

TOSHIBA PHOTO TRANSISTOR SILICON NPN EPITAXIAL PLANAR

TPS601A

PHOTO TRANSISTOR FOR PHOTO SENSOR

PHOTOELECTRIC COUNTER

POSITION DETECTION

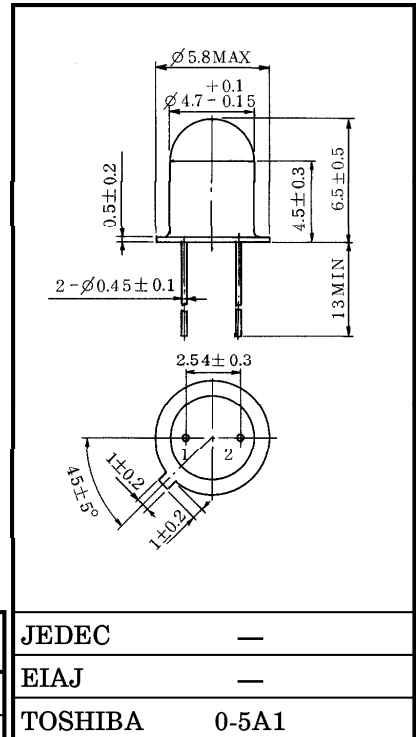
VARIOUS KINDS OF READERS

- 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.

MAXIMUM RATINGS (Ta = 25°C)

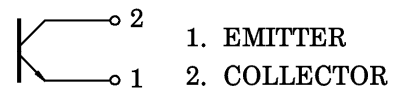
CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Emitter Voltage	V _{CEO}	40	V
Emitter-Collector Voltage	V _{ECO}	5	V
Collector Current	I _C	50	mA
Collector Power Dissipation	P _C	150	mW
Collector Power Dissipation Derating (Ta > 25°C)	$\Delta P_C / ^\circ C$	-1.2	mW / °C
Operating Temperature Range	T _{opr}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

Unit in mm



Weight : 0.39g (TYP.)

PIN CONNECTION



961001EAA2

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- The information contained herein is subject to change without notice.

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		$V_{CE (sat)}$	$I_C = 30\mu A, E = 0.1mW / cm^2$ (Note)	—	0.25	0.4	V	
Switching Time	Rise Time	t_r	$V_{CC} = 5V, I_C = 10mA$ $R_L = 100\Omega$	—	2	—	μs	
	Fall Time	t_f		—	2	—		
Peak Sensitivity Wavelength		λ_P		—	800	—	nm	
Half Value Angle		$\theta_{\frac{1}{2}}$		—	± 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

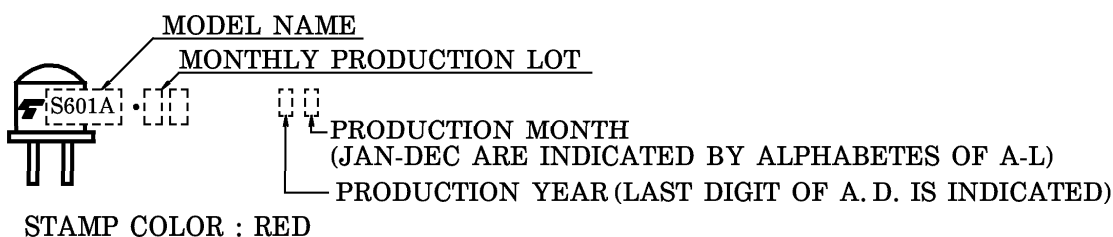
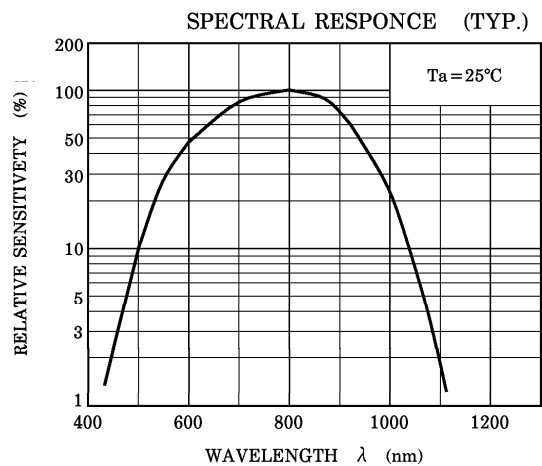
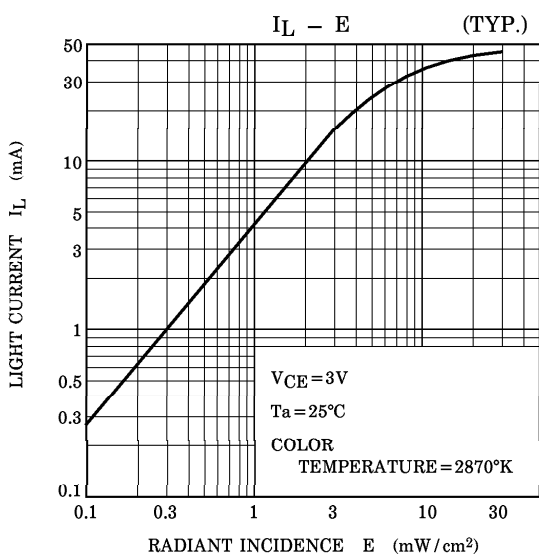
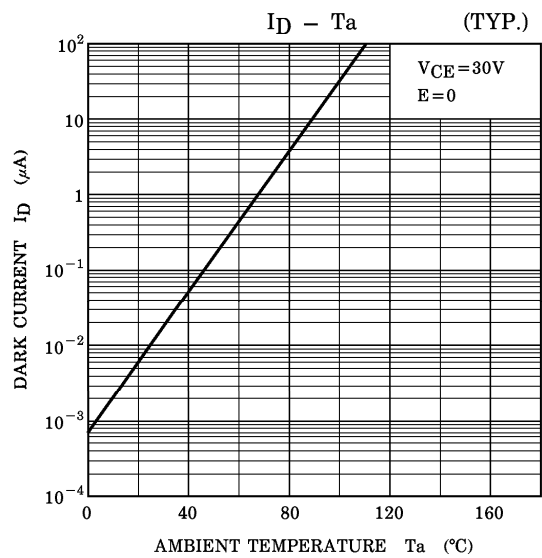
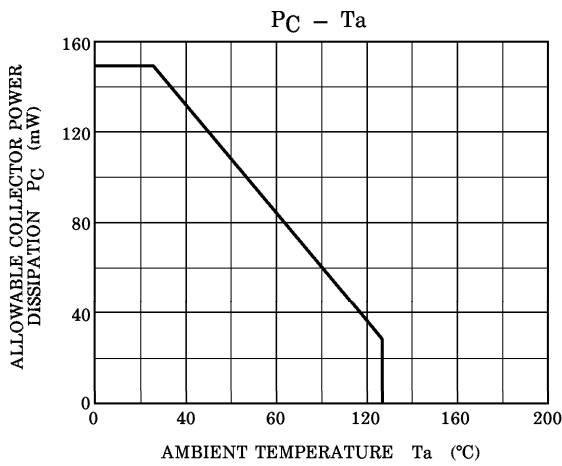
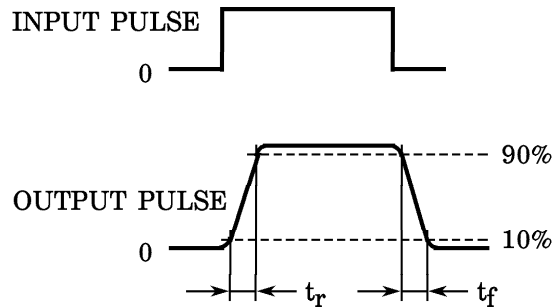
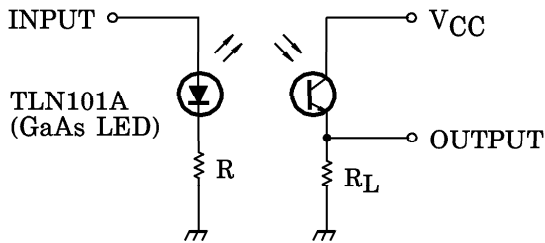
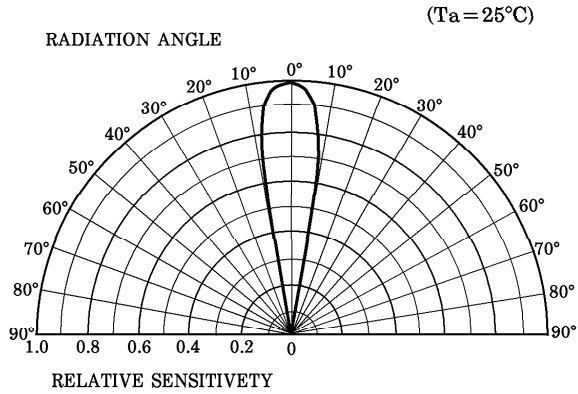


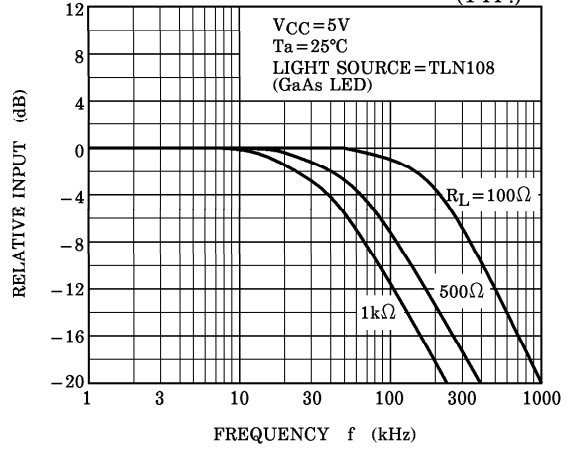
Fig.1 SWITCHING TIME TEST CIRCUIT



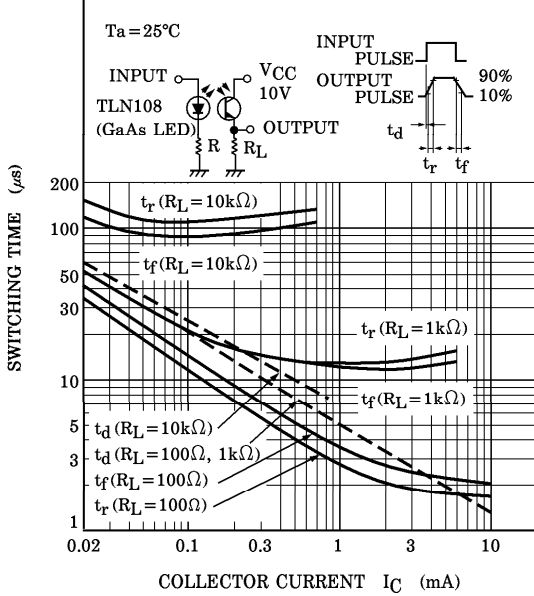
DIRECTIONAL SENSITIVITY CHARACTERISTIC (TYP.)



FREQUENCY CHARACTERISTICS (TYP.)



SWITCHING CHARACTERISTICS (TYP.)



COUPLING CHARACTERISTICS WITH TLN101A

