TOSHIBA PHOTO DIODE SILICON PIN

TPS705, TPS706

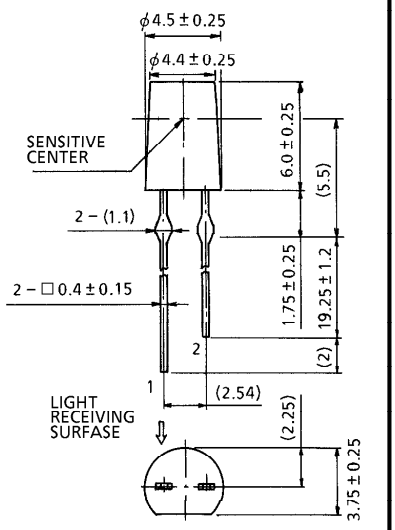
SILICON PIN PHOTO DIODE FOR REMOTE CONTROL

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 : tr, tf=100ns (Typ.)
- Wide half value angle : $\theta\frac{1}{2}=\pm 65°$ (Typ.)
- TLN105B, TLN115A, etc. are available as high radiant power infrared LEDs.

Unit in mm



( ) : REFERENCE VALUE

JEDEC	—
EIAJ	—
TOSHIBA	0-5J1

Weight : 0.23g (Typ.)

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)	ΔP_D / °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	

PIN CONNECTION

1. ANODE
2. CATHODE

961001EAA2

OPTO-ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION		MIN.	TYP.	MAX.	UNIT
Short Circuit Current		I_{SC}	E = 0.1mW / cm² (Note)	TPS705	0.5	0.9	—	μA
				TPS706	1.0	1.5	—	
Dark Current		I_D	V_R = 10V, E = 0		—	1	30	nA
Open Circuit Voltage		V_{OP}	E = 0.1mW / cm² (Note)		150	250	—	mV
Capacitance		C_T	V_R = 3V, f = 1MHz	TPS705	—	12	—	pF
				TPS706	—	24	—	
Peak Sensitivity Wavelength		λ_P	—		—	970	—	nm
Switching Time	Rise Time	t_r	V_R = 10V, R_L = 1kΩ		—	100	—	ns
	Fall Time	t_f			—	100	—	
Half Value Angle		$\theta \frac{1}{2}$			—	±65	—	°

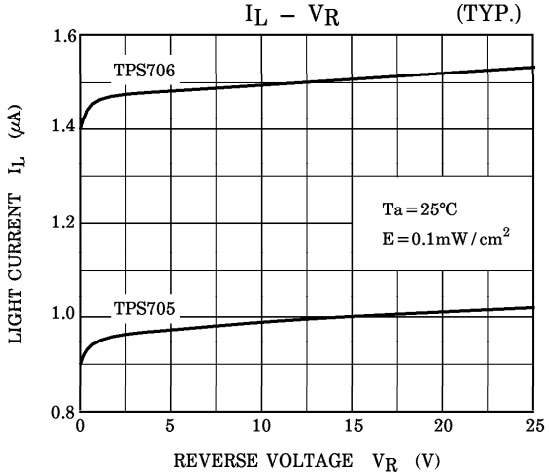
Note : Color temperature = 2870°K, Standard Tungsten Lamp.

PRECAUTION

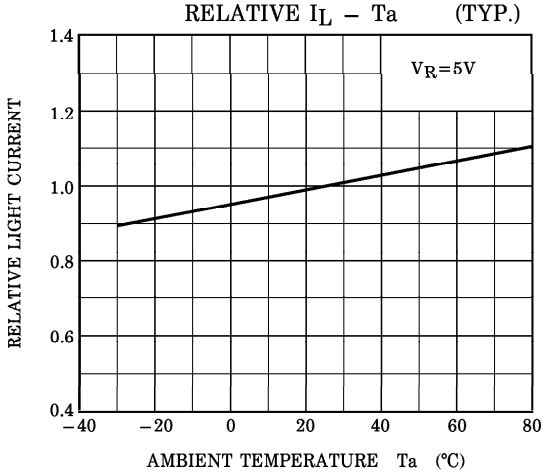
Please be careful of the followings.

1. Soldering shall be performed at a portion of lead above 1.75mm from the body of the device.
2. 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.

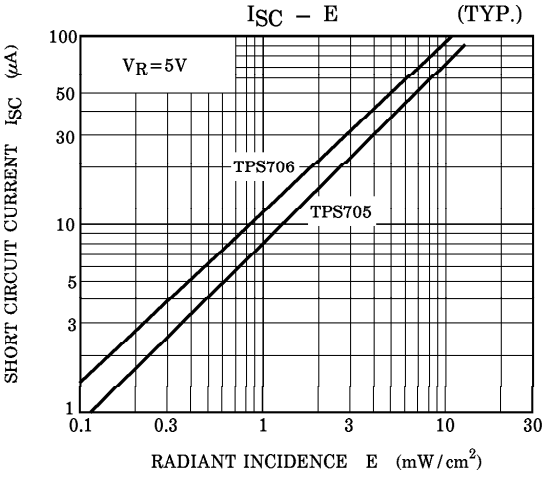
$I_L - V_R$ (TYP.)



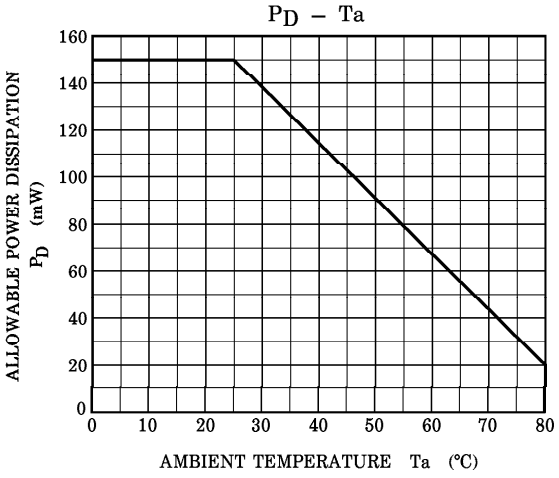
RELATIVE I_L – Ta (TYP.)



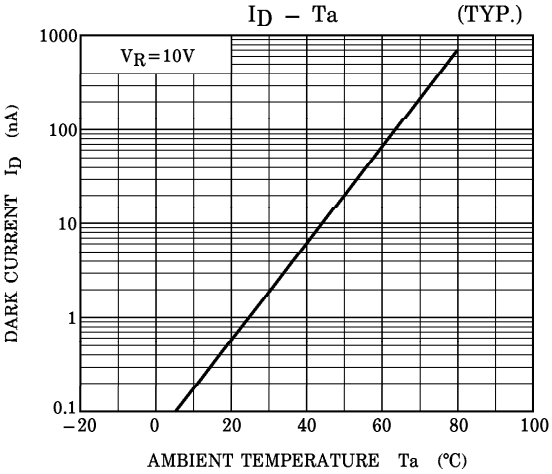
I_{SC} – E (TYP.)



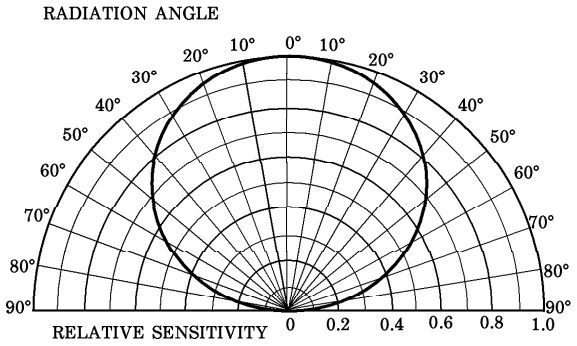
P_D – Ta



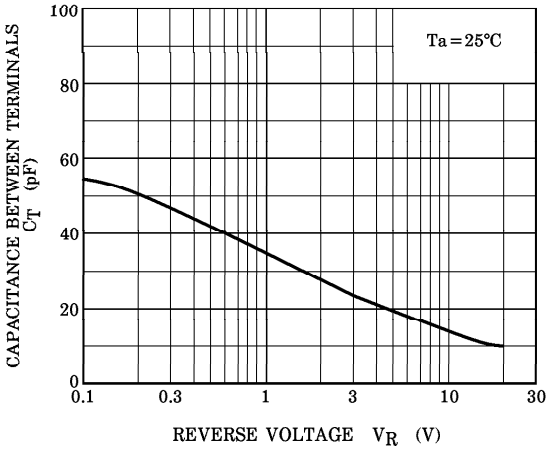
I_D – Ta (TYP.)



DIRECTIONAL SENSITIVITY CHARACTERISTIC
(TYP.) (Ta = 25°C)



$C_T - V_R$ (TYP.)



SPECTRAL RESPONSE (TYP.)