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TOSHIBA PHOTO TRANSISTOR SILICON NPN EPITAXIAL PLANAR

TPS615

FLOPPY DISK DRIVE

VCR

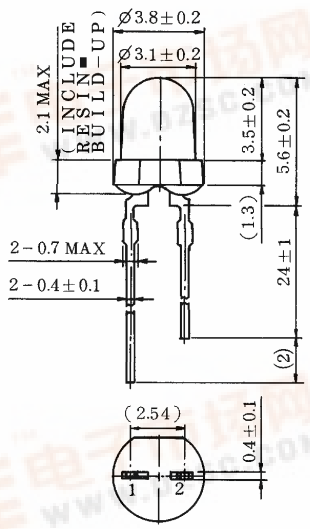
POSITION DETECTOR OF HOME ELECTRIC EQUIPMENT

STROBOSCOPE

OPTO-ELECTRONIC SWITCH

- ϕ3.1mm epoxy resin package
- Light current : $I_L = 20\mu A$ (MIN.) at $E = 0.1mW/cm^2$
- Half value angle : $\theta\frac{1}{2} = \pm 30°$ (TYP.)

Unit in mm



( ) : REFERENCE VALUE

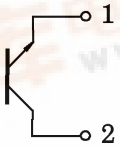
JEDEC	—
EIAJ	—
TOSHIBA	0-3D1

Weight : 0.12g (TYP.)

MAXIMUM RATINGS (Ta = 25°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 (Ta > 25°C)	ΔP_C / °C	−1	mW / °C
Operating Temperature Range	T_{opr}	−30~85	°C
Storage Temperature Range	T_{stg}	−30~100	°C

PIN CONNECTION



1. EMITTER
2. COLLECTOR

961001EAA2

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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)	20	—	150	μA
Collector-Emitter Saturation Voltage		V_{CE} (sat)	I_C = 10μA, E = 0.1mW / cm^2 (Note 1)	—	0.2	0.4	V
Peak Sensitivity Wavelength		λ_P	—	—	800	—	nm
Half Vaule Angle		$\theta \frac{1}{2}$	—	—	±30	—	°
Switching Time	Rise time	t_r	V_{CC} = 10V, I_C = 1mA R_L = 1kΩ	—	9	—	μs
	Fall Time	t_f		—	10	—	

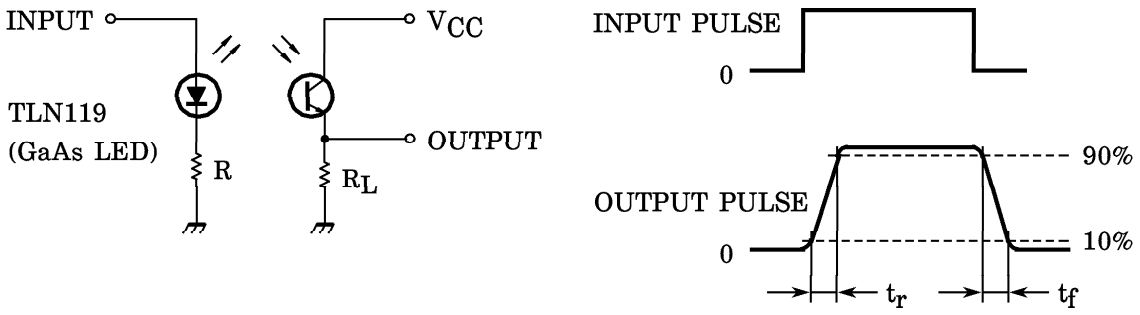
Note 1. Color temperature = 2870°K Standard Tungsten Lamp
Note 2. I_L Classification A : 20~50μA, B : 34~85μA, C : 60~150μA, AB : 20~85μA, BC : 34~150μA

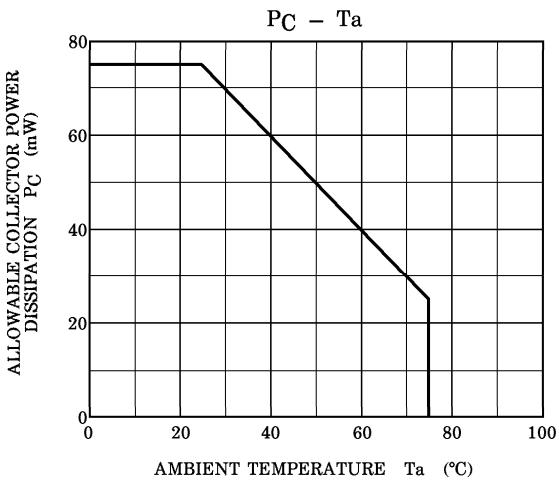
PRECAUTION

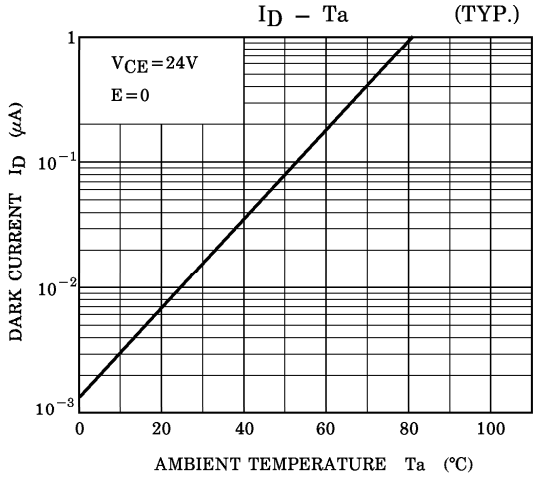
Please be careful of the followings.

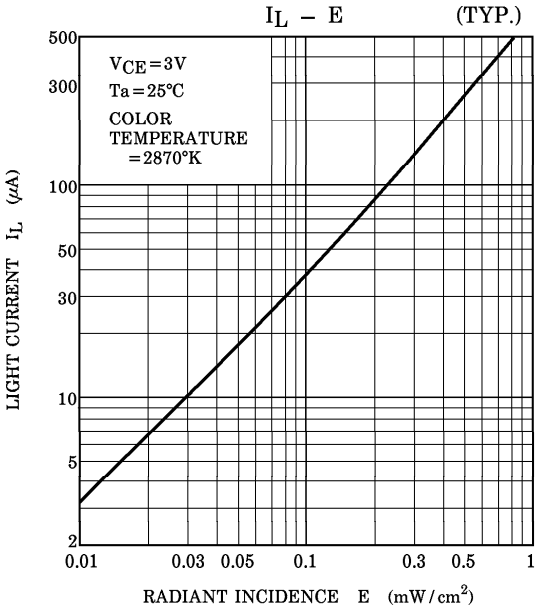
1. Soldering temperature : 260°C MAX.
   Soldering time : 3s MAX.
   (Soldering portion of lead : above 1.5mm from the body of the device)
2. If the lead is formed, the lead should be formed at a distance of 2mm from the body of the device. Soldering shall be performed after lead forming.

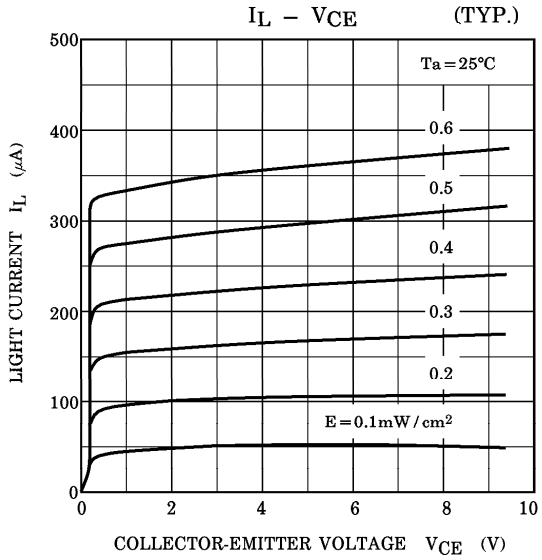
Fig. 1 SWITCHING TIME TEST CIRCUIT



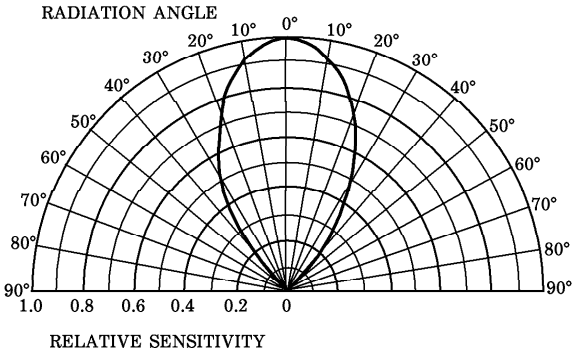




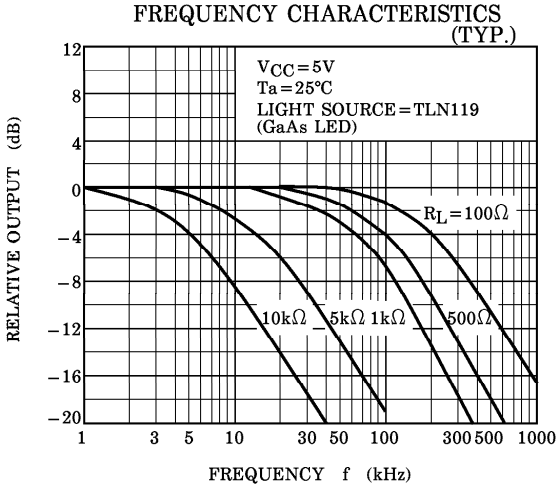




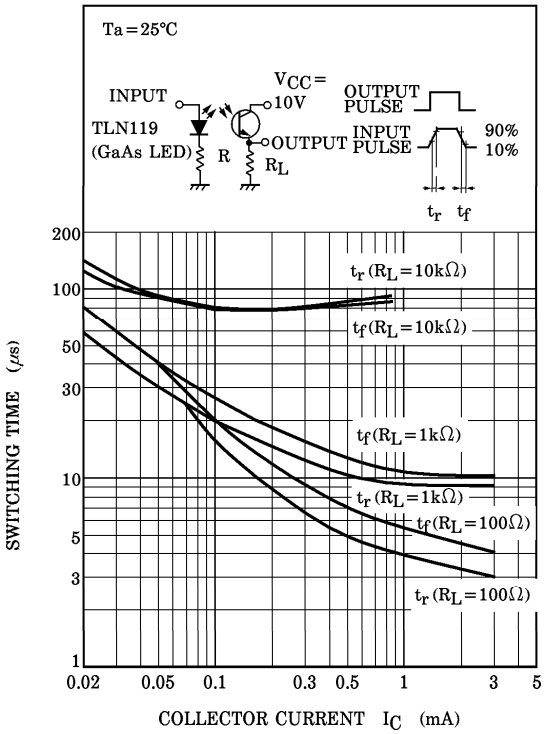
DIRECTIONAL SENSITIVITY CHARACTERISTIC (TYP.)
(Ta = 25°C)



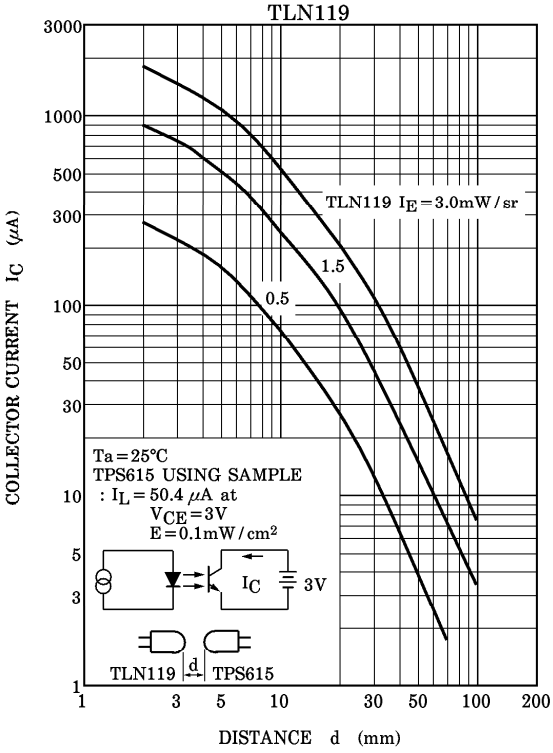
FREQUENCY CHARACTERISTICS (TYP.)

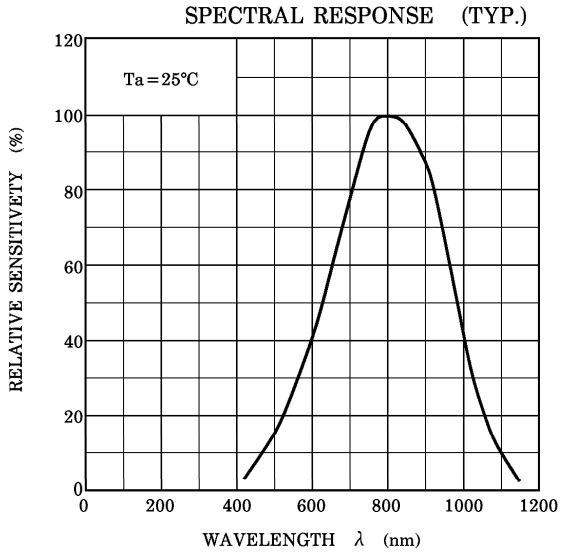


SWITCHING CHARACTERISTICS (TYP.)



COUPLING CHARACTERISTICS WITH TLN119




SPECTRAL RESPONSE (TYP.)
Ta = 25°C
RELATIVE SENSITIVETY (%)
120
100
80
60
40
20
0
0
200
400
600
800
1000
1200
WAVELENGTH λ (nm)