TOSHIBA PHOTO TRANSISTOR SILICON NPN EPITAXIAL PLANAR

TPS606, TPS606 (LB)

TAPE, CARD READERS

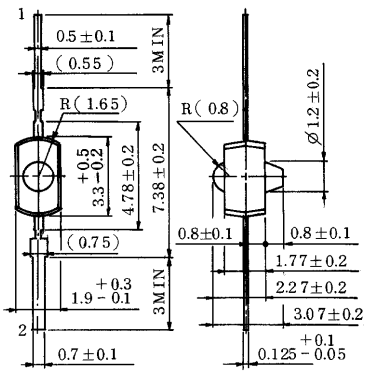
PRINTER, TERMINAL

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 : $\theta\frac{1}{2} = \pm 20°$ (TYP.)
- Maximum distance when used as an opto electronic switch
  TLN104 at DC drive ≃ 5mm at TPS606 $I_L \simeq 100\mu A$

Unit in mm

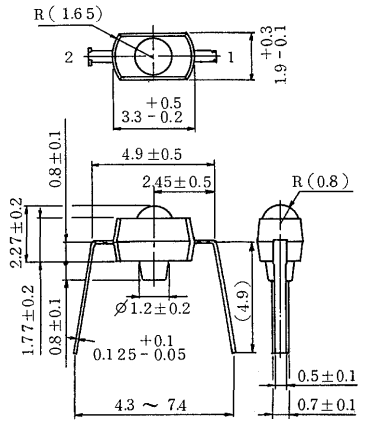
TPS606



( ) : REFERENCE VALUE

JEDEC	—
EIAJ	—
TOSHIBA	0-2C1

TPS606 (LB)



( ) : REFERENCE VALUE

JEDEC	—
EIAJ	—
TOSHIBA	0-2C101

Weight : 0.08g (TYP.)

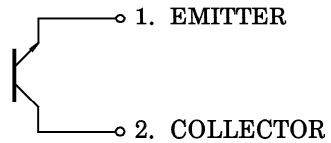
MAXIMUM RATINGS (Ta = 25°C)

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)	ΔP_C / °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

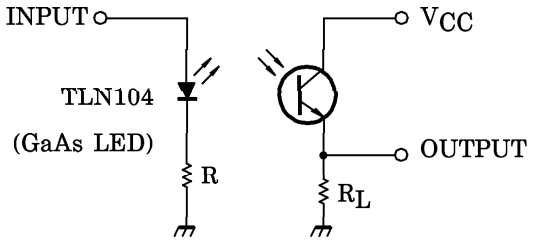


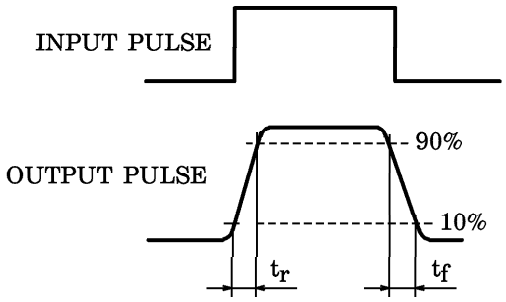
961001EAA2

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 / cm² (Note 2)	10	40	—	μA
Collector-Emitter Saturation Voltage		$V_{CE\ (sat)}$	I_C = 2μA, E = 0.1mW / cm² (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	t_r	V_{CC} = 10V, I_C = 1mA	—	2	—	μs
	Fall Time	t_f	R_L = 100Ω (Note 3)	—	3	—	

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

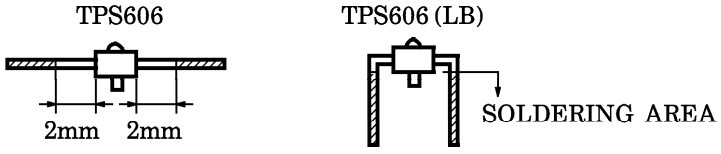




PRECAUTION

Please be careful of the followings.

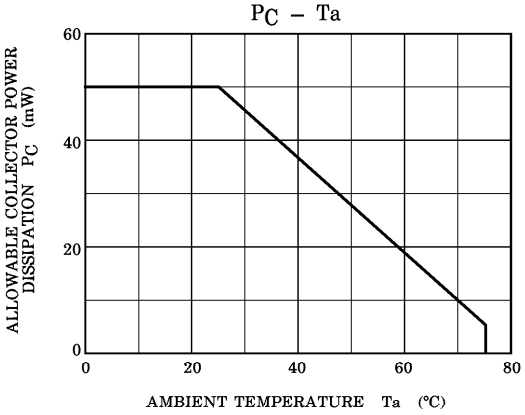
1. If the lead is formed, the lead should be formed at a distance of 0.8mm from the body of the device. Soldering shall be performed after lead forming. However, in case of TPS605 (LB), no lead forming shall be performed.
2. Soldering shall be performed within the range shown below.



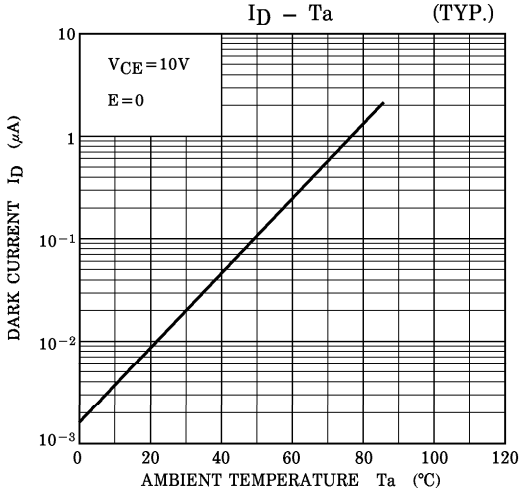
AREA 2mm AWAY FROM
THE PACKAGE ENDS

961001EAA2'

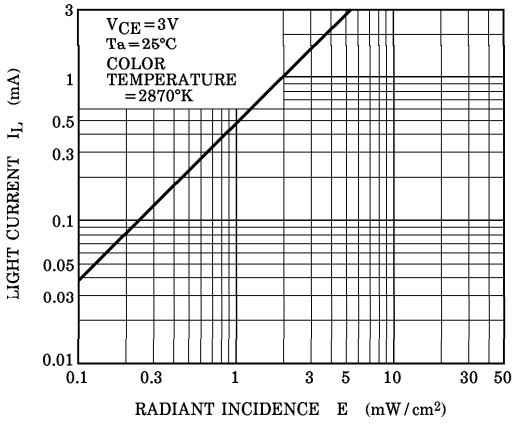
P_C – Ta



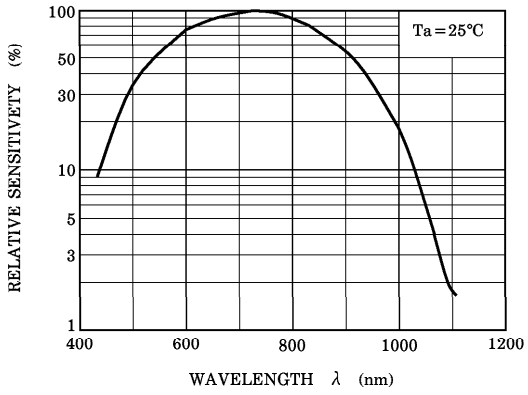
I_D – Ta (TYP.)



I_L – E (TYP.)

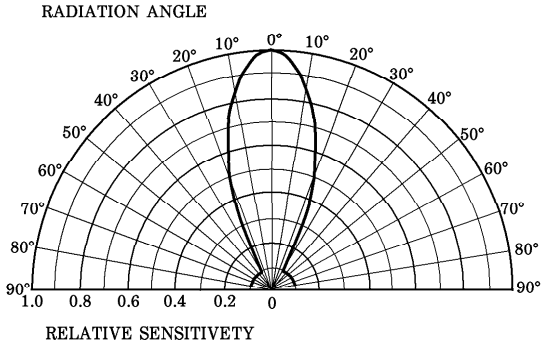


SPECTRAL RESPONSE (TYP.)

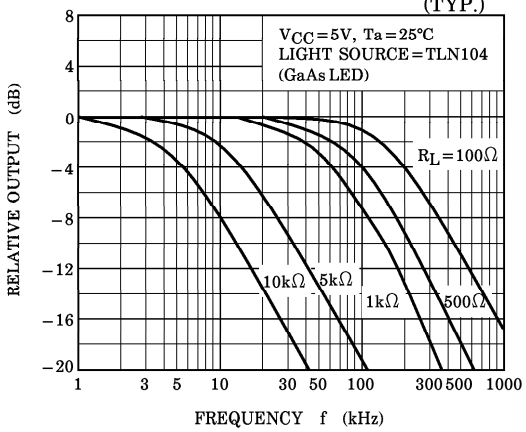


DIRECTIONAL SENSITIVITY CHARACTERISTIC (TYP.)

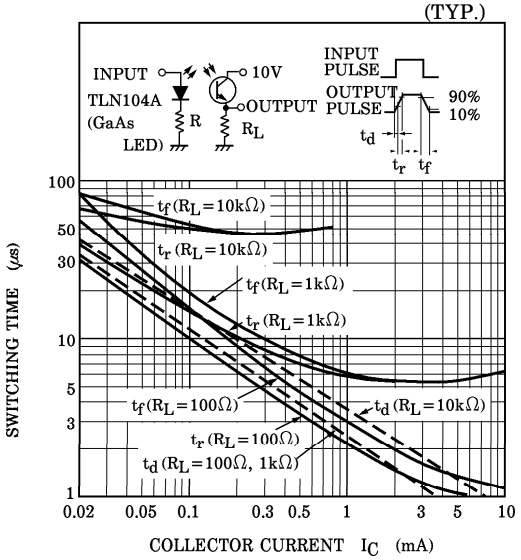
(Ta=25°C)



FREQUENCY CHARACTERISTICS (TYP.)



SWITCHING CHARACTERISTICS (TYP.)



RELATIVE I_L – Ta (TYP.)