TOSHIBA PHOTO TRANSISTOR SILICON NPN EPITAXIAL PLANAR

TPS603A

PHOTO TRANSISTOR FOR PHOTO SENSOR

PHOTOELECTRIC COUNTER

VARIOUS KINDS OF READERS

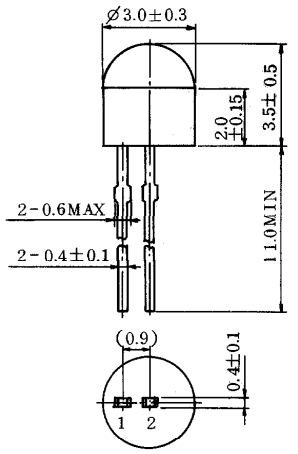
POSITION DETECTION

CONTROLLER OF HOME ELECTRIC EQUIPMENT

DETECTOR FOR STOBOSCOPIC CONTROL

- ϕ3mm resin package
- Wide half value angle facilitates setting. : $\theta\frac{1}{2} = \pm 55°$ (TYP.)
- The same size TLN103A is available as an infrared LED.

Unit in mm

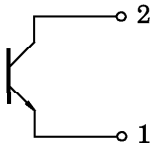


( ): REFERENCE VALUE

JEDEC	—
EIAJ	—
TOSHIBA	0-3F1

Weight : 0.08g (TYP.)

PIN CONNECTION



1. EMITTER
2. COLLECTOR

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)	ΔP_C / °C	−1	mW / °C
Operating Temperature Range	T_{opr}	−20~75	°C
Storage Temperature Range	T_{stg}	−30~100	°C

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 / cm² (Note)	6	20	—	μA
Collector-Emitter Saturation Voltage		$V_{CE\ (sat)}$	I_C = 1μA, E = 0.1mW / cm² (Note)	—	0.2	0.4	V
Switching Time	Rise Time	t_r	V_{CC} = 10V, I_C = 1mA	—	9	—	μs
	Fall Time	t_f	R_L = 1kΩ (Fig. 1)	—	10	—	
Peak Sensitivity Wavelength		λ_P		—	720	—	nm
Half Value Angle		$\theta\frac{1}{2}$		—	±55	—	°

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

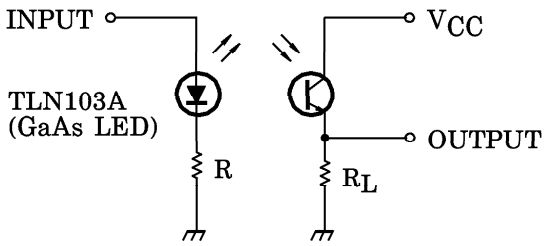
961001EAA2

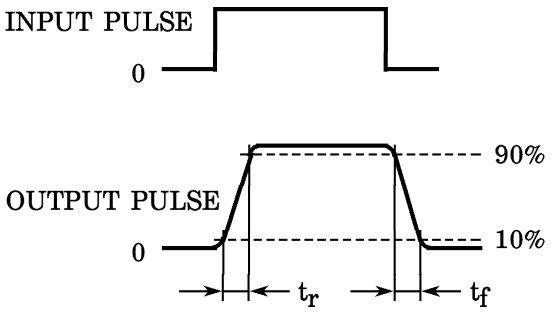
PRECAUTION

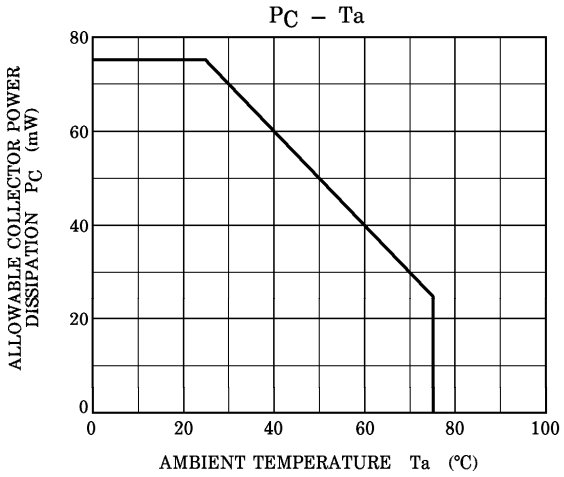
Please be careful of the followings.

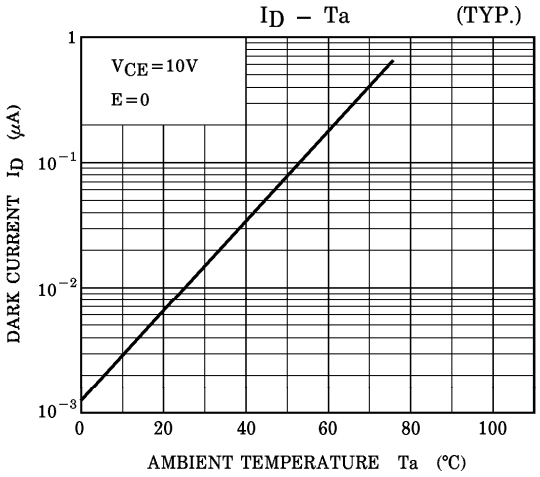
1. Soldering temperature : 260°C MAX. Soldering time : 3s MAX.
   (Soldering portion of lead : above 1.5mm from the body of the device)
2. If the lead is formed, the lead should be formed at a distance of 2mm from the body of the device. Soldering shall be performed after lead forming.

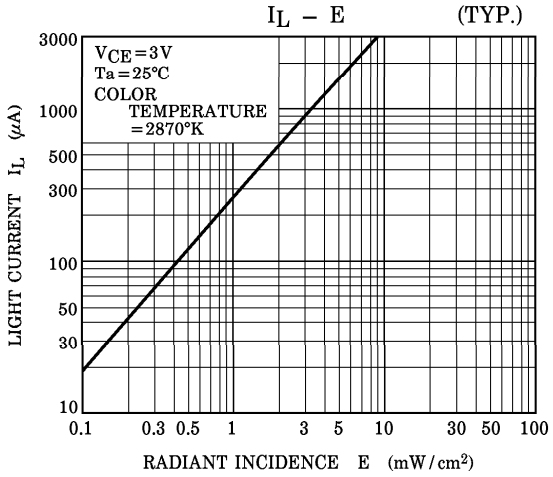
Fig. 1 SWITCHING TIME TEST CIRCUIT

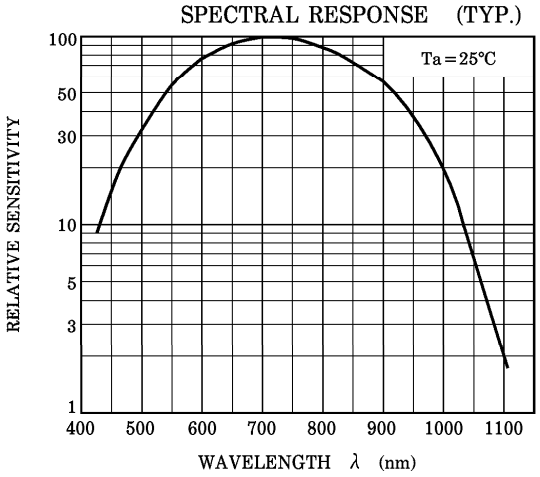






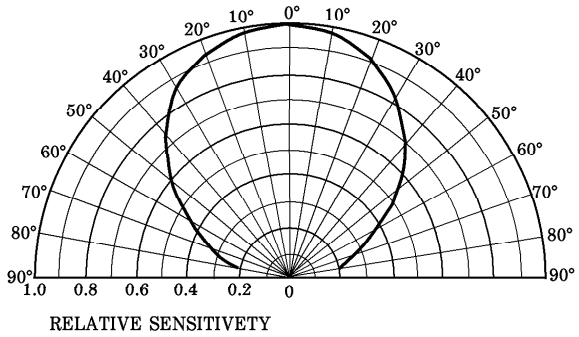




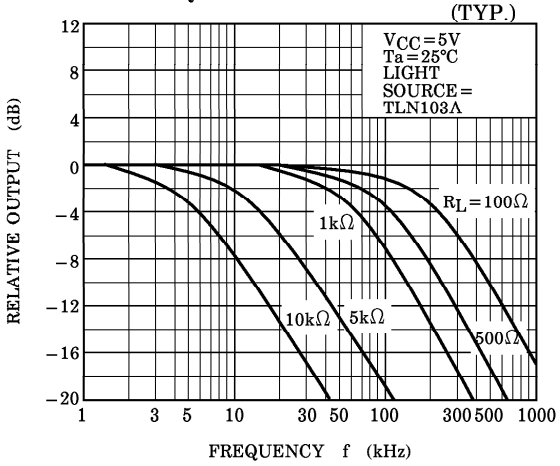


DECTIONAL SENSITIVITY CHARACTERISTIC (TYP.)

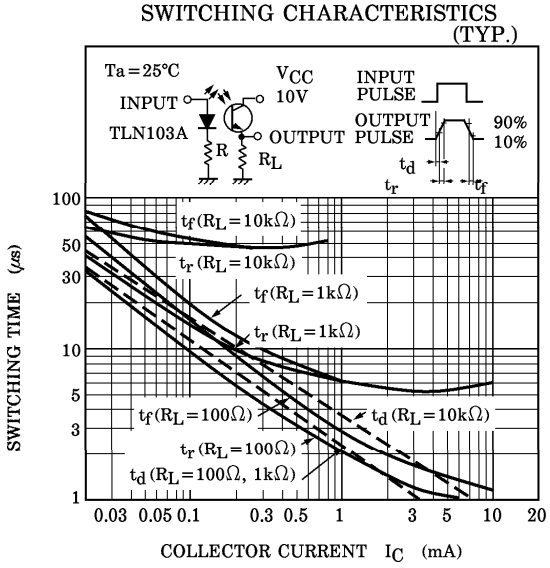
(Ta = 25°C)



FREQUENCY CHARACTERISTICS (TYP.)



SWITCHING CHARACTERISTICS (TYP.)



RELATIVE I_L – Ta (TYP.)