

TOSHIBA

TPS616

TOSHIBA PHOTO TRANSISTOR SILICON NPN EPITAXIAL PLANAR

TPS616

FLOPPY DISK DRIVE

VCR

POSITION DETECTOR OF HOME ELECTRIC EQUIPMENT

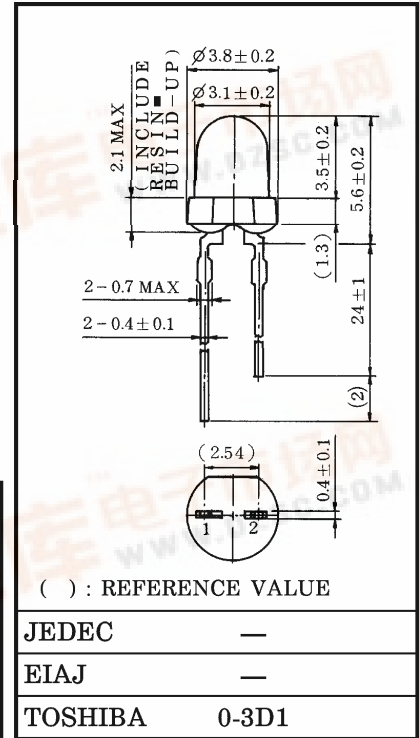
OPTO-ELECTRONIC SWITCH

- $\phi 3.1\text{mm}$ epoxy resin package. (black)
- Light current : $I_L = 10\mu\text{A}$ (MIN.) at $E = 0.1\text{mW}/\text{cm}^2$
- Half value angle : $\theta_{\frac{1}{2}} = \pm 30^\circ$ (TYP.)
- Protected from external light by black mold packaging.

MAXIMUM RATINGS ($T_a = 25^\circ\text{C}$)

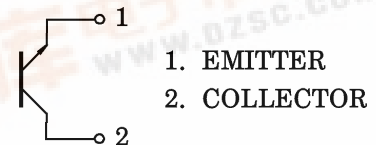
CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Emitter Voltage	V_{CEO}	30	V
Emitter-Collector Voltage	V_{ECO}	5	V
Collector Current	I_C	20	mA
Collector Power Dissipation	P_C	75	mW
Collector Power Dissipation Derating ($T_a > 25^\circ\text{C}$)	$\Delta P_C / ^\circ\text{C}$	-1	mW / $^\circ\text{C}$
Operating Temperature Range	T_{opr}	-30~85	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-30~100	$^\circ\text{C}$

Unit in mm



Weight : 0.12g (TYP.)

PIN CONNECTION

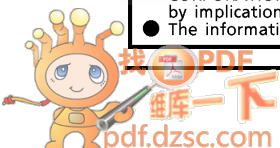


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OPTO-ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Dark Current	$I_D (I_{CEO})$	$V_{CE} = 24V$	—	0.01	0.1	μA
Light Current	I_L (Note 2)	$V_{CE} = 3V, E = 0.1mW/cm^2$ (Note 1)	10	—	75	μA
Collector-Emitter Saturation Voltage	$V_{CE} (sat)$	$I_C = 5\mu A, E = 0.1mW/cm^2$ (Note 1)	—	0.2	0.4	V
Peak Sensitivity Wavelength	λ_P	—	—	900	—	nm
Half Vaule Angle	$\theta_{\frac{1}{2}}$	—	—	± 30	—	°
Switching Time	Rise time	$V_{CC} = 10V, I_C = 1mA$ $R_L = 1k\Omega$	—	9	—	μs
	Fall Time		—	10	—	

Note 1. Color temperature = 2870°K, Standard Tungsten Lamp.

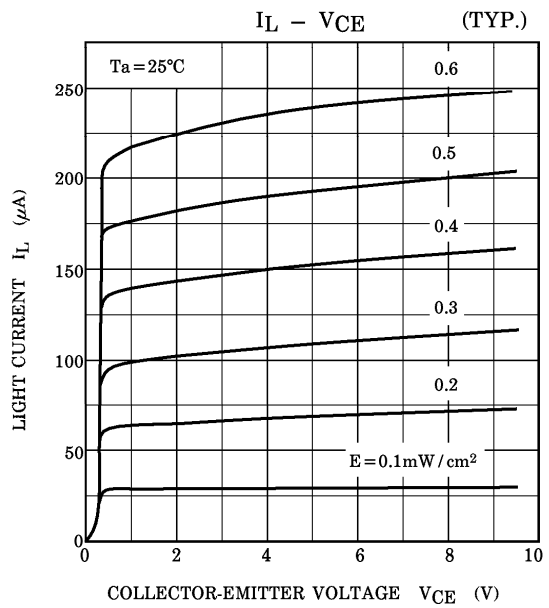
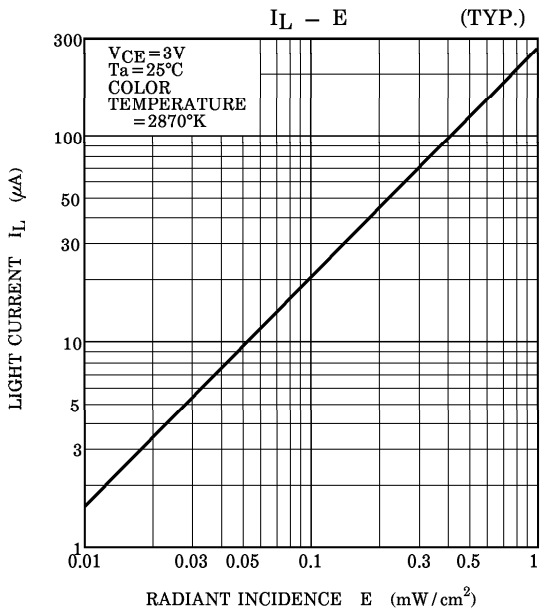
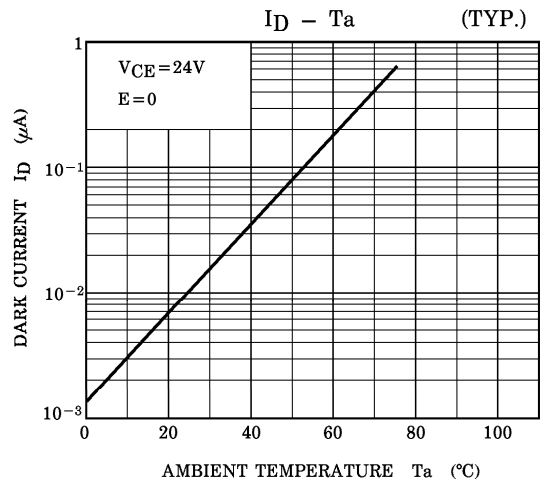
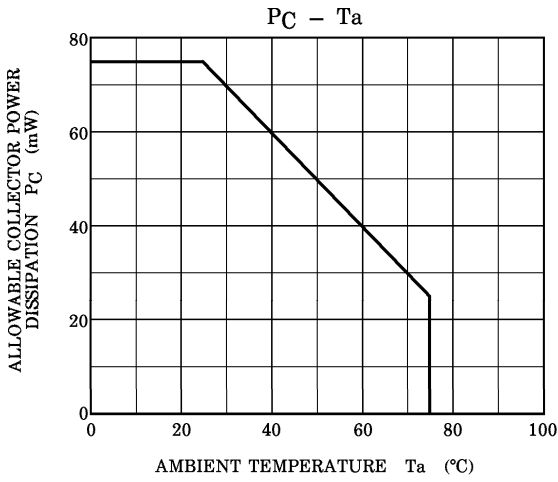
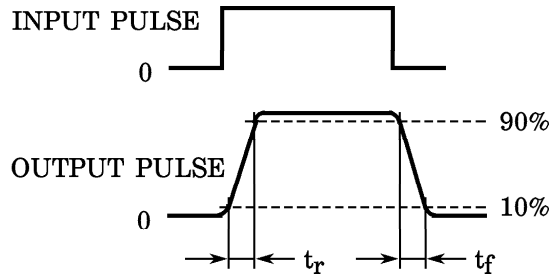
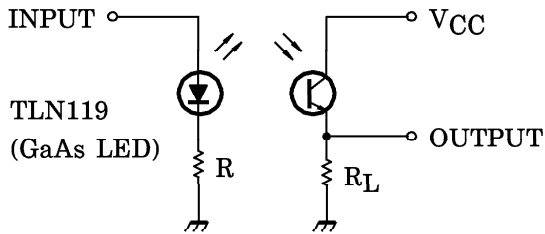
Note 2. I_L Classification A : 10~25 μA , B : 17~42.5 μA , C : 30~75 μA ,
AB : 10~42.5 μA , BC : 17~75 μA

PRECAUTION

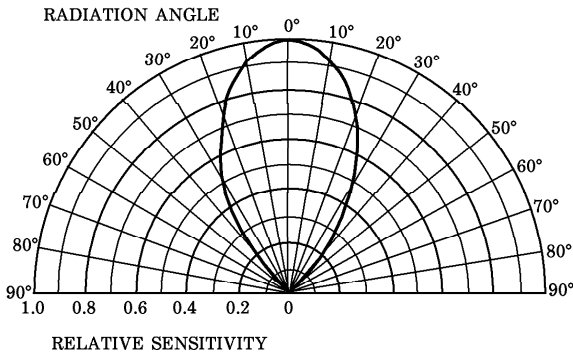
Please be careful of the followings.

- Soldering temperature : 260°C MAX. Soldering time : 3s MAX.
(Soldering portion of lead : above 1.5mm from the body of the device)
- 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.

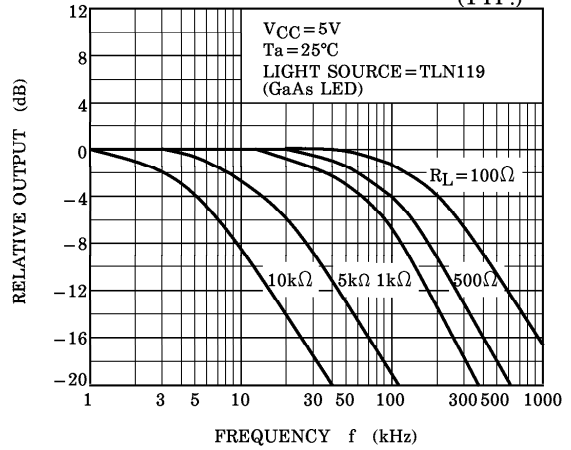
Fig.1 SWITCHING TIME TEST CIRCUIT



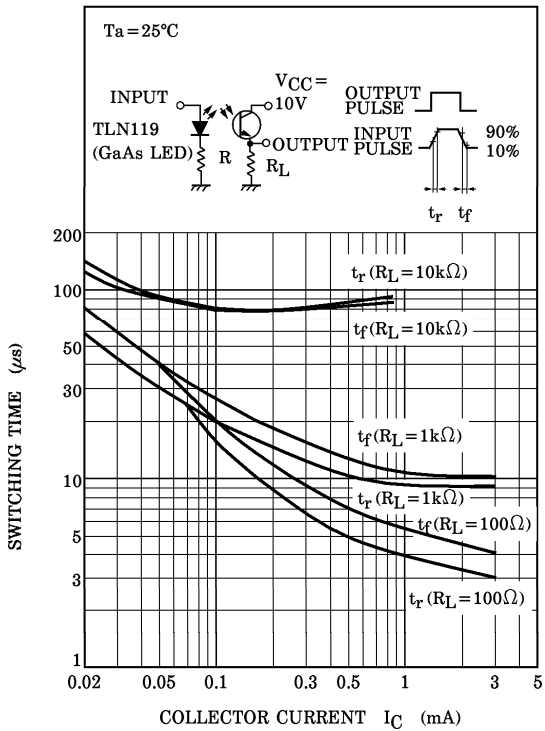
DIRECTIONAL SENSITIVITY CHARACTERISTIC (TYP.)
($T_a = 25^\circ\text{C}$)



FREQUENCY CHARACTERISTICS (TYP.)



SWITCHING CHARACTERISTICS (TYP.)



COUPLING CHARACTERISTICS WITH TLN119

