

TOSHIBA PHOTO DIODE SILICON PIN

TPS703, TPS704

SILICON PIN PHOTO DIODE FOR REMOTE CONTROL

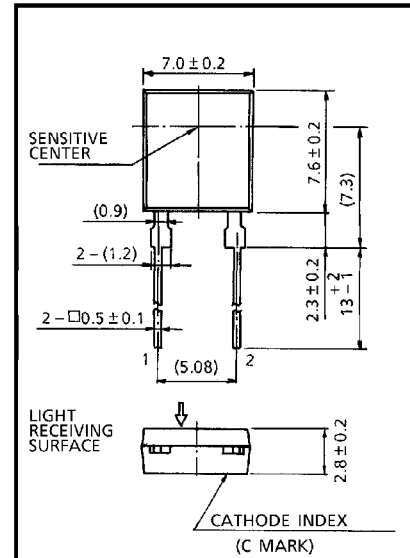
VARIOUS KINDS OF REMOTE CONTROL SYSTEMS

SMOKE SENSOR

OPTICAL COMMUNICATION

- Detector for visible, fluorescent, and other disturbance light.
 TPS703 : $\lambda > 700\text{nm}$
 TPS704 : $\lambda > 800\text{nm}$
- High sensitivity
 TPS703 : $I_{SC} = 1.5\mu\text{A}$ (Typ.)
 TPS704 : $I_{SC} = 0.9\mu\text{A}$ (Typ.)
- High speed response : $t_r, t_f = 100\text{ns}$ (Typ.)
- Wide half value angle : $\theta \frac{1}{2} = \pm 65^\circ$ (Typ.)
- TLN105B, TLN115A, etc. are available as high radiant power infrared LEDs.

Unit in mm



() : REFERENCE VALUE
JEDEC —
EIAJ —
TOSHIBA 0-7B1

Weight : 0.31g (Typ.)

PIN CONNECTION

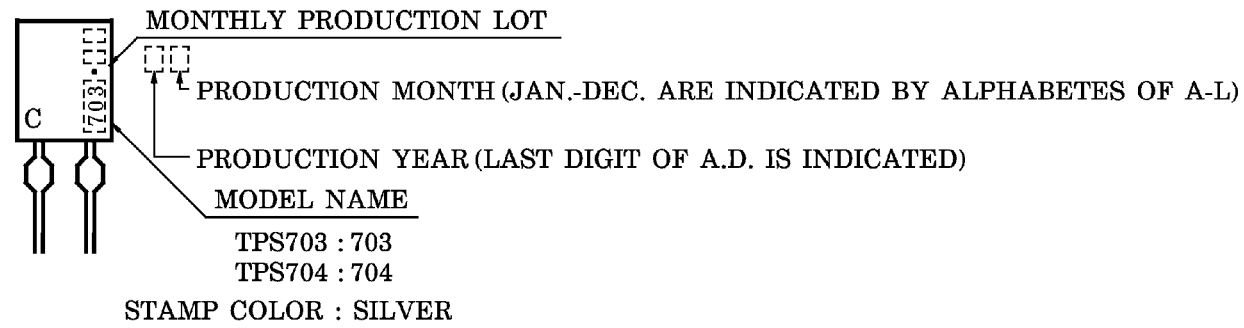


1. ANODE
2. CATHODE

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)	TPS703 TPS704	$\Delta P_D / ^\circ\text{C}$	-2.36 -4.3 mW / °C
Operating Temperature Range	TPS703 TPS704	T_{opr}	$-30 \sim 80$ $-30 \sim 60$ °C
Storage Temperature Range	TPS703 TPS704	T_{stg}	$-40 \sim 90$ $-40 \sim 60$ °C
Soldering Temperature · Time	T_{sol}	260°C·3s	—

PRODUCT INDICATION



961001EAA2

● TOSHIBA is continually working to improve the quality and the reliability of its products. Nevertheless, semiconductor devices in general can malfunction or fail due to their inherent electrical sensitivity and vulnerability to physical stress. It is the responsibility of the buyer, when utilizing TOSHIBA products, to observe standards of safety, and to avoid situations in which a malfunction or failure of a TOSHIBA product could cause loss of human life, bodily injury or damage to property. In developing your designs, please ensure that TOSHIBA products are used within specified operating ranges as set forth in the most recent products specifications. Also, please keep in mind the precautions and conditions set forth in the TOSHIBA Semiconductor Reliability Handbook.

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● The information contained herein is subject to change without notice.

OPTO-ELECTRICAL CHARACTERISTICS (Ta = 25°C)

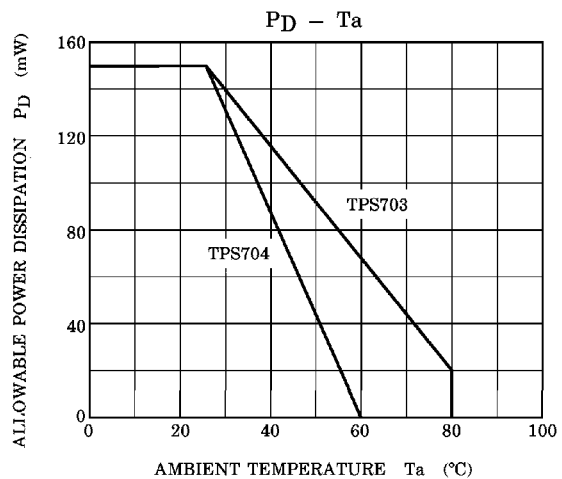
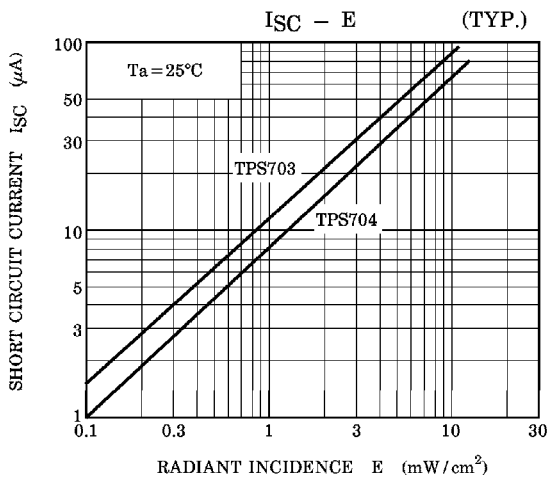
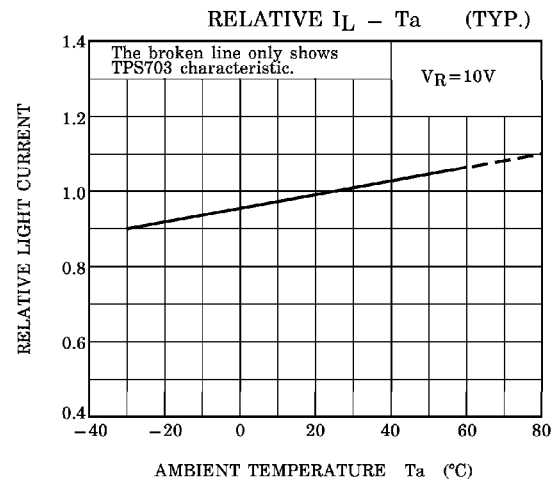
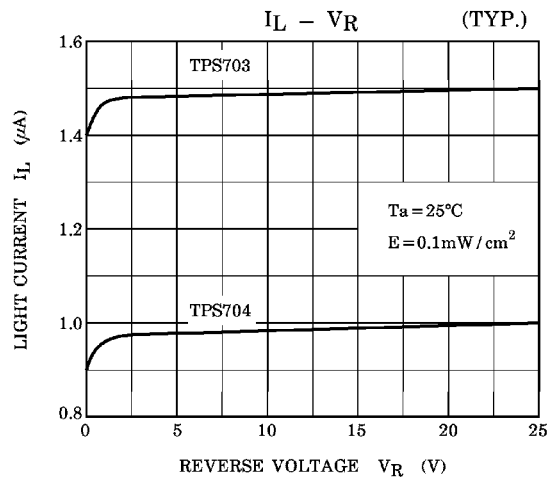
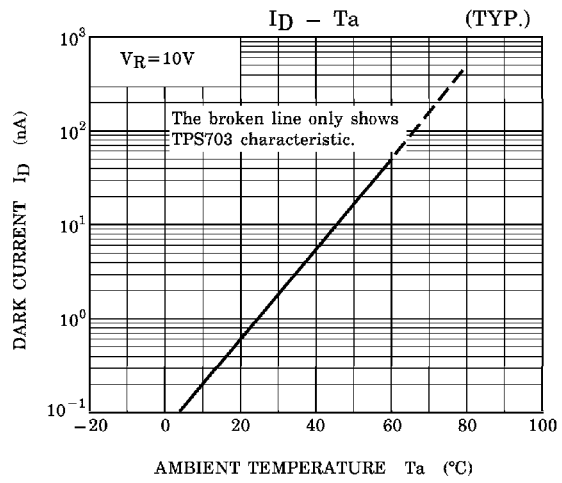
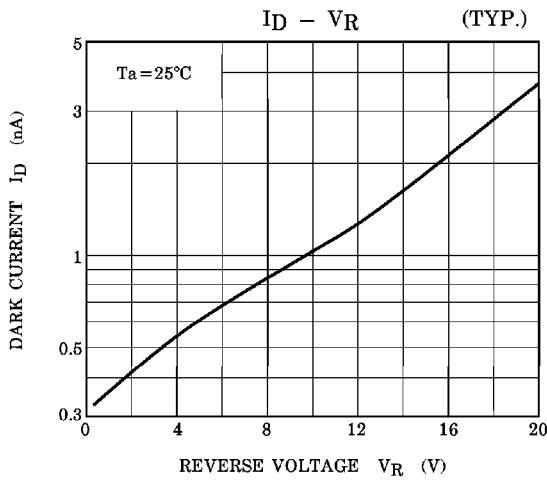
CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Short Circuit Current	I _{SC}	E = 0.1mW / cm ² (Note)	TPS703	0.9	1.5	—	μA
			TPS704	0.5	0.9	—	
Dark Current	I _D	V _R = 10V, E = 0		—	1	30	nA
Open Circuit Voltage	V _{OP}	E = 0.1mW / cm ² (Note)	TPS703	150	250	—	mV
Capacitance	C _T	V _R = 3V, f = 1MHz		—	20	—	pF
Peak Sensitivity Wavelength	λ _P	—	TPS703	—	960	—	nm
			TPS704	—	1000	—	
Switching Time	Rise Time	t _r	V _R = 10V, R _L = 1kΩ	—	100	—	ns
	Fall Time	t _f		—	100	—	
Half Value Angle	θ _{1/2}			—	±65	—	°

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

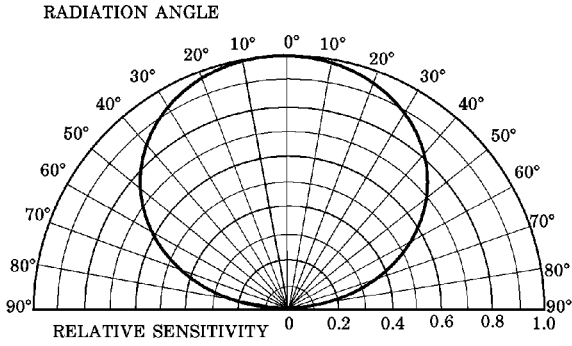
PRECAUTION

Please be careful of the followings.

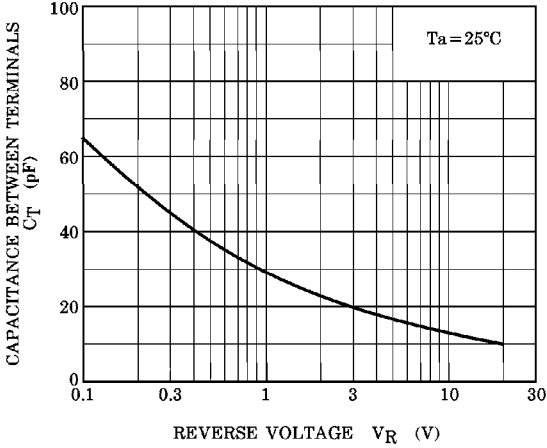
1. Soldering shall be performed at a portion of lead above 2.3mm from the body of the device.
2. If the lead is formed, the lead should be formed at a distance of 2.3mm from the body of the device.
Soldering shall be performed after lead forming.



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



C_T - V_R (TYP.)



SPECTRAL RESPONSE (TYP.)

