

TOSHIBA PHOTO TRANSISTOR SILICON NPN EPITAXIAL PLANAR

TPS601A

PHOTO TRANSISTOR FOR PHOTO SENSOR

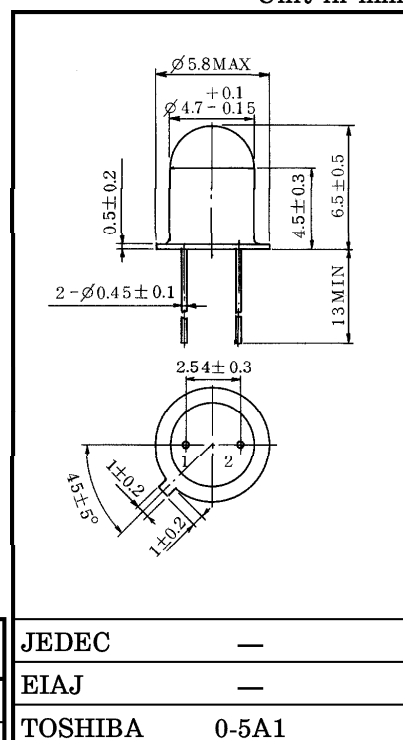
PHOTOELECTRIC COUNTER

POSITION DETECTION

VARIOUS KINDS OF READERS

- TO-18 metal package
- High sensitivity.
- Sharp directivity. Incident light can be effectively used.
: $\theta_{\frac{1}{2}} = \pm 10^\circ$ (TYP.)
- The same size TPS604 with the base pin is available.

Unit in mm

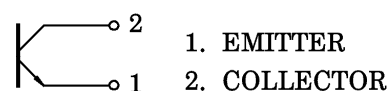


MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Emitter Voltage	V _{CEO}	40	V
Emitter-Collector Voltage	V _{ECO}	5	V
Collector Current	I _C	50	mA
Collector Power Dissipation	P _C	150	mW
Collector Power Dissipation Derating (Ta > 25°C)	ΔP _C / °C	—1.2	mW / °C
Operating Temperature Range	T _{opr}	—40~125	°C
Storage Temperature Range	T _{stg}	—55~150	°C

Weight : 0.39g (TYP.)

PIN CONNECTION



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} = 30V, E = 0		—	0.01	0.2	μA
Light Current		I _L	V _{CE} = 3V E = 0.1mW / cm ² (Note)	TPS601A	100	—	—	μA
				TPS601A-A	100	—	300	
				TPS601A-B	200	—	600	
				TPS601A-C	400	—	1200	
Collector-Emitter Saturation Voltage		V _{CE} (sat)	I _C = 30μA, E = 0.1mW / cm ² (Note)		—	0.25	0.4	V
Switching Time	Rise Time	t _r	V _{CC} = 5V, I _C = 10mA R _L = 100Ω		—	2	—	μs
	Fall Time	t _f			—	2	—	
Peak Sensitivity Wavelength		λ _P			—	800	—	nm
Half Value Angle		θ _½			—	± 10	—	°

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

PRECAUTION

Please be careful of the followings.

1. Soldering temperature : 260°C MAX.
Soldering time : 5s 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.

PRODUCT INDICATION

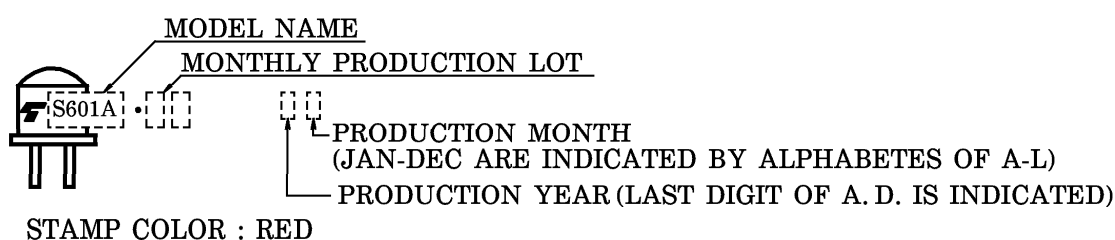
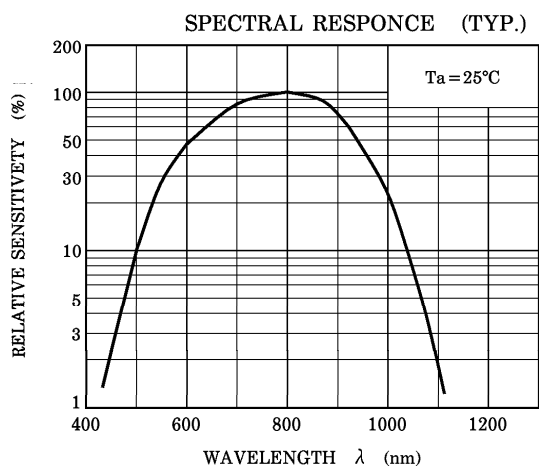
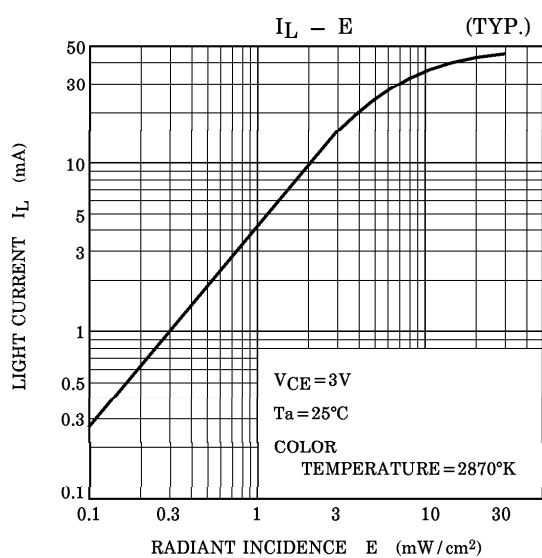
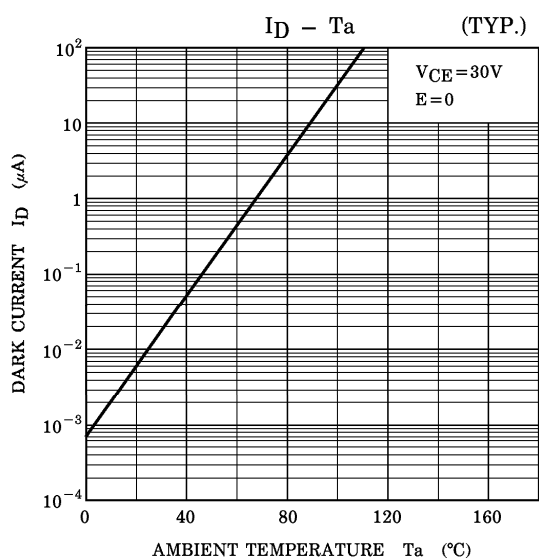
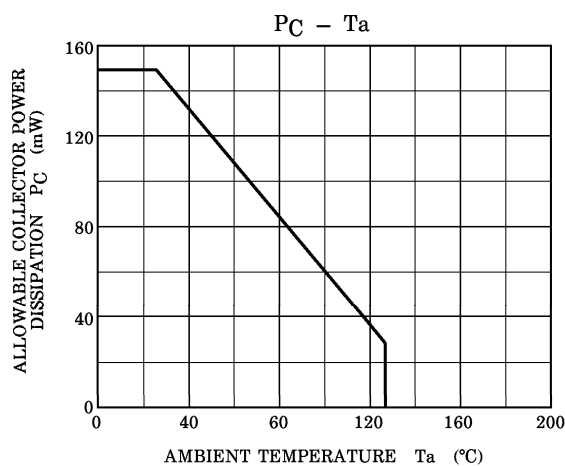
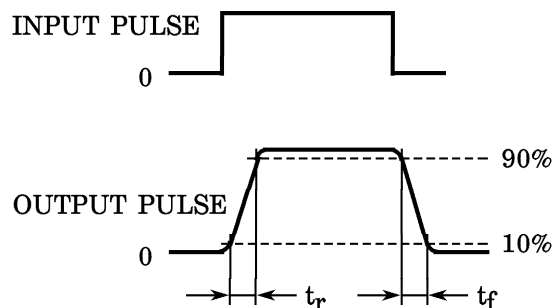
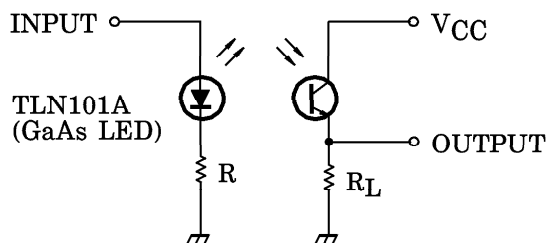
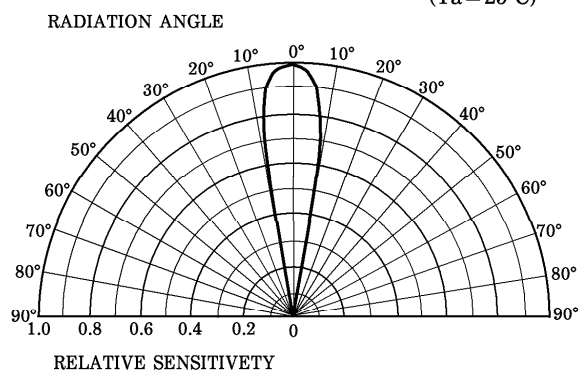


Fig.1 SWITCHING TIME TEST CIRCUIT

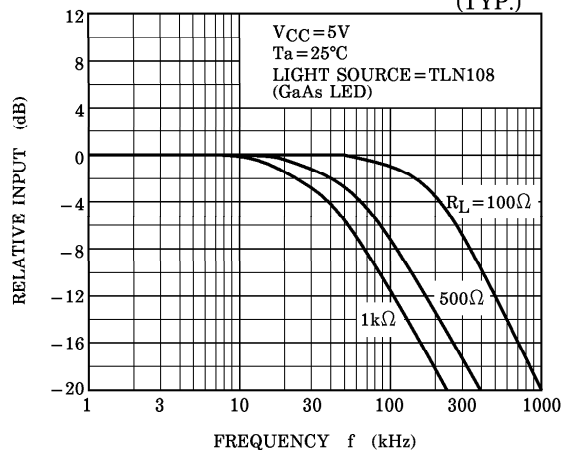


DIRECTIONAL SENSITIVITY CHARACTERISTIC (TYP.)

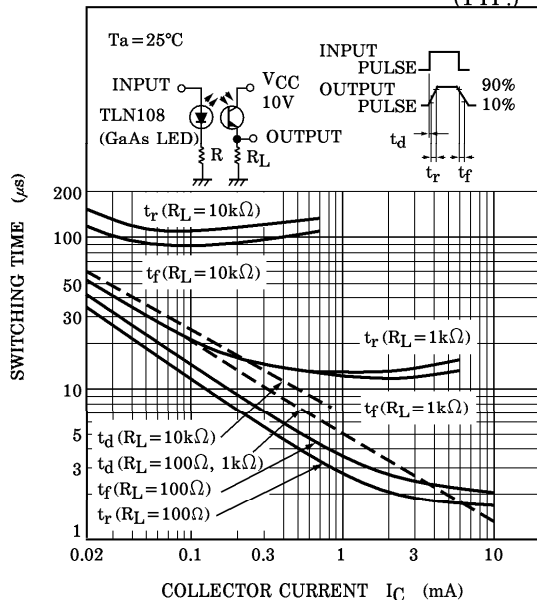
($T_a = 25^\circ\text{C}$)



FREQUENCY CHARACTERISTICS (TYP.)



SWITCHING CHARACTERISTICS (TYP.)



COUPLING CHARACTERISTICS WITH TLN101A

