

TOSHIBA PHOTO TRANSISTOR SILICON NPN EPITAXIAL PLANAR

TPS603A

PHOTO TRANSISTOR FOR PHOTO SENSOR

PHOTOELECTRIC COUNTER

VARIOUS KINDS OF READERS

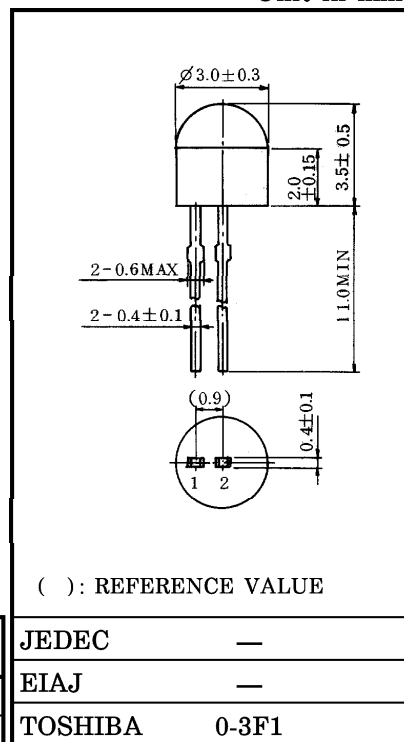
POSITION DETECTION

CONTROLLER OF HOME ELECTRIC EQUIPMENT

DETECTOR FOR STOBOSCOPIC CONTROL

- $\phi 3\text{mm}$ resin package
- Wide half value angle facilitates setting. $\theta_{\frac{1}{2}} = \pm 55^\circ$ (TYP.)
- The same size TLN103A is available as an infrared LED.

Unit in mm



() : REFERENCE VALUE

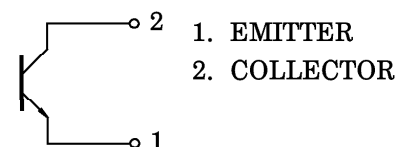
MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Emitter Voltage	V _{CEO}	20	V
Emitter-Collector Voltage	V _{ECO}	5	V
Collector Current	I _C	20	mA
Collector Power Dissipation	P _C	75	mW
Collector Power Dissipation Derating (Ta > 25°C)	$\Delta P_C / ^\circ C$	-1	mW / °C
Operating Temperature Range	T _{opr}	-20~75	°C
Storage Temperature Range	T _{stg}	-30~100	°C

JEDEC	—
EIAJ	—
TOSHIBA	0-3F1

Weight : 0.08g (TYP.)

PIN CONNECTION



OPTO-ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Dark Current	I _D (I _{CEO})	V _{CE} = 10V, E = 0	—	0.01	0.1	μA
Light Current	I _L (I _C)	V _{CE} = 3V, E = 0.1mW / cm ² (Note)	6	20	—	μA
Collector-Emitter Saturation Voltage	V _{CE} (sat)	I _C = 1μA, E = 0.1mW / cm ² (Note)	—	0.2	0.4	V
Switching Time	Rise Time	V _{CC} = 10V, I _C = 1mA R _L = 1kΩ (Fig. 1)	—	9	—	μs
	Fall Time		—	10	—	
Peak Sensitivity Wavelength	λ _P		—	720	—	nm
Half Value Angle	θ _{1/2}		—	±55	—	°

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

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PRECAUTION

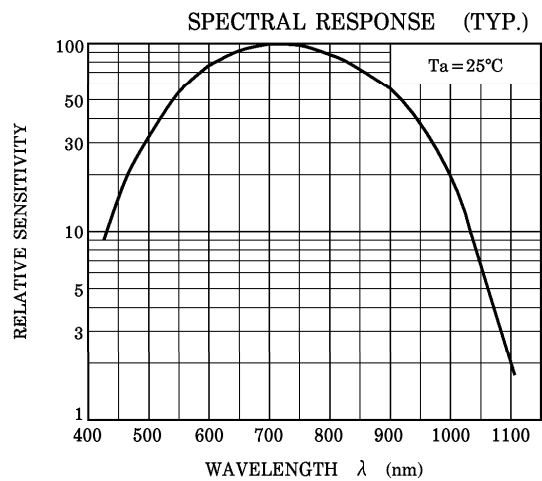
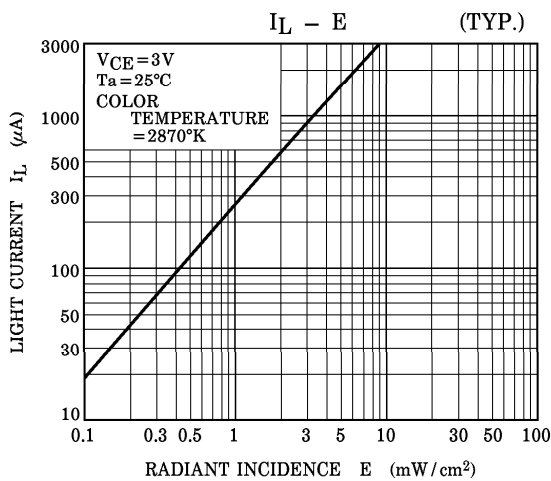
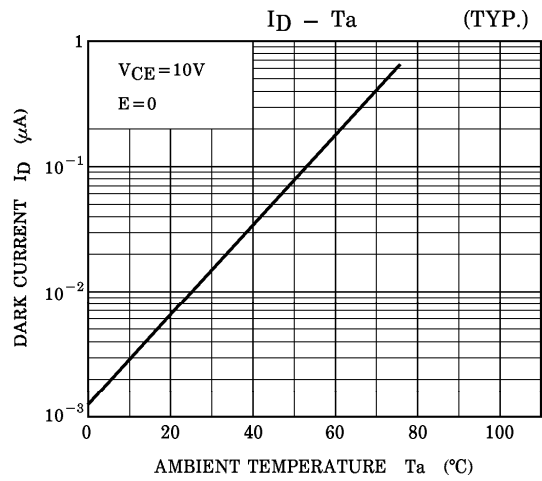
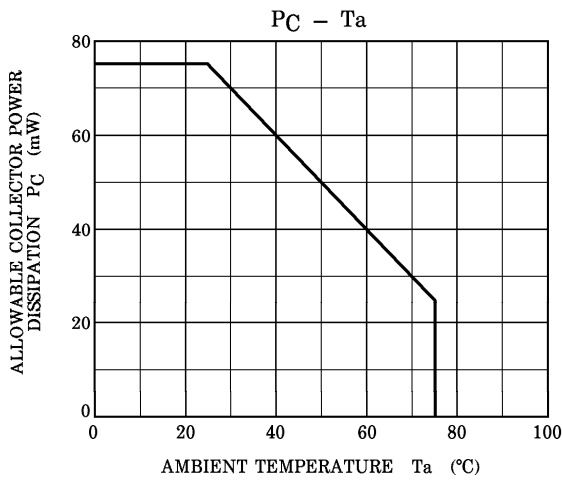
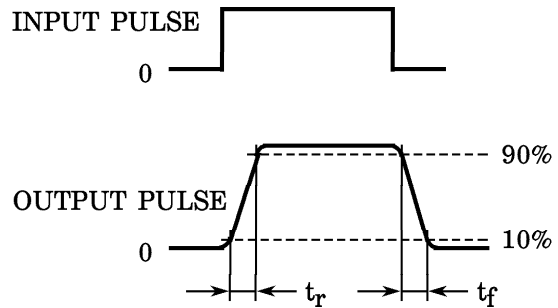
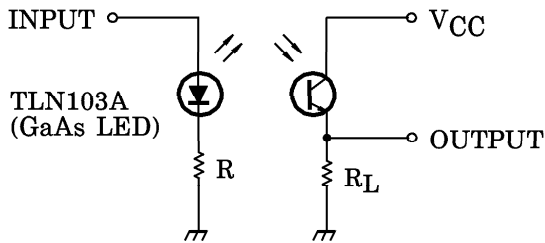
Please be careful of the followings.

1. Soldering temperature : 260°C MAX. Soldering time : 3s MAX.
(Soldering portion of lead : above 1.5mm from the body of the device)
2. If the lead is formed, the lead should be formed at a distance of 2mm from the body of the device.
Soldering shall be performed after lead forming.

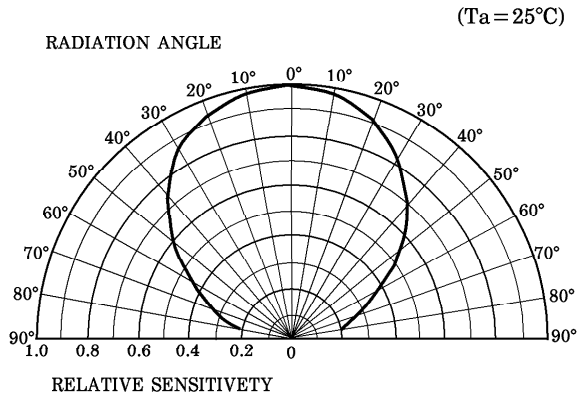
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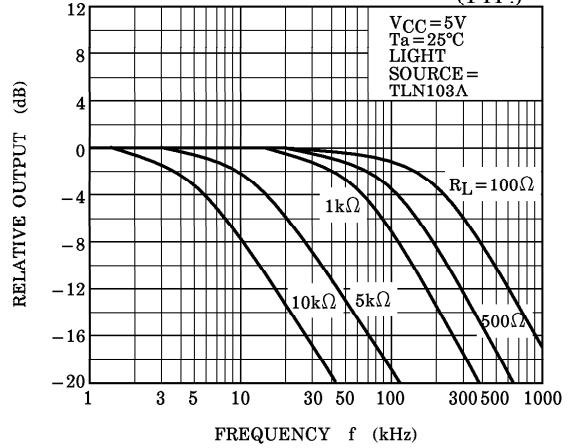
Fig. 1 SWITCHING TIME TEST CIRCUIT



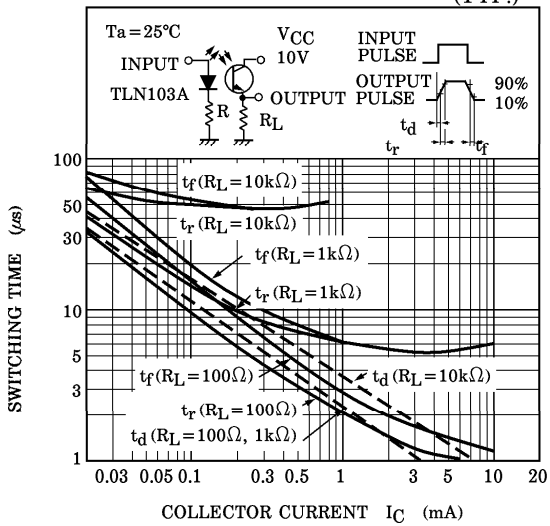
DECTIONAL SENSITIVITY CHARACTERISTIC (TYP.)



FREQUENCY CHARACTERISTICS (TYP.)



SWITCHING CHARACTERISTICS (TYP.)



RELATIVE $I_L - T_a$ (TYP.)

