

TOSHIBA PHOTO DIODE SILICON PIN

TPS703, TPS704

SILICON PIN PHOTO DIODE FOR REMOTE CONTROL

VARIOUS KINDS OF REMOTE CONTROL SYSTEMS

SMOKE SENSOR

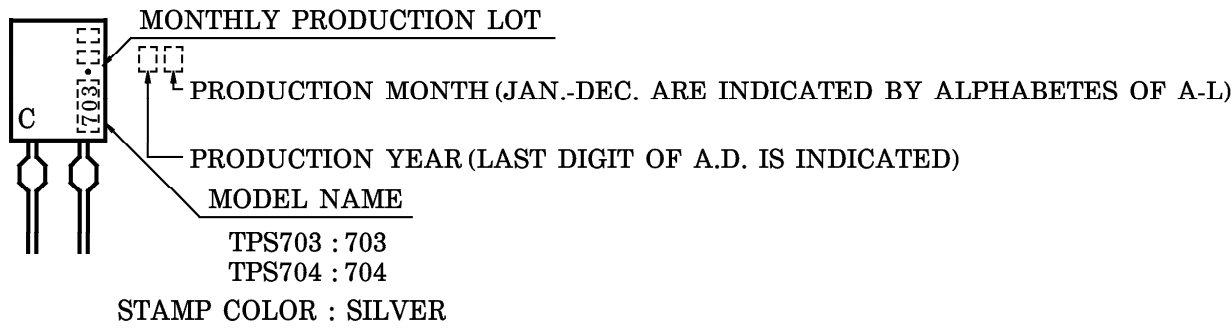
OPTICAL COMMUNICATION

- 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.

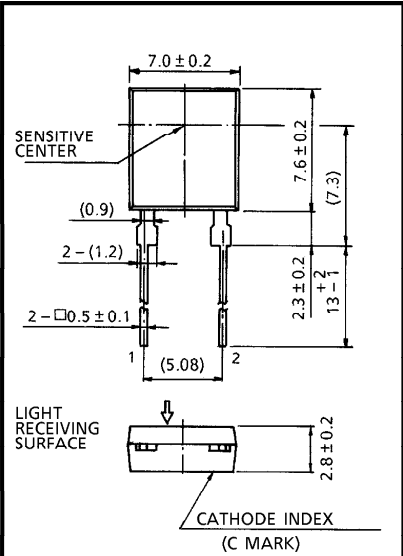
MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Reverse Voltage		V_R	20	V
Power Dissipation		P_D	150	mW
Power Dissipation Derating (Ta > 25°C)	TPS703	$\Delta P_D / ^\circ\text{C}$	-2.36	mW / °C
	TPS704		-4.3	
Operating Temperature Range	TPS703	T_{opr}	-30~80	°C
	TPS704		-30~60	
Storage Temperature Range	TPS703	T_{stg}	-40~90	°C
	TPS704		-40~60	
Soldering Temperature · Time		T_{sol}	260°C·3s	—

PRODUCT INDICATION



Unit in mm



() : REFERENCE VALUE

JEDEC	—
EIAJ	—
TOSHIBA	0-7B1

Weight : 0.31g (Typ.)

PIN CONNECTION



1. ANODE
2. CATHODE

961001EAA2

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OPTO-ELECTRICAL CHARACTERISTICS (Ta = 25°C)

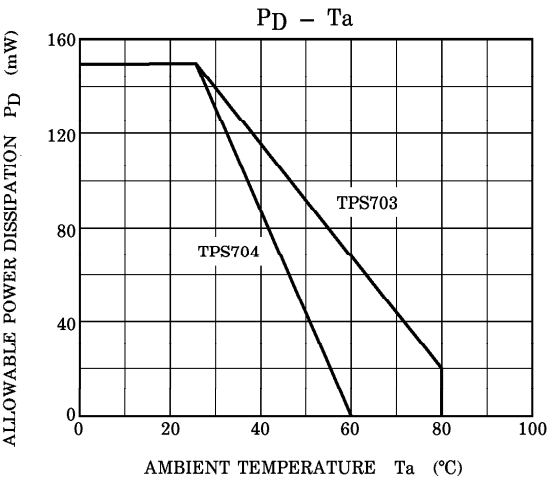
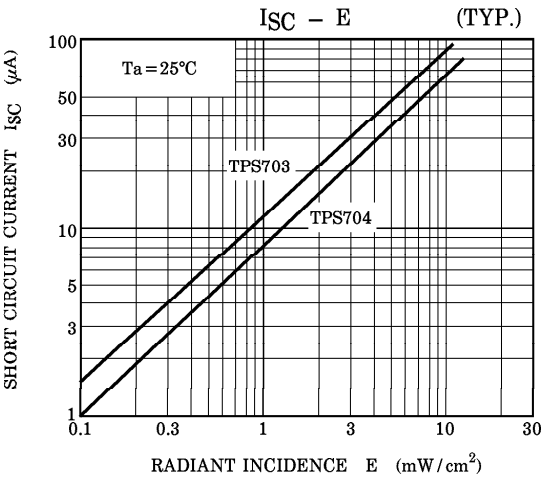
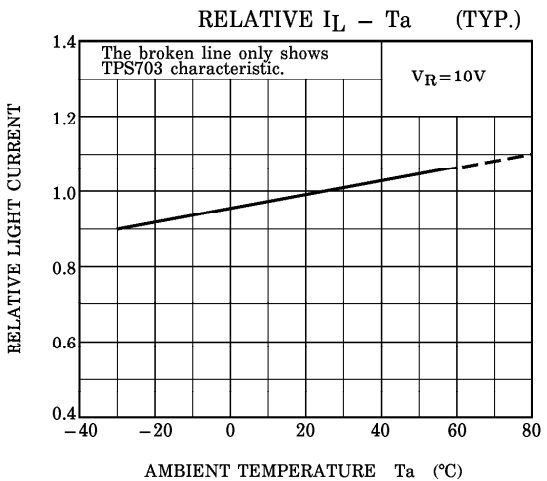
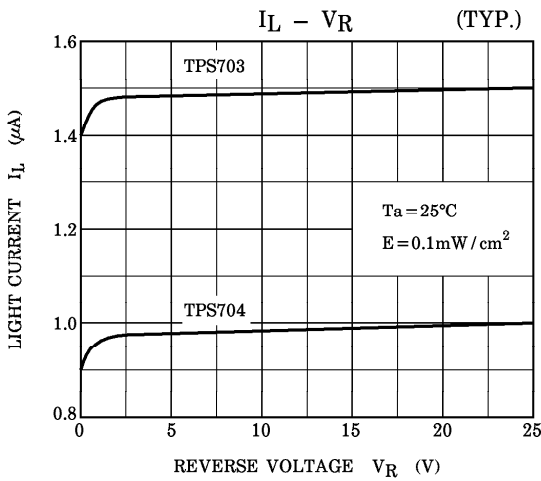
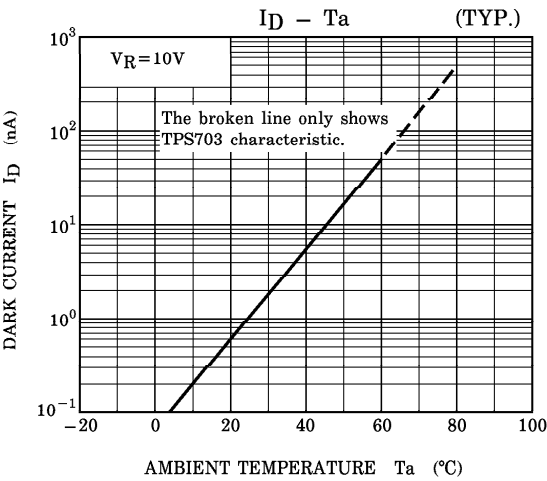
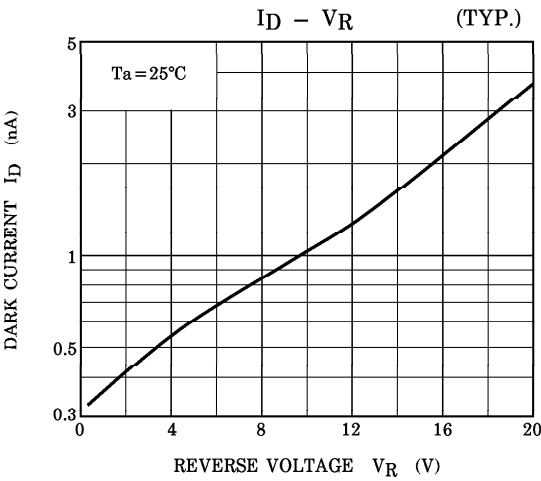
CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Short Circuit Current		I_{SC}	E = 0.1mW / cm ² (Note)	TPS703	0.9	1.5	μ A
				TPS704	0.5	0.9	
Dark Current		I_D	$V_R = 10V, E = 0$	—	1	30	nA
Open Circuit Voltage		V_{OP}	E = 0.1mW / cm ² (Note)	TPS703	150	250	mV
Capacitance		C_T	$V_R = 3V, f = 1MHz$	—	20	—	pF
Peak Sensitivity Wavelength		λ_P	—	TPS703	—	960	nm
				TPS704	—	1000	
Switching Time	Rise Time	t_r	$V_R = 10V, R_L = 1k\Omega$	—	100	—	ns
	Fall Time	t_f		—	100	—	
Half Value Angle		$\theta_{\frac{1}{2}}$		—	± 65	—	°

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

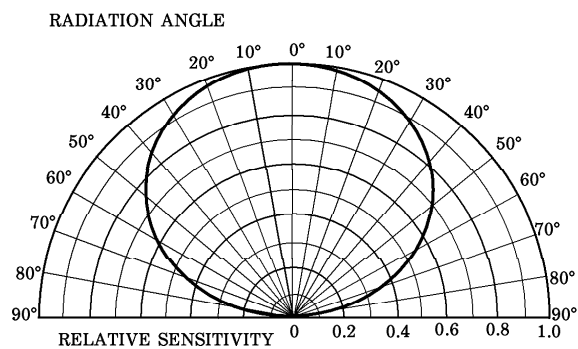
PRECAUTION

Please be careful of the followings.

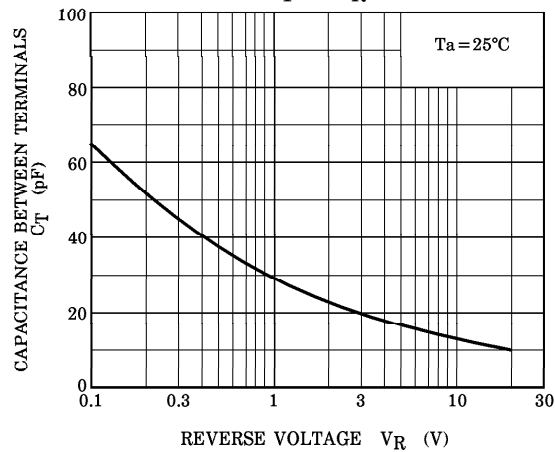
1. Soldering shall be performed at a portion of lead above 2.3mm from the body of the device.
2. If the lead is formed, the lead should be formed at a distance of 2.3mm from the body of the device.
Soldering shall be performed after lead forming.



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



$C_T - V_R$ (TYP.)



SPECTRAL RESPONSE (TYP.)

