

TOSHIBA PHOTO DIODE SILICON PIN

# TPS705, TPS706

SILICON PIN PHOTO DIODE FOR REMOTE CONTROL

Unit in mm

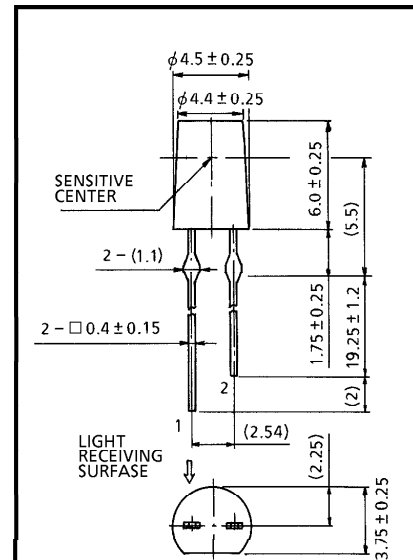
VARIOUS KINDS OF REMOTE CONTROL SYSTEMS

SMOKE SENSOR

- Small package makes it possible to make a set thin.
- Fluorescent lamp disturbance light cut-off resin is used.
- High sensitivity      TPS705 :  $I_{SC} = 0.9\mu A$  (Typ.)  
   TPS706 :  $I_{SC} = 1.5\mu A$  (Typ.)
- High speed response :  $t_r, t_f = 100ns$  (Typ.)
- Wide half value angle :  $\theta \frac{1}{2} = \pm 65^\circ$  (Typ.)
- TLN105B, TLN115A, etc. are available as high radiant power infrared LEDs.

MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Reverse Voltage	$V_R$	20	V
Power Dissipation	$P_D$	150	mW
Power Dissipation Derating (Ta > 25°C)	$\Delta P_D / ^\circ C$	-2.36	mW / °C
Operating Temperature Range	$T_{opr}$	-30~80	°C
Storage Temperature Range	$T_{stg}$	-40~90	°C
Soldering Temperature · Time	$T_{sol}$	260°C·3s	

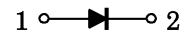


( ) : REFERENCE VALUE

JEDEC	—
EIAJ	—
TOSHIBA	0-5J1

Weight : 0.23g (Typ.)

PIN CONNECTION



1. ANODE
2. CATHODE

961001EAA2

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## OPTO-ELECTRICAL CHARACTERISTICS (Ta = 25°C)

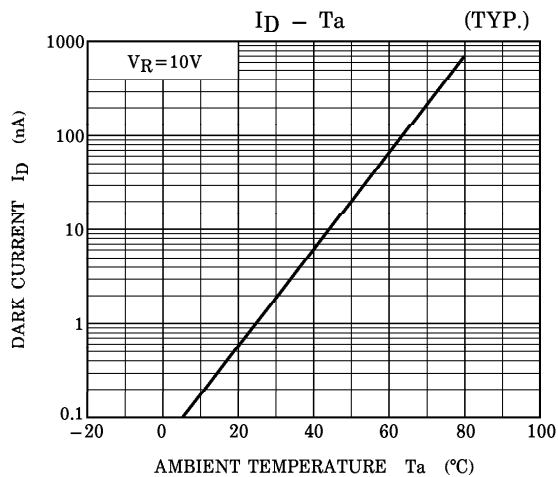
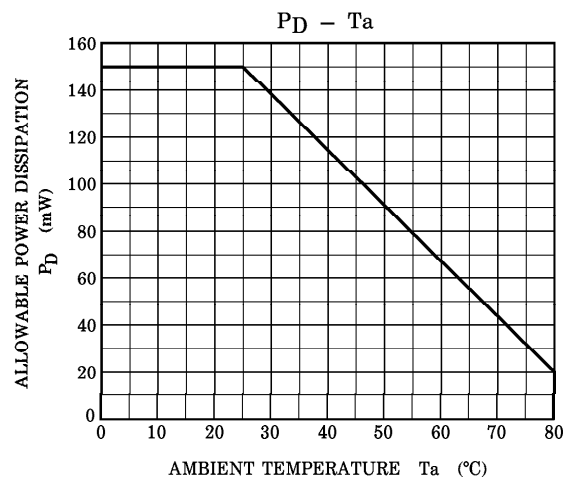
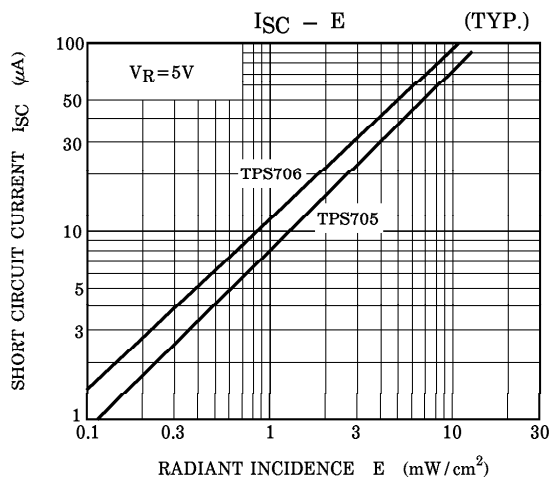
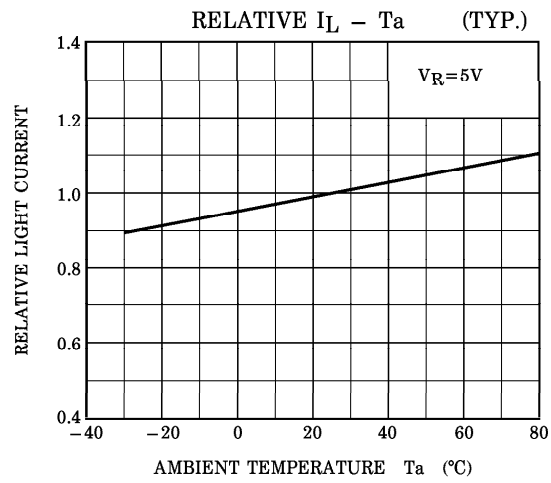
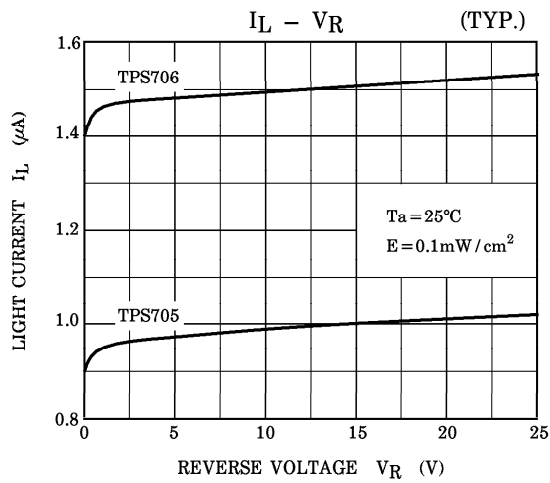
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT	
Short Circuit Current	I <sub>SC</sub>	E = 0.1mW / cm <sup>2</sup> (Note)	TPS705	0.5	0.9	—	μA
			TPS706	1.0	1.5	—	
Dark Current	I <sub>D</sub>	V <sub>R</sub> = 10V, E = 0	—	1	30	nA	
Open Circuit Voltage	V <sub>OP</sub>	E = 0.1mW / cm <sup>2</sup> (Note)	150	250	—	mV	
Capacitance	C <sub>T</sub>	V <sub>R</sub> = 3V, f = 1MHz	TPS705	—	12	—	pF
			TPS706	—	24	—	
Peak Sensitivity Wavelength	λ <sub>P</sub>	—	—	970	—	nm	
Switching Time	Rise Time	V <sub>R</sub> = 10V, R <sub>L</sub> = 1kΩ	—	100	—	ns	
	Fall Time		—	100	—		
Half Value Angle	θ <sub>1/2</sub>	—	—	±65	—	°	

Note : Color temperature = 2870°K, Standard Tungsten Lamp.

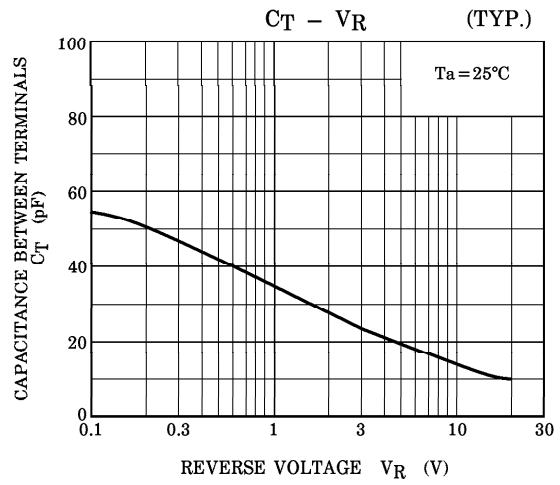
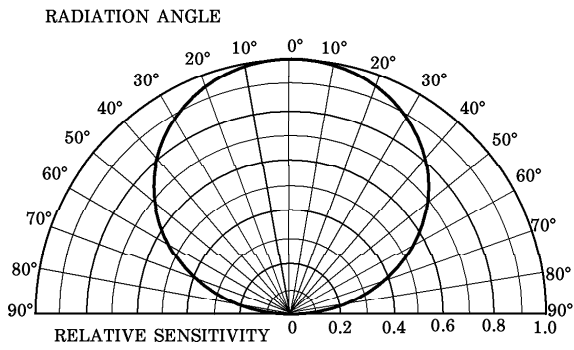
## PRECAUTION

Please be careful of the followings.

- Soldering shall be performed at a portion of lead above 1.75mm from the body of the device.
- If the lead is formed, the lead should be formed at a distance of 1.75mm from the body of the device.  
Soldering shall be performed after lead forming.



**DIRECTIONAL SENSITIVITY CHARACTERISTIC**  
(TYP.) ( $T_a = 25^\circ\text{C}$ )



**SPECTRAL RESPONSE (TYP.)**

