

TOSHIBA PHOTO DIODE SILICON PIN

TPS703, TPS704

SILICON PIN PHOTO DIODE FOR REMOTE CONTROL

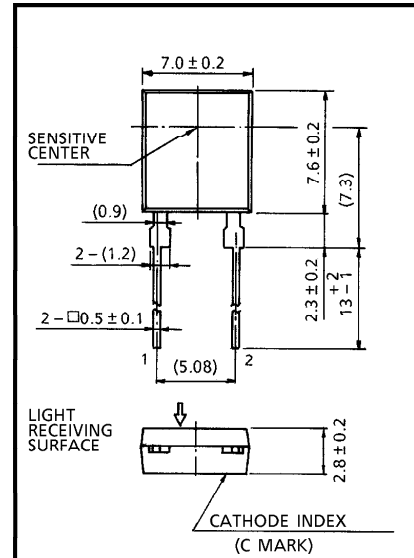
VARIOUS KINDS OF REMOTE CONTROL SYSTEMS

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

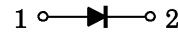
MAXIMUM RATINGS (Ta = 25°C)

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

| | |
|---------|-------|
| JEDEC | — |
| EIAJ | — |
| TOSHIBA | 0-7B1 |

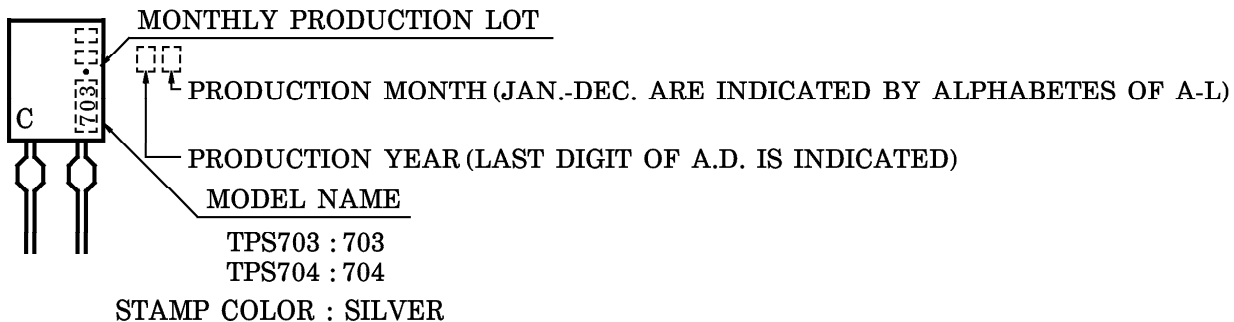
Weight : 0.31g (Typ.)

PIN CONNECTION



1. ANODE
2. CATHODE

PRODUCT INDICATION



961001EAA2

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OPTO-ELECTRICAL CHARACTERISTICS (Ta = 25°C)

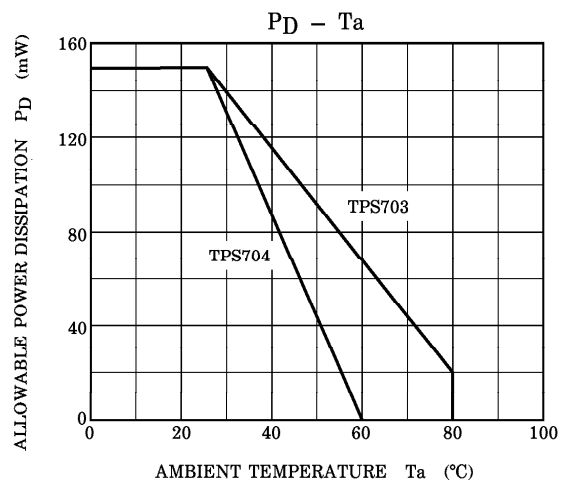
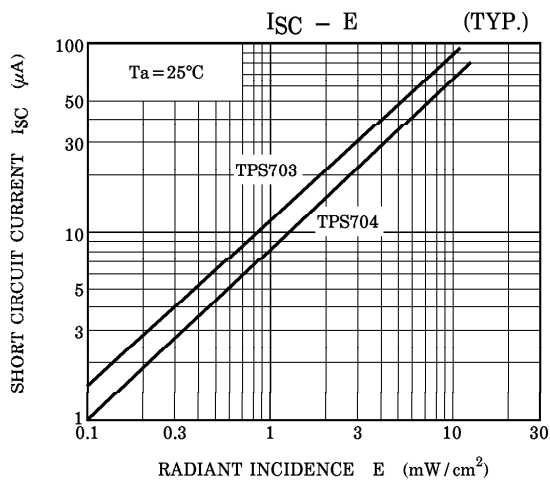
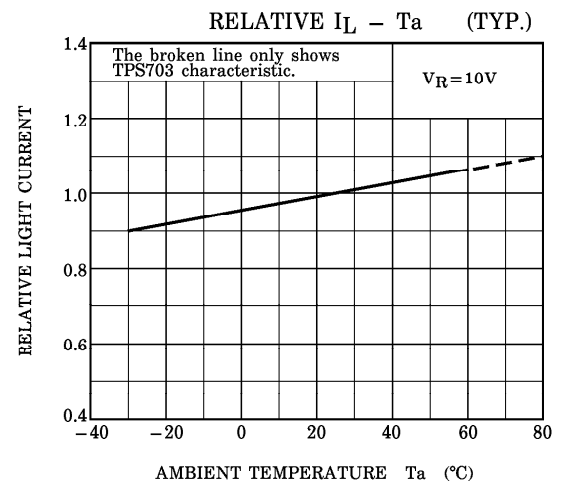
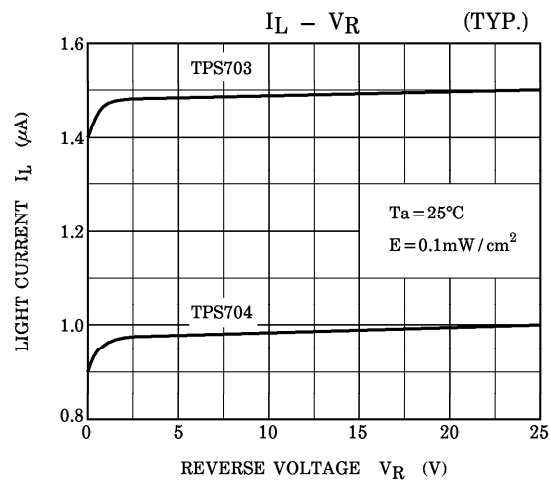
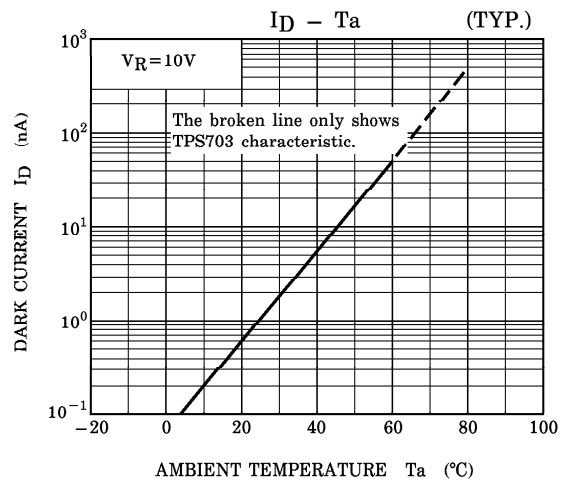
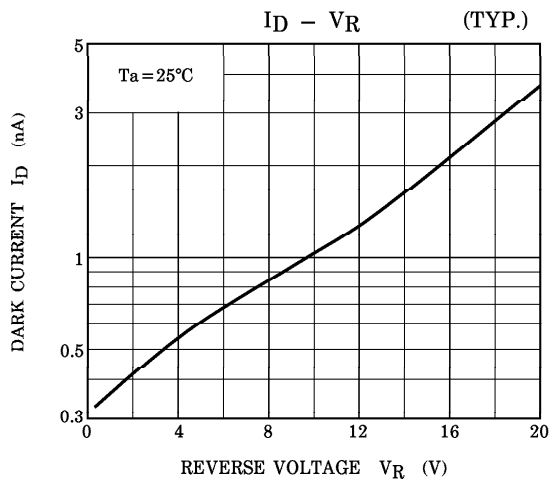
| CHARACTERISTIC | | SYMBOL | TEST CONDITION | MIN. | TYP. | MAX. | UNIT | |
|-----------------------------|-----------|------------------|--|--------|------|------|------|----|
| Short Circuit Current | | I _{SC} | E = 0.1mW / cm ² (Note) | TPS703 | 0.9 | 1.5 | — | μA |
| | | | | TPS704 | 0.5 | 0.9 | | |
| 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)

