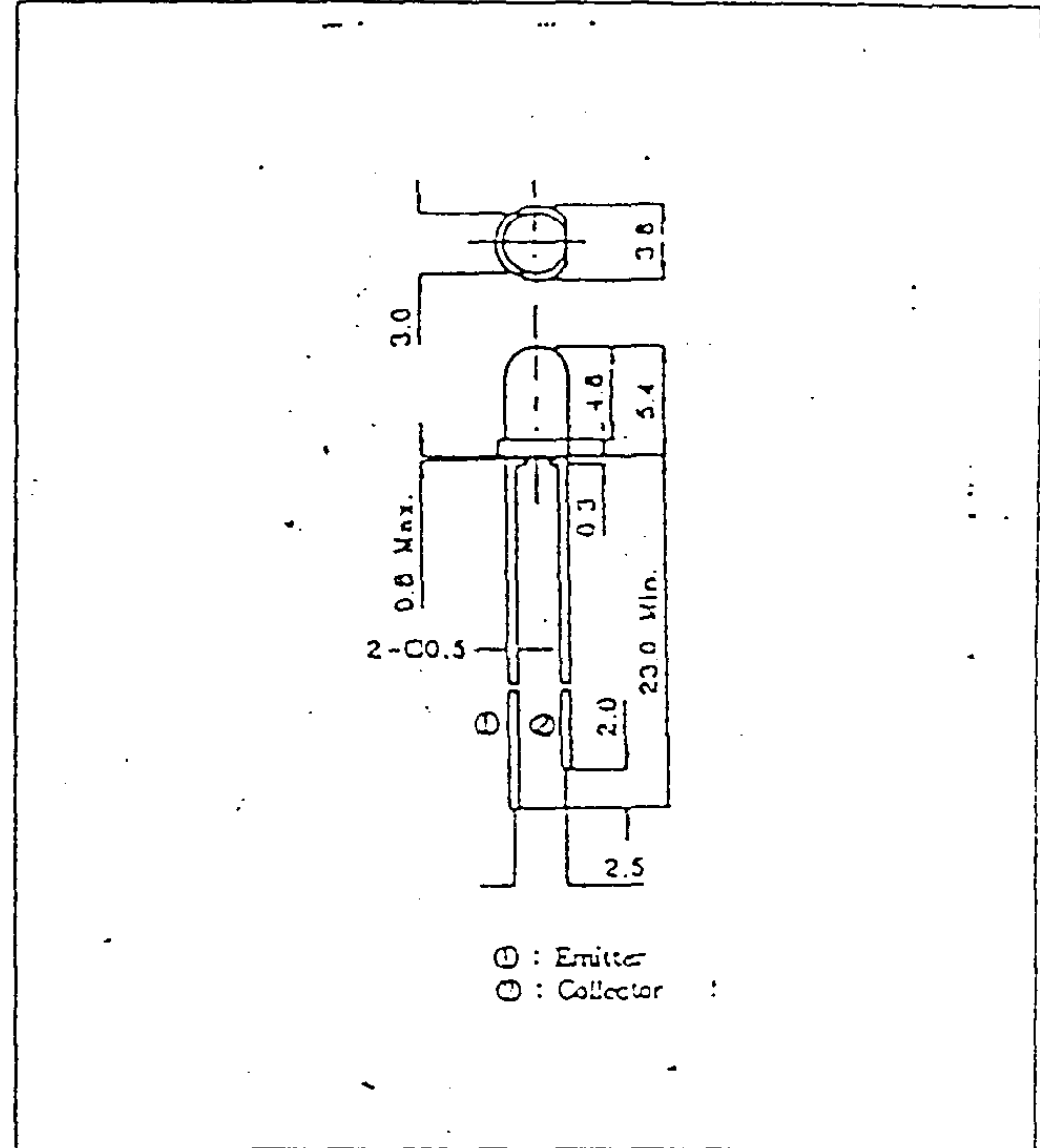
FEATURES

- 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_{CEO}	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.* ¹	$T_{sol.}$	240	$^\circ\text{C}$

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

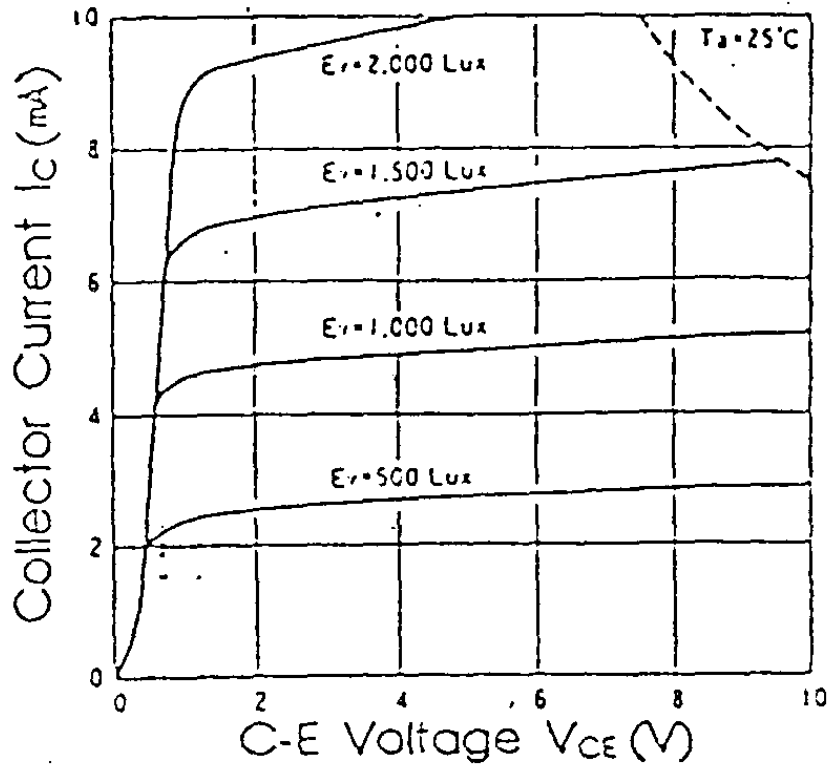
ELECTRO-OPTICAL CHARACTERISTICS

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

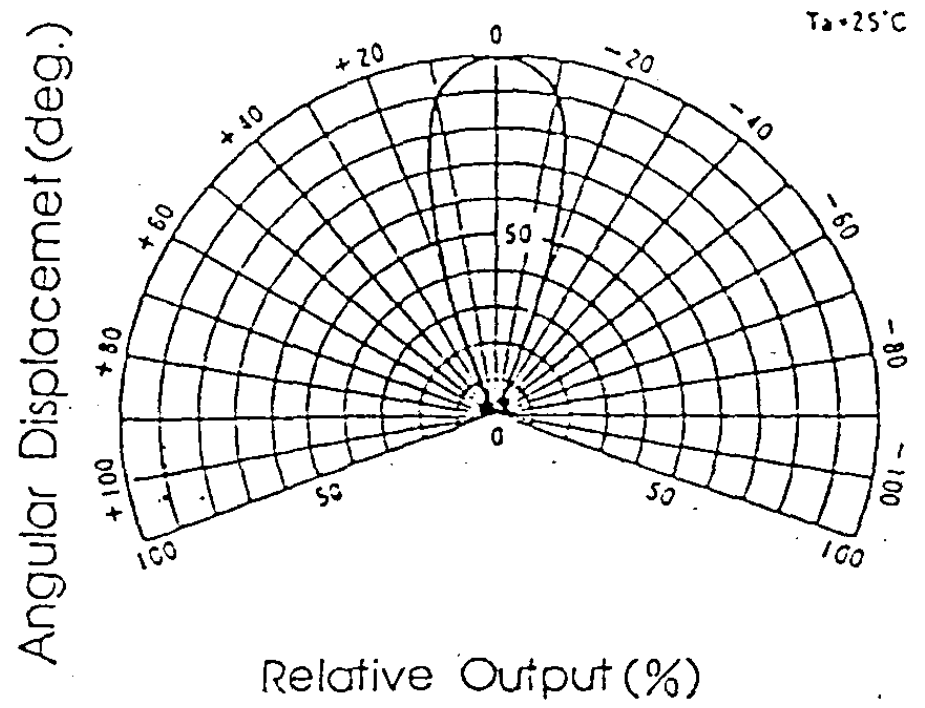
Item	Symbol	Conditions	Min.	Typ.	Max.	Unit
Collector dark current	I_{CBO}	$V_{CEO}=10\text{V}$		1	100	nA
Light current.	I_L	$V_{CE}=3\text{V}, 1000\text{Lux}$	0.5	5.0	20	nA
C-E saturation voltage	$V_{CE(sat)}$	$I_C=0.2\text{mA}, 2000\text{Lux}$		0.15	0.4	V
Switching speeds	Rise time	t_r		2.5		$\mu\text{sec.}$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

Phototransistor

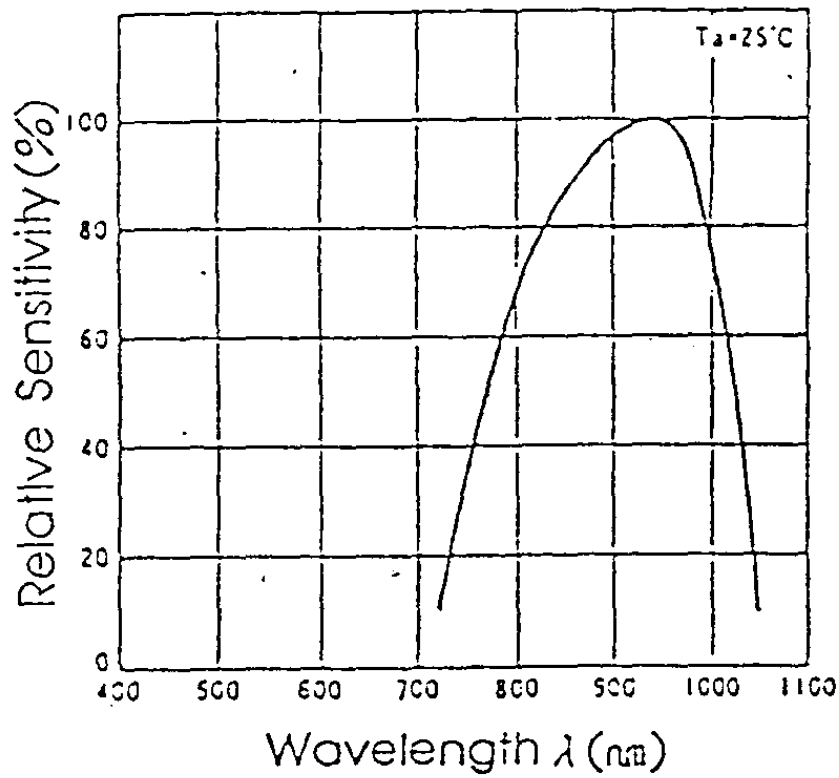
COLLECTOR CURRENT Vs. C-E VOLTAGE



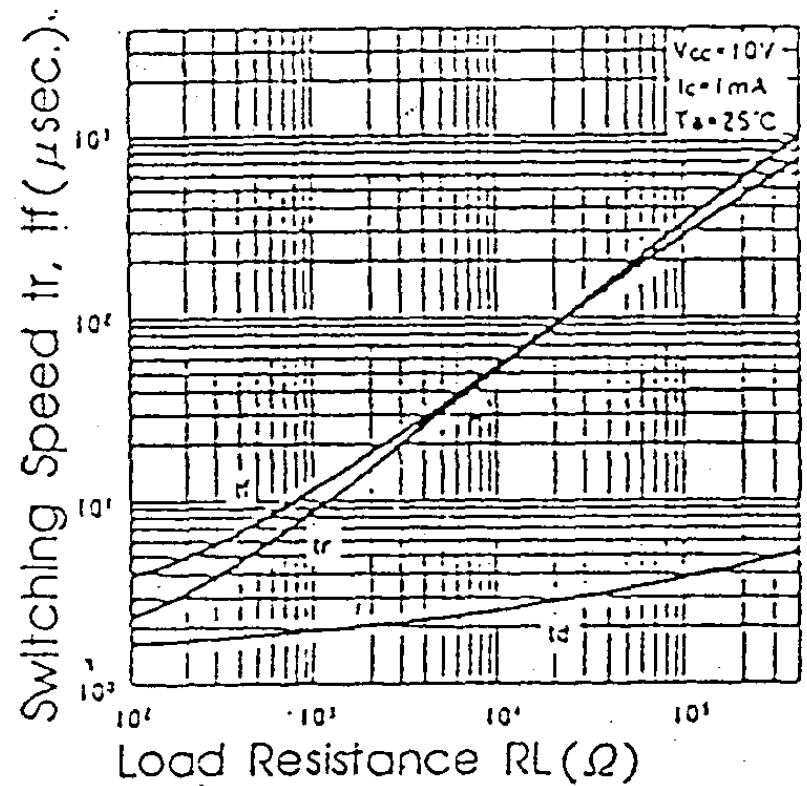
RELATIVE OUTPUT Vs. ANGULAR DISPLACEMENT



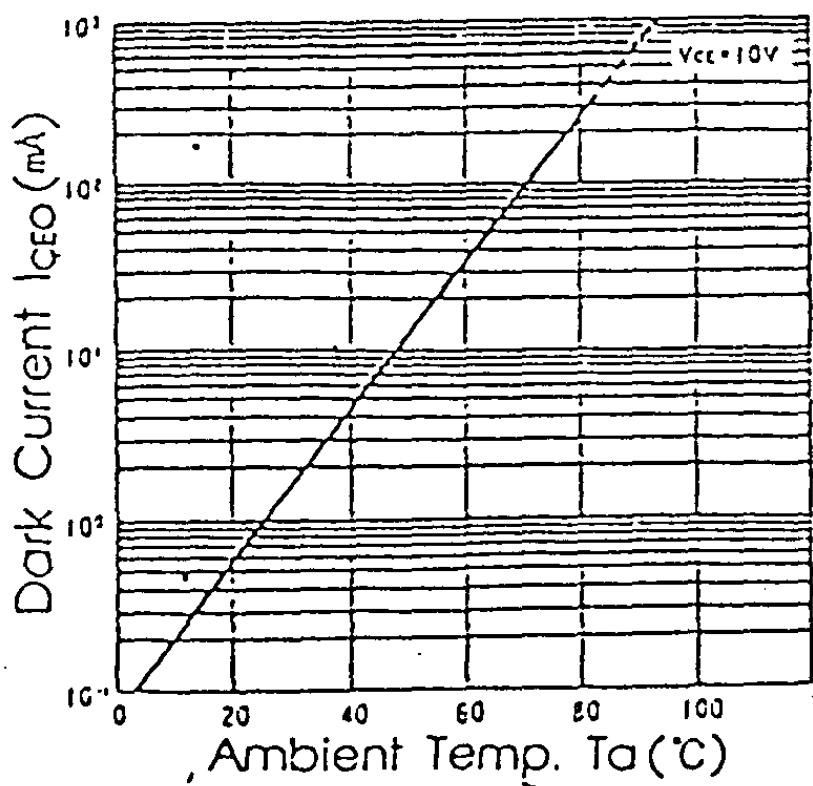
RELATIVE SENSISTIVITY Vs. WAVELENGTH



SWITCHING SPEEDS Vs. LOAD RESISTANCE



DARK CURRENT Vs. AMBIENT TEMP.



COLLECTOR POWER DISSIPATION Vs. AMBIENT TEMP.

