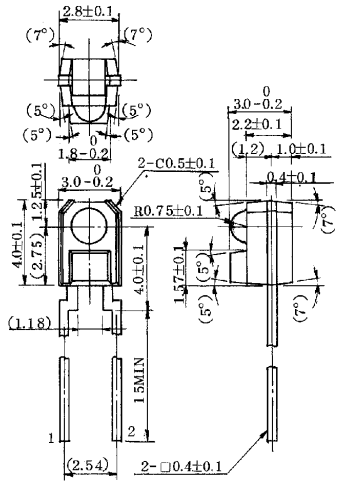
TOSHIBA PHOTO DARLINGTON TRANSISTOR SILICON NPN EPITAXIAL PLANAR

TPS625, TPS626

OPTO-ELECTRONIC SWITCH
HOME ELECTRIC EQUIPMENT
OA EQUIPMENT

- Small side view epoxy resin package
- High sensitivity : TPS625 ··· I_L = 0.6mA (MIN.)
  TPS626 ··· I_L = 0.4mA (MIN.)
- Half value angle : $\theta\frac{1}{2}$ = ±15° (TYP.)
- Visible light cut type (black package) : TPS626
- Optimum in combination with infrared LED TLN117 which has identical external dimensions.

Unit in mm



( ) : REFERENCE VALUE

JEDEC	—
EIAJ	—
TOSHIBA	

Weight : 0.1g (TYP.)

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

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

OPTO-ELECTRICAL CARACTERISTICS (Ta = 25°)

CHARACTERISTIC		SYMBOL	TEST CONDITION		MIN.	TYP.	MAX.	UNIT
Dark Current		I_D (I_{CEO})	V_{CE} = 16V, E = 0		—	0.03	0.25	μA
Light Current		I_L	E = 0.1mW / cm²	TPS625	0.6	2	—	mA
			V_{CE} = 3V (Note 2, 3)	TPS626	0.4	1.4	—	
Collector-Emitter Saturation Voltage		$V_{CE\ (sat)}$	E = 0.1mW / cm² I_L = (Note 4)		—	0.9	1.2	V
Peak Sensitivity Wavelength		λ_p		TPS625	—	820	—	nm
				TPS626	—	870	—	
Half Value Angle		$\theta\frac{1}{2}$			—	±15	—	°
Switching Time	Rise Time	t_r	V_{CC} = 5V, I_C = 10mA R_L = 100Ω		—	200	—	μs
	Fall Time	t_f			—	150	—	

Note 2. Color temperature = 2870°K, Standard Tungsten Lamp

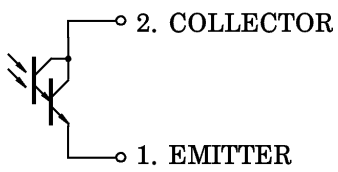
961001EAA2

Note 3. I_L Classification

RANK	I_L (mA)	
	TPS625	TPS626
(A)	0.6~3.6	0.4~2.4
(B)	2.5~15	1.7~10.2
(C)	5MIN.	3MIN.
—	0.6MIN.	0.4MIN.

Note 4. TPS625 : 0.3mA, TPS626 : 0.2mA

PIN CONNECTION

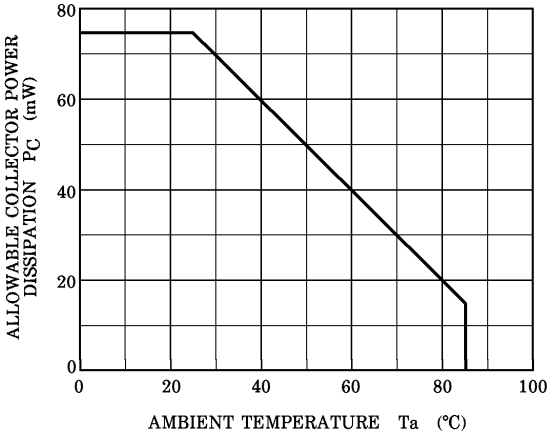


PRECAUTION

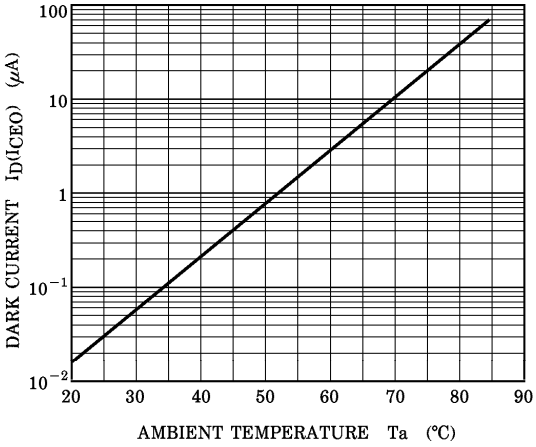
Please be careful of the followings.

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.

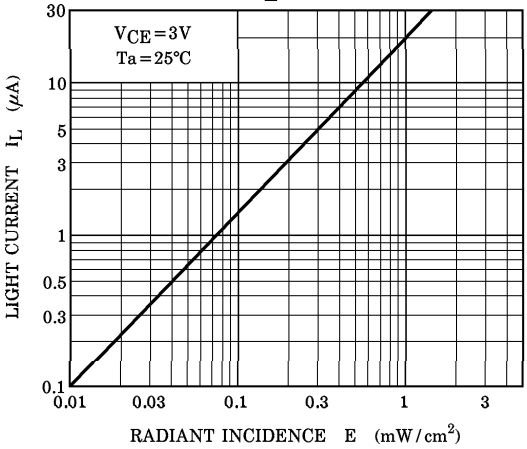
P_C – Ta



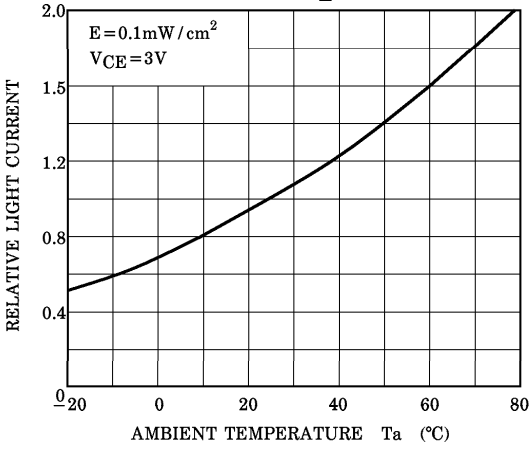
I_D (I_{CEO}) – Ta (TYP.)



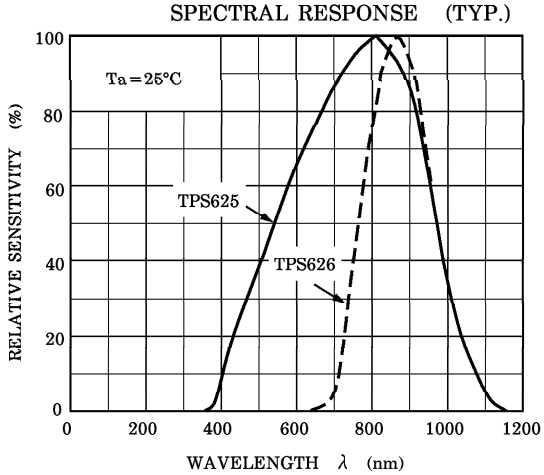
I_L – E (TYP.)



RELATIVE I_L – Ta (TYP.)

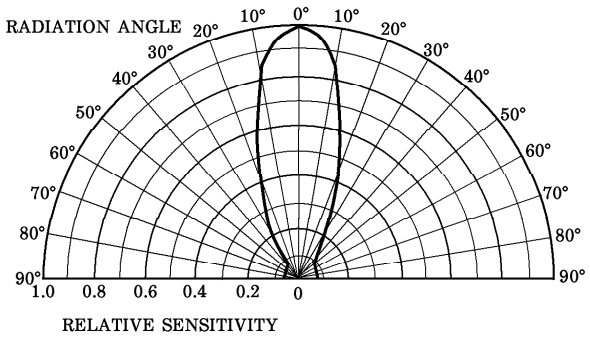


SPECTRAL RESPONSE (TYP.)



DIRECTIONAL SENSITIVITY CHARACTERISTIC (TYP.)

Ta=25°C



SWITCHING TIME TEST CIRCUIT