

TOSHIBA PHOTO TRANSISTOR SILICON NPN EPITAXIAL PLANAR

TPS606, TPS606 (LB)

TAPE, CARD READERS

PRINTER, TERMINAL

OPTO-ELECTRONIC SWITCH

- Micro-package (epoxy resin package)
 Double end type : TPS606
 DIP type : TPS606 (LB)
- Mountable at a 2.5mm pitch
- High speed response : $t_r = 2\mu s$, $t_f = 3\mu s$ (TYP.)
- Half value angle : $\theta_{\frac{1}{2}} = \pm 20^\circ$ (TYP.)
- Maximum distance when used as an opto electronic switch
 TLN104 at DC drive $\approx 5\text{mm}$ at TPS606 $I_L \approx 100\mu A$

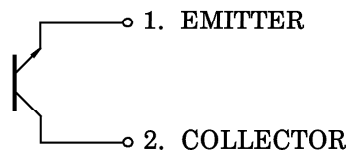
MAXIMUM RATINGS ($T_a = 25^\circ C$)

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	50	mW
Collector Power Dissipation Derating ($T_a > 25^\circ C$)	$\Delta P_C / ^\circ C$	-0.91	mW / $^\circ C$
Operating Temperature Range	T_{opr}	-25~85	$^\circ C$
Storage Temperature Range	T_{stg}	-30~100	$^\circ C$
Soldering Temperature (3s)	T_{sol}	260	$^\circ C$

RECOMMENDED OPERATING CONDITION

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT
Supply Voltage	V_{CC}	—	5	16	V

PIN CONNECTION



Unit in mm

TPS606

() : REFERENCE VALUE

JEDEC	—
EIAJ	—
TOSHIBA	0-2C1

TPS606 (LB)

() : REFERENCE VALUE

JEDEC	—
EIAJ	—
TOSHIBA	0-2C101

Weight : 0.08g (TYP.)

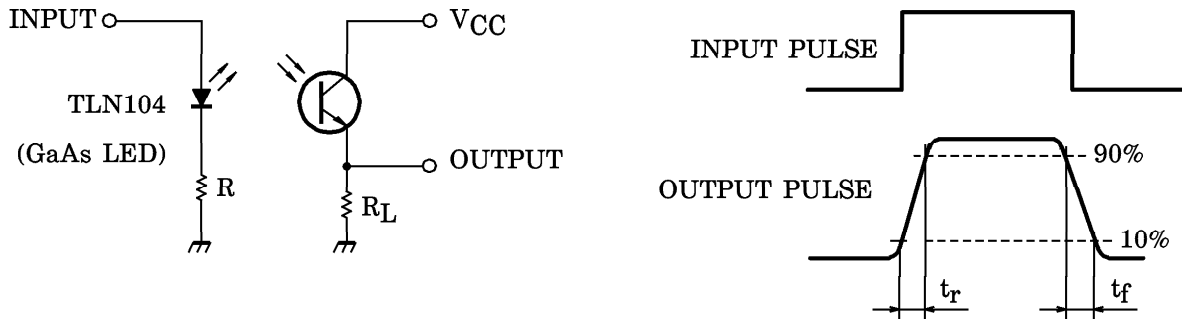
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OPTO-ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Dark Current	I_D	$V_{CE} = 10V, E = 0$	—	0.01	0.1	μA
Light Current (Note 1)	I_L	$V_{CE} = 3V, E = 0.1mW/cm^2$ (Note 2)	10	40	—	μA
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 2\mu A, E = 0.1mW/cm^2$ (Note 2)	—	0.2	0.4	V
Peak Sensitivity Wavelength	λ_P	—	—	720	—	nm
Half Vaule Angle	$\theta_{\frac{1}{2}}$	—	—	± 20	—	°
Switching Time	Rise time	$V_{CC} = 10V, I_C = 1mA$ $R_L = 100\Omega$ (Note 3)	—	2	—	μs
	Fall Time		—	3	—	

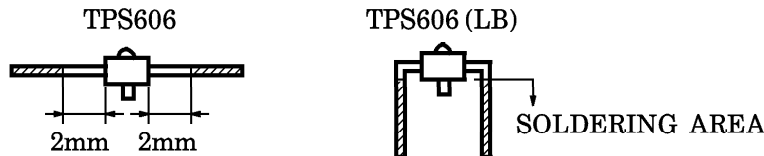
- Note 1. I_L Classification B : 10~30 μA , C : 20~60 μA , D : 40~125 μA
 2. Color temperature = 2870°K, Standard Tungsten Lamp
 3. Switching time test circuit



PRECAUTION

Please be careful of the followings.

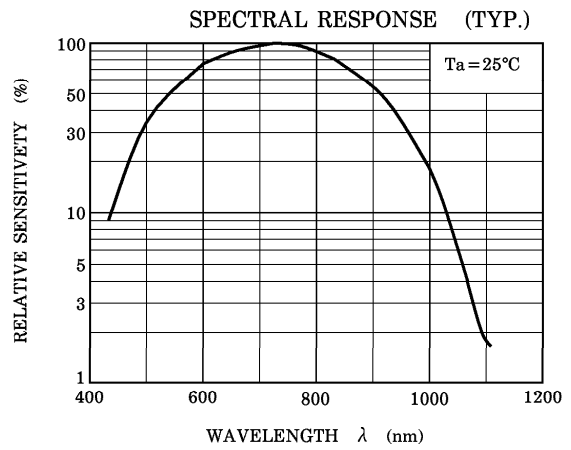
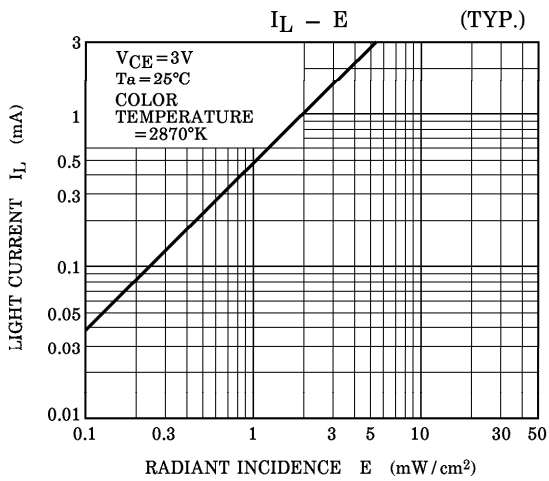
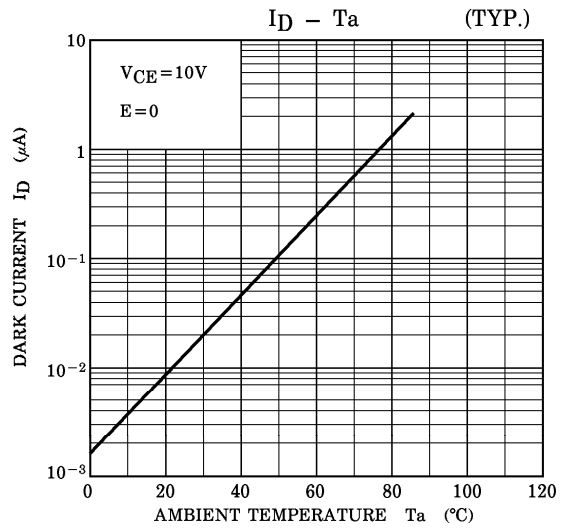
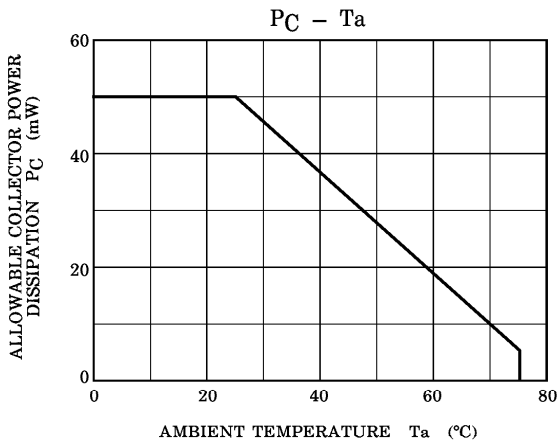
1. If the lead is formed, the lead should be formed at a distance of 0.8mm from the body of the device. Soldering shall be performed after lead forming. However, in case of TPS605 (LB), no lead forming shall be performed.
2. Soldering shall be performed within the range shown below.



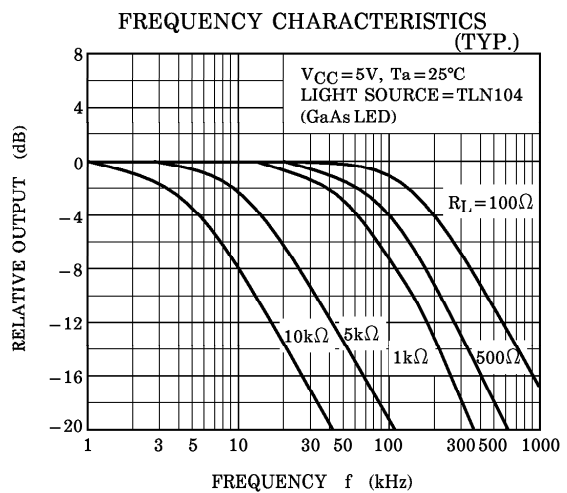
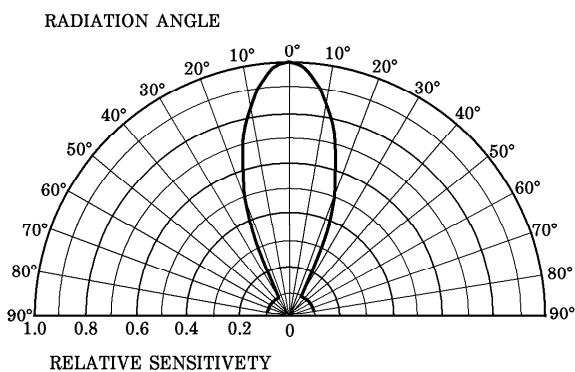
AREA 2mm AWAY FROM THE PACKAGE ENDS

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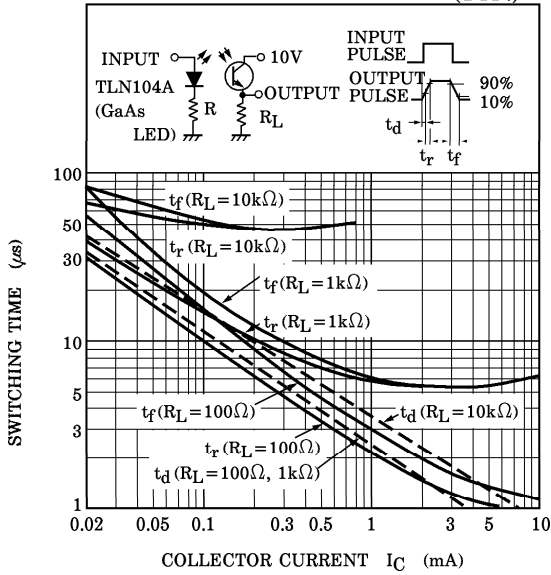
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DIRECTIONAL SENSITIVITY CHARACTERISTIC (TYP.) (Ta = 25°C)



SWITCHING CHARACTERISTICS (TYP.)



RELATIVE I_L - T_a (TYP.)

