

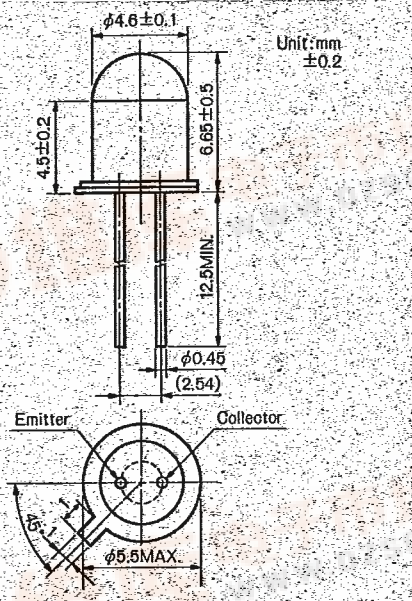
STANLEY

STANLEY  
PHOTO  
TRANSISTOR

PS101

T-41-61

## ■ Package Dimensions



## ■ FEATURES

- (1) High photo current  
(Typ. 6mA at  $E_e = 1 \text{ mW/cm}^2$ )
- (2) High directivity
- (3) High reliability, High endurance

## ■ APPLICATIONS

- (1) Photoelectric switch, Photoelectric counter
- (2) Position-rotation detection
- (3) Card and tape readers
- (4) Smoke detector, other safety and security systems

■ Absolute Maximum Ratings ( $T_a = 25^\circ \text{C}$ )

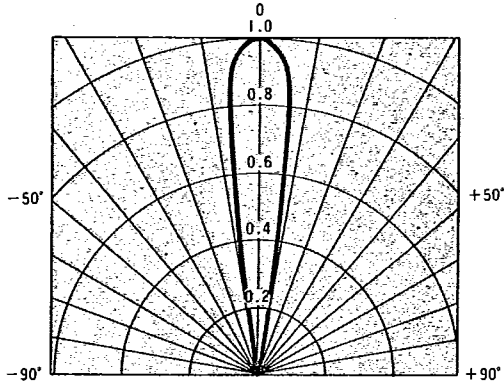
Item	Symbol	Maximum Ratings	Unit
Collector Dissipation	$P_c$	150	mW
Collector-Emitter Breakdown Voltage	$V_{CE0}$	30	V
Emitter-Collector Breakdown Voltage	$V_{ECO}$	5	V
Collector Current	$I_c$	50	mA
Operating Temperature	$T_{opr}$	$-30 \sim +125$	$^\circ \text{C}$
Storage Temperature	$T_{stg}$	$-30 \sim +150$	$^\circ \text{C}$

■ Electro-Optical Characteristics ( $T_a = 25^\circ \text{C}$ )

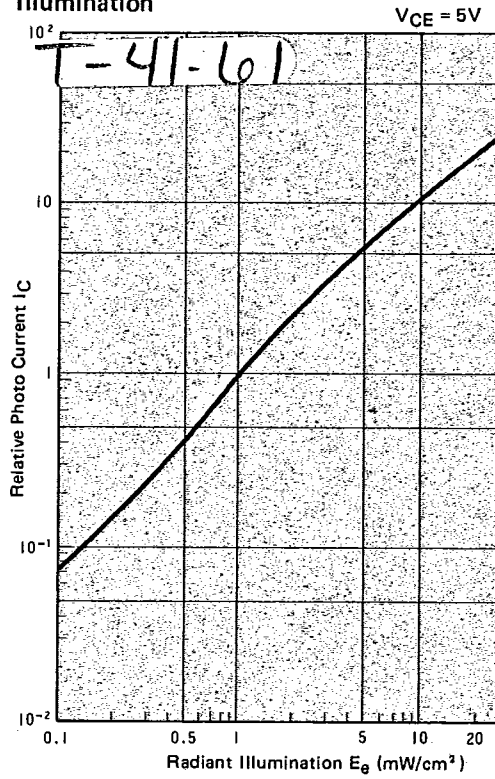
\*At color temp. 2856° K standard tungsten filament bulb

Item	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-Emitter Dark Current	$I_{CE0}$	—	—	0.2	$\mu \text{A}$	$V_{CE} = 10 \text{ V}, E_e = 0$
Photo current	$I_c$	1.5	6	—	mA	$V_{CE} = 5 \text{ V}, *E_e = 1 \text{ mW/cm}^2$
Response Time	Rise	$t_r$	5	—	$\mu \text{ sec}$	$V_{CC} = 10 \text{ V}$ $I_c = 2 \text{ mA}, R_L = 100 \Omega$
	Fall	$t_f$	5	—	$\mu \text{ sec}$	
Peak Sensitivity Wavelength	$\lambda_p$	—	800	—	nm	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	—	0.1	—	V	$I_c = 0.5 \text{ mA}, *E_e = 10 \text{ mW/cm}^2$

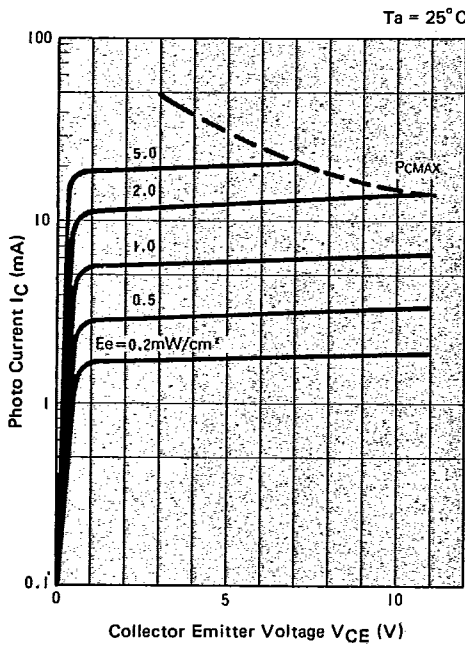
■ Directivity Characteristics



■ Relative Photo Current Vs. Radiant Illumination



■ Photo Current Vs. Collector Emitter Voltage



■ Photo Current Vs. Ambient Temp.

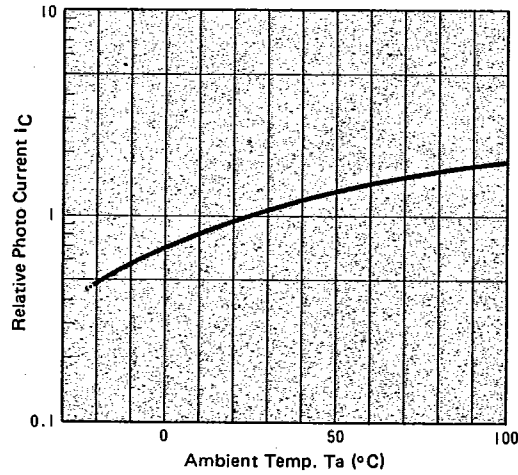
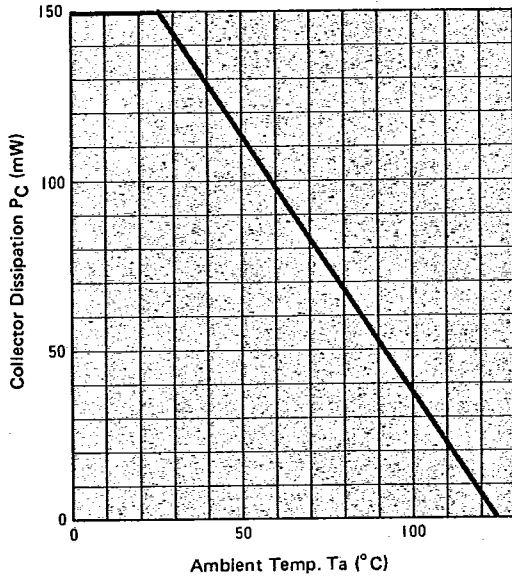
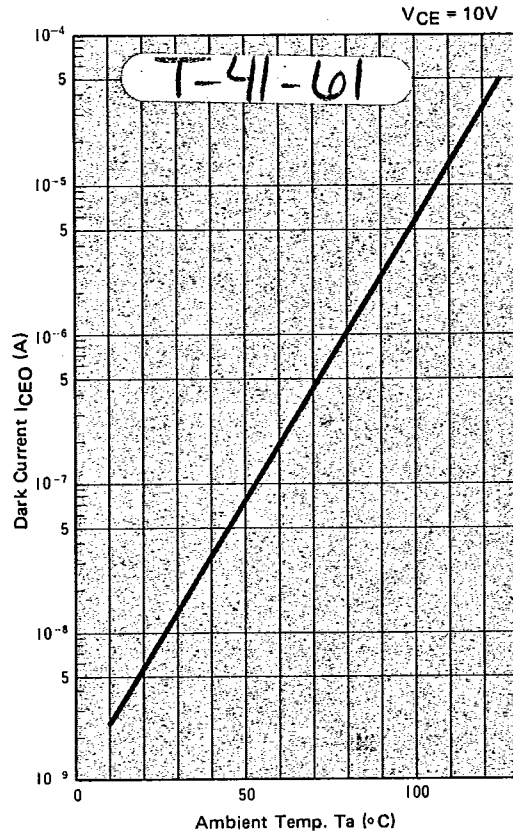


PHOTO-TRANSISTOR

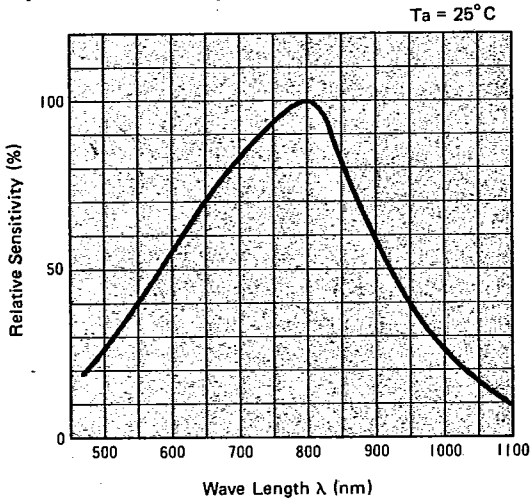
■ Collector Dissipation Vs. Ambient Temp.



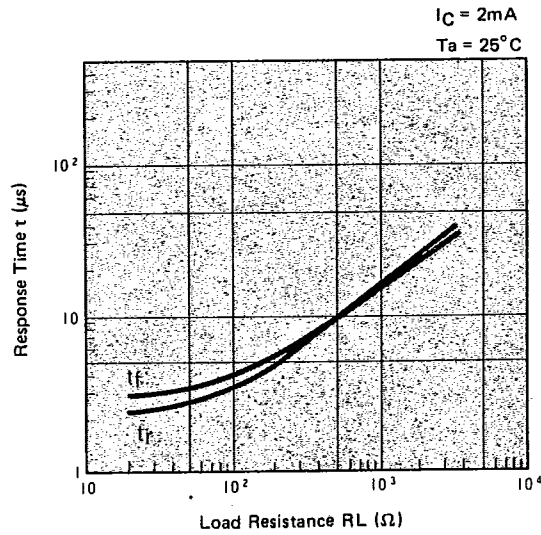
■ Dark Current Vs. Ambient Temp.



■ Spectral Sensitivity Characteristics



■ Response Time Vs. Load Resistance



■ Response Time Measuring Circuit

