

## ST - 1CL3H

The ST - 1CL3H is a high sensitivity NPN silicon phototransistor mounted in a 3  $\phi$  low - cost ceramic package, designed for use as low - cost detector array in consumer and industrial applications.

**FEATURES**

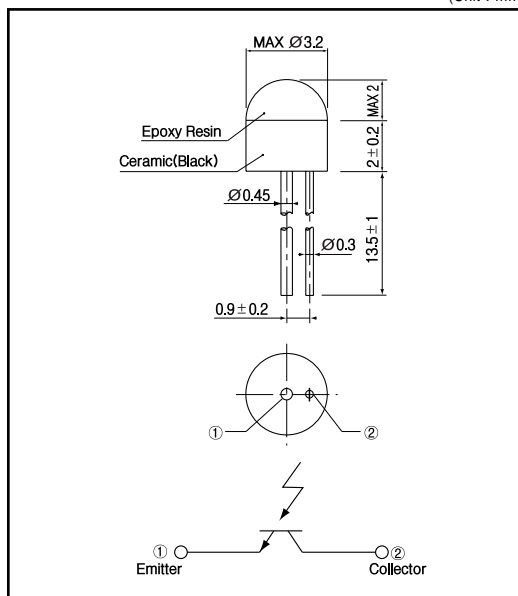
- Compact ( $\phi 3\text{mm}$ )
- Wide angular response
- Low - cost

**APPLICATIONS**

- Optical counters
- Optical detectors
- Floppy disk drives
- Encoders

**DIMENSIONS**

(Unit : mm)

**MAXIMUM RATINGS**

(Ta=25 )

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 ~ +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 )

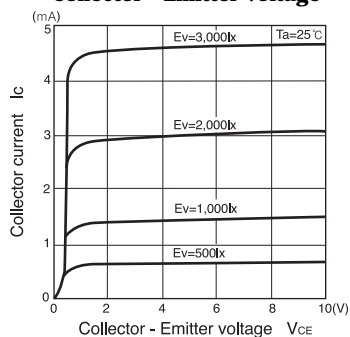
Item	Symbol	Conditions	Min.	Typ.	Max.	Unit.
Collector dark current	$I_{CE0}$	$V_{CE0} = 10V$		1	200	nA
Light current	$I_L$	$V_{CE} = 3V, 1,000lx^{-12}$	0.1	1.5	10	mA
C - E saturation voltage	$V_{CE(sat)}$	$I_C = 0.2mA, 2,000lx^{-12}$		0.15	0.4	V
Switching speeds	Rise time	$V_{CC} = 10V, I_C = 1mA, R_L = 100$		2.5		$\mu sec.$
	Fall time			3.8		$\mu sec.$
Spectral sensitivity				480 ~ 1,000		nm
Peak wavelength	$\lambda_p$			800		nm
Half angle				$\pm 50$		deg.

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

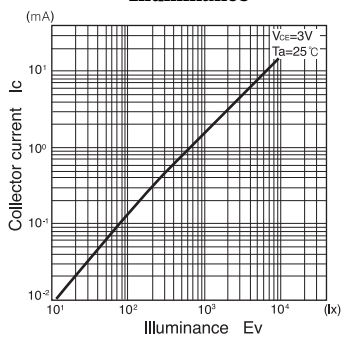
## Photo transistors

ST - 1CL3H

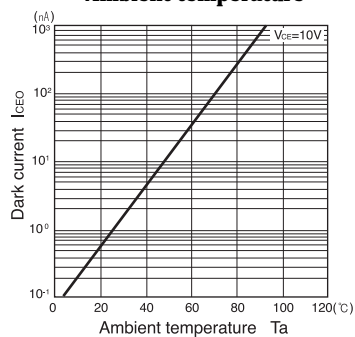
**Collector current Vs.  
Collector - Emitter voltage**



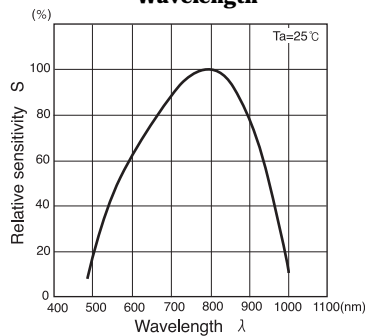
**Collector current Vs.  
Illuminance**



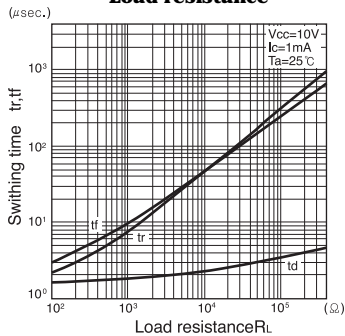
**Dark current Vs.  
Ambient temperature**



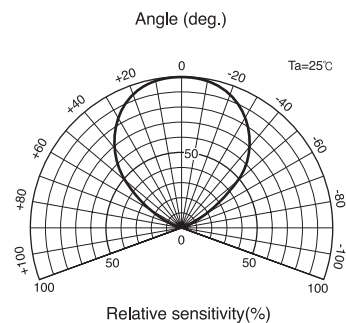
**Relative sensitivity Vs.  
Wavelength**



**Switching time Vs.  
Load resistance**



**Radiant Pattern**



**Collector power dissipation Vs.  
Ambient temperature**

