

TOSHIBA PHOTO TRANSISTOR SILICON NPN EPITAXIAL PLANAR

TPS621, TPS622

OPTO-ELECTRONIC SWITCH

FLOPPY DISK DRIVE

OPTICAL MOUSE

OPTICAL TOUCH SWITCH

- Small side view epoxy resin package
- Fast response speed : $t_r, t_f = 6\mu s$ (TYP.)
- Half value angle : $\theta_{\frac{1}{2}} = \pm 15^\circ$ (TYP.)
- Visible light cut type (black package) : TPS622
- Optimum in combination with infrared LED TLN117 which has identical external dimensions.

MAXIMUM RATINGS (Ta = 25°C)

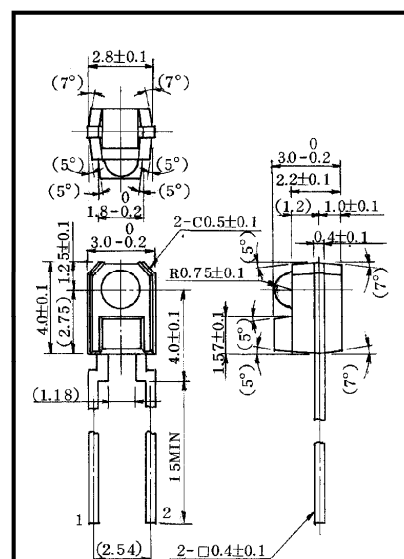
CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Emitter Voltage	V_{CEO}	30	V
Emitter-Collector Voltage	V_{ECO}	5	V
Collector Current	I_C	50	mA
Collector Power Dissipation	P_C	75	mW
Collector Power Dissipation Derating ($T_a > 25^{\circ}\text{C}$)	$\Delta P_C / ^{\circ}\text{C}$	-1	mW / $^{\circ}\text{C}$
Operating Temperature Range	T_{opr}	-25~85	$^{\circ}\text{C}$
Storage Temperature Range	T_{stg}	-40~100	$^{\circ}\text{C}$
Soldering Temperature (5s)	T_{sol}	260 (Note 1)	$^{\circ}\text{C}$

Note 1. Soldering portion of lead : above 2mm from the body of the device.

OPTO-ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION		MIN.	TYP.	MAX.	UNIT
Dark Current		I _D (I _{CEO})	V _{CE} =24V, E=0		—	0.005	0.1	μA
Light Current		I _L	E=0.1mW / cm ² , V _{CE} =3V (Note 2, 3)	TPS621	40	100	—	μA
				TPS622	27	70	—	
Collector-Emitter Saturation Voltage		V _{CE} (sat)	E=0.1mW / cm ² , I _C =(Note 4)		—	0.15	0.4	V
Peak Sensitivity Wavelength		λ _P	—	TPS621	—	820	—	nm
				TPS622	—	870	—	
Half Value Angle		θ ½	—		—	± 15	—	°
Switching Time	Rise Time	t _r	V _{CC} =5V, I _C =2mA, R _L =100Ω		—	6	—	μs
	Fall Time	t _f			—	6	—	

UNIT IN : mm



() : REFERENCE VALUE

JEDEC	—
EIAJ	—
TOSHIBA	

Weight : 0.1g (TYP.)

961001EAA2

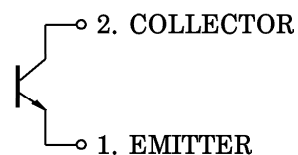
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- Note 2. Color temperature = 2870°K Standard Tungsten Lamp
3. I_L Classification

RANK	I_L (μA)	
	TPS621	TPS622
(A)	40~120	27~80
(B)	80~240	55~165
—	40MIN.	27MIN.

4. TPS621 : 15 μA , TPS622 : 10 μA

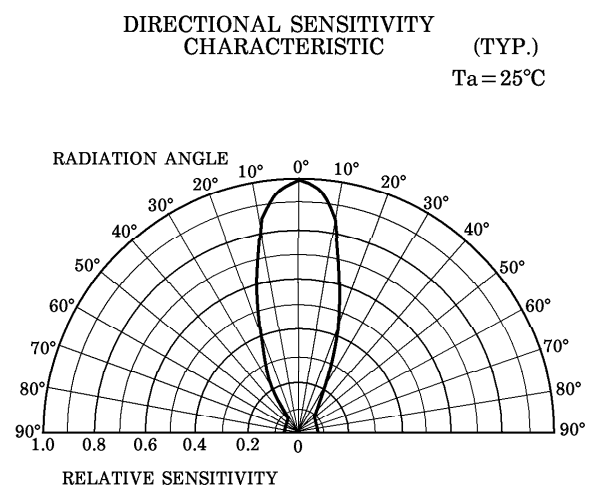
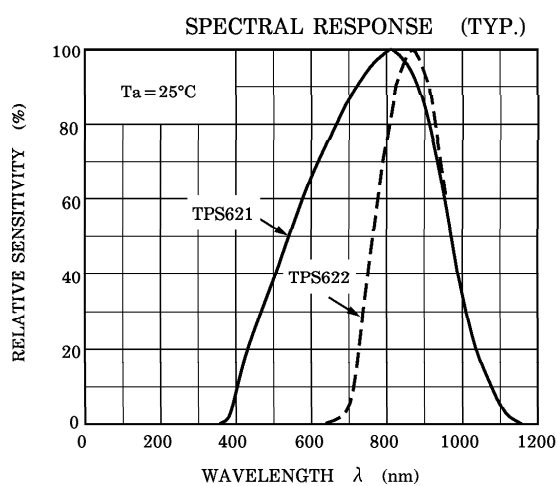
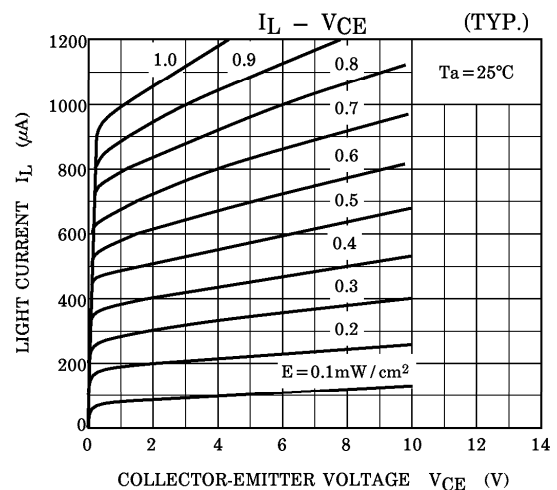
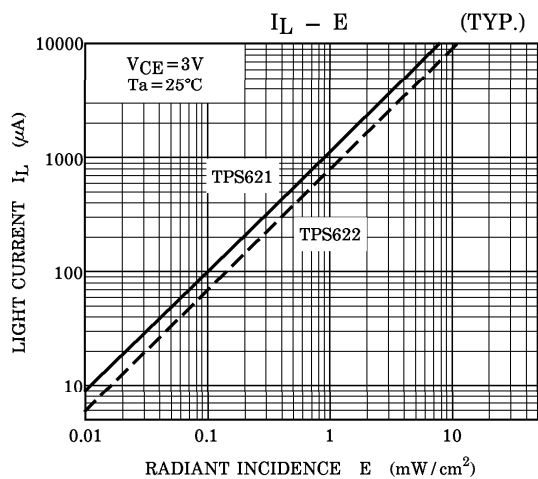
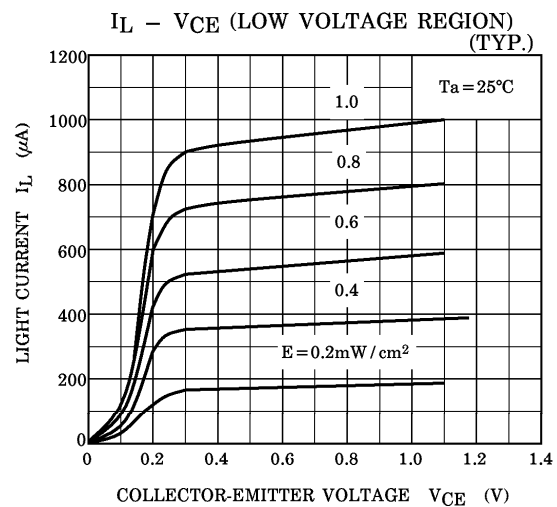
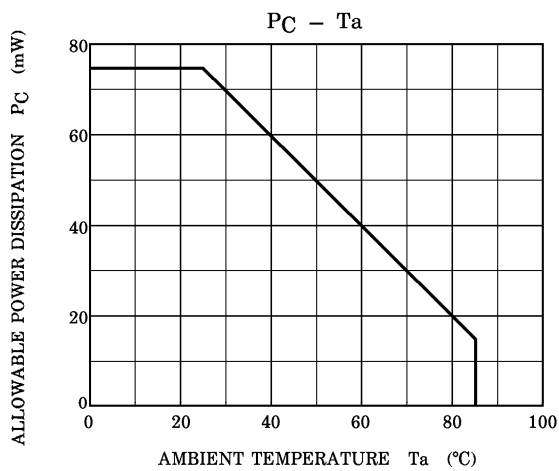
PIN CONNECTION



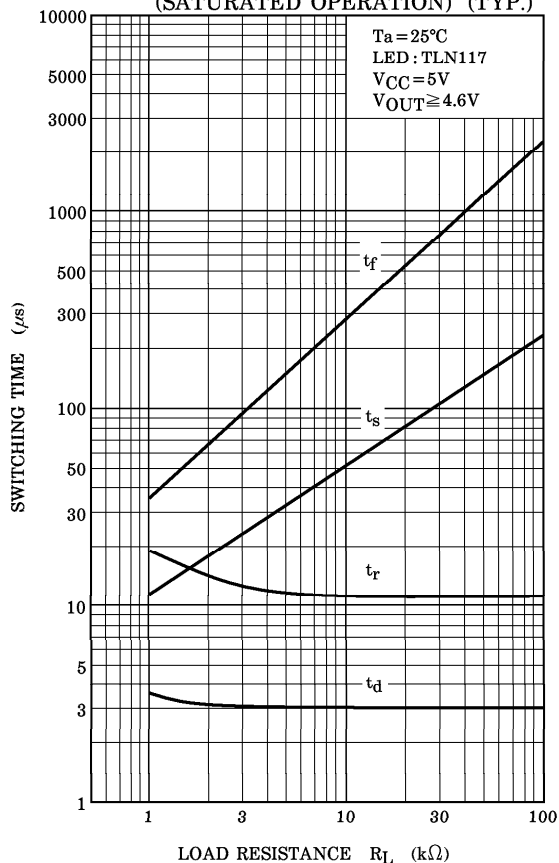
PRECAUTION

Please be careful of the followings.

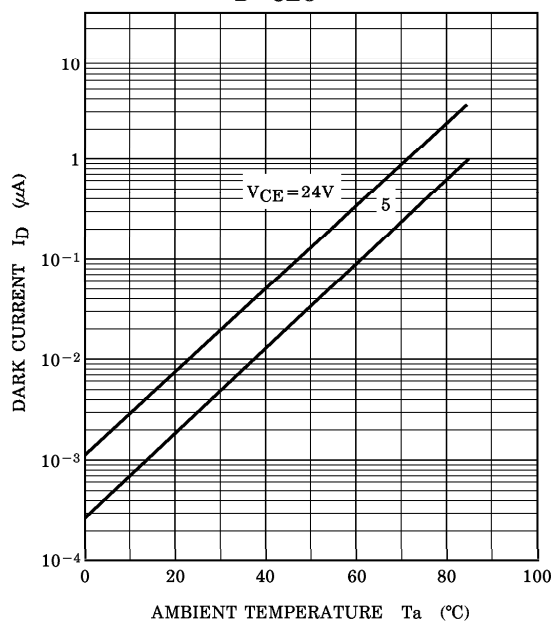
1. When the lead is formed, the lead shall be formed at a distance of 2mm from the body without leaving forming stress to the body of the device.
Soldering shall be performed after lead forming.



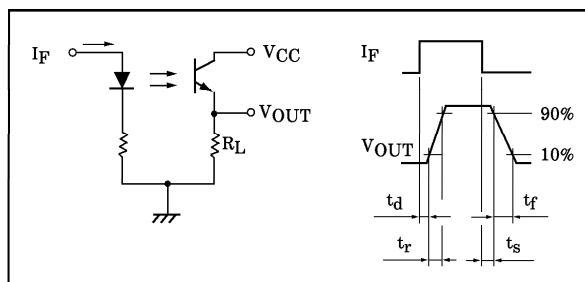
**SWITCHING CHARACTERISTICS
(SATURATED OPERATION) (TYP.)**



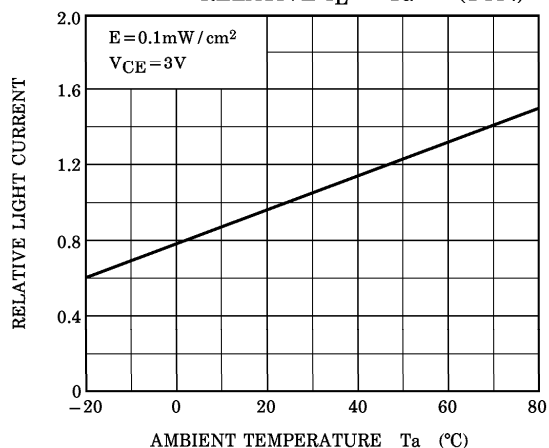
$I_D(I_{CEO}) - T_a$ (TYP.)



SWITCHING TIME TEST CIRCUIT



RELATIVE $I_L - T_a$ (TYP.)



**COUPLING CHARACTERISTICS
WITH TLN117**

