

TOSHIBA PHOTO TRANSISTOR SILICON NPN EPITAXIAL PLANAR

TPS606, TPS606 (LB)

TAPE, CARD READERS

PRINTER, TERMINAL

OPTO-ELECTRONIC SWITCH

Unit in mm

- 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 $I_L \approx 100\mu A$

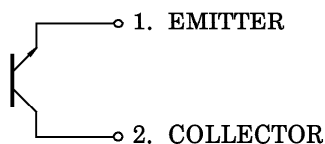
MAXIMUM RATINGS (Ta = 25°C)

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

RECOMMENDED OPERATING CONDITION

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

PIN CONNECTION



TPS606

() : REFERENCE VALUE

JEDEC	—
EIAJ	—
TOSHIBA	0-2C1

TPS606 (LB)

() : REFERENCE VALUE

JEDEC	—
EIAJ	—
TOSHIBA	0-2C101

Weight : 0.08g (TYP.)

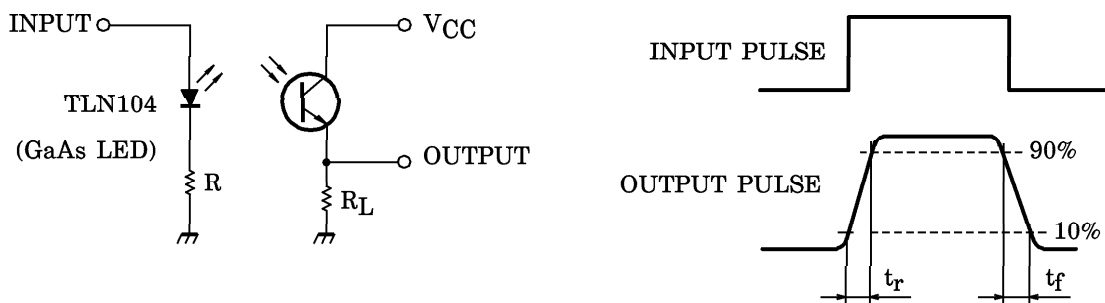
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OPTO-ELECTRICAL CHARACTERISTICS (Ta = 25°C)

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	—	$^\circ$
Switching Time	Rise time	$V_{CC}=10V, I_C=1mA$ $R_L=100\Omega$ (Note 3)	—	2	—	μs
	Fall Time		—	3	—	

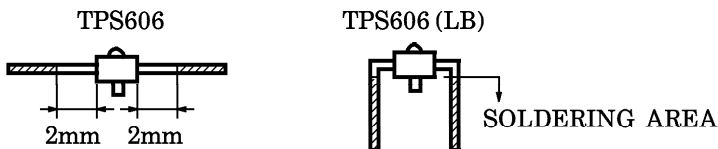
- Note 1. I_L Classification B : 10~30 μA , C : 20~60 μA , D : 40~125 μA
 2. Color temperature=2870°K, Standard Tungsten Lamp
 3. Switching time test circuit



PRECAUTION

Please be careful of the followings.

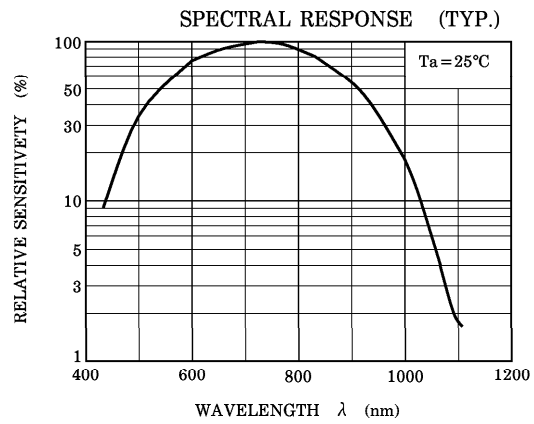
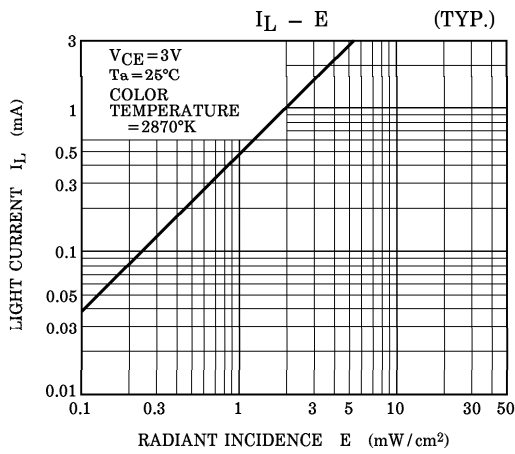
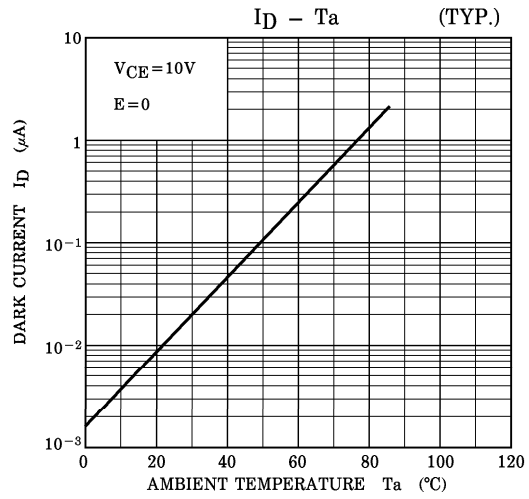
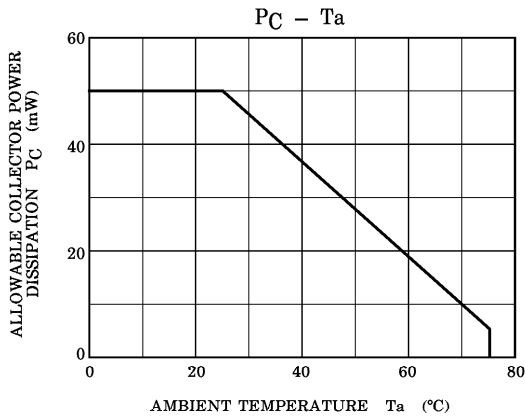
- If the lead is formed, the lead should be formed at a distance of 0.8mm from the body of the device. Soldering shall be performed after lead forming. However, in case of TPS605 (LB), no lead forming shall be performed.
- Soldering shall be performed within the range shown below.



AREA 2mm AWAY FROM THE PACKAGE ENDS

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

