

TOSHIBA PHOTOINTERRUPTER INFRARED + PHOTODARLINGTONTRANSISTOR

TLP507A

OPTO-ELECTRONIC SWITCH
AUTOMATIC CONTROL UNIT
POSITION AND ROTATIONAL SPEED SENSOR

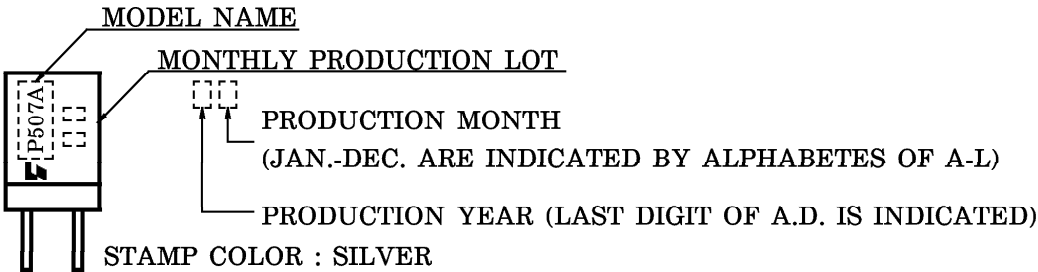
TLP507A is a high current transfer ratio (IC / IF) type photo-interrupter.

- Gap : 3mm
- Resolution : Slit width 1mm
- High current transfer ratio : IC / IF=30% (Min.)
- Dark current : ID=0.25μA (Max.)
- Material of the package : Polycarbonate

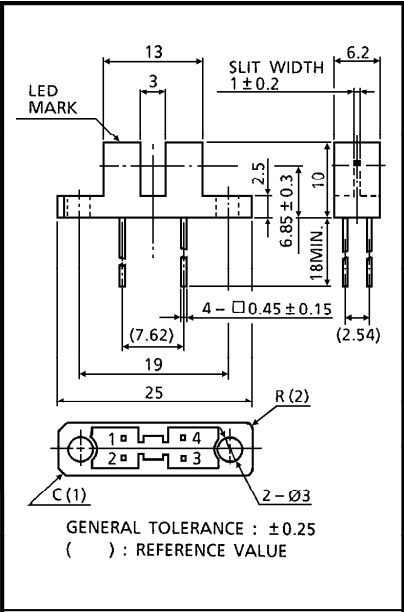
MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	RATING	UNIT
LED	Forward Current	IF	50	mA
	Forward Current Derating (Ta>25°C)	ΔIF/°C	-0.33	mA/°C
	Reverse Voltage	VR	5	V
DETECTOR	Collector-Emitter Voltage	VCEO	30	V
	Emitter-Collector Voltage	VECO	5	V
	Collector Power Dissipation	PC	75	mW
	Collector Power Dissipation Derating (Ta>25°C)	ΔPC/°C	-1	mW/°C
	Collector Current	IC	50	mA
Operating Temperature Range		Topr	-25~85	°C
Storage Temperature Range		Tstg	-30~100	°C

PRODUCT INDICATION



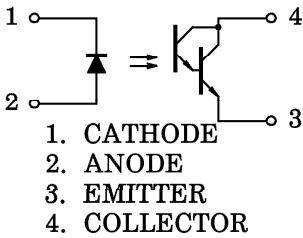
Unit in mm



JEDEC	—
EIAJ	—
TOSHIBA	11-13B1

Weight : 0.83g (Typ.)

PIN CONNECTION



961001EBC2

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OPTO-ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
LED	Forward Voltage	V _F	I _F = 10mA	1.00	1.15	1.30	V
	Reverse Current	I _R	V _R = 5V	—	—	10	μA
	Peak Emission Wavelength	λ _P	I _F = 10mA	—	940	—	nm
DETECTOR	Dark Current	I _D (I _{CEO})	V _{CE} = 16V, I _F = 0	—	—	0.25	μA
	Peak Sensitivity Wavelength	λ _P	—	—	800	—	nm
COUPLED	Current Transfer Ratio	I _C / I _F	V _{CE} = 2V, I _F = 10mA	30	—	440	%
	Rise Time	t _r	V _{CC} = 5V, I _C = 10mA	—	200	—	μA
	Fall Time	t _f	R _L = 100Ω	—	200	—	

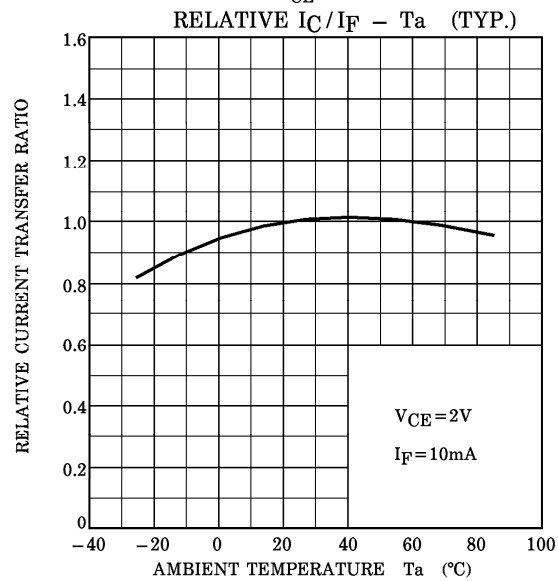
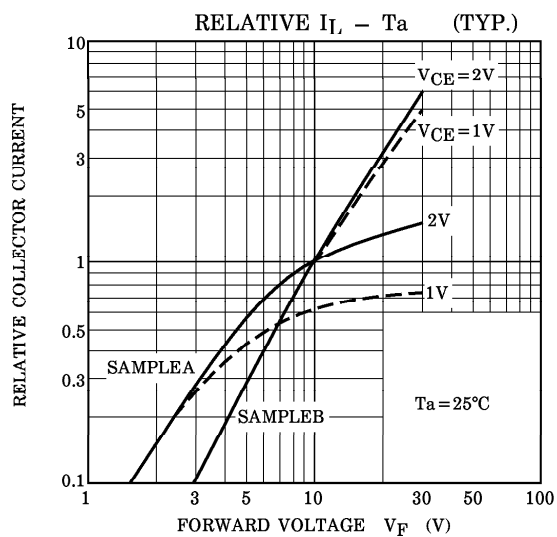
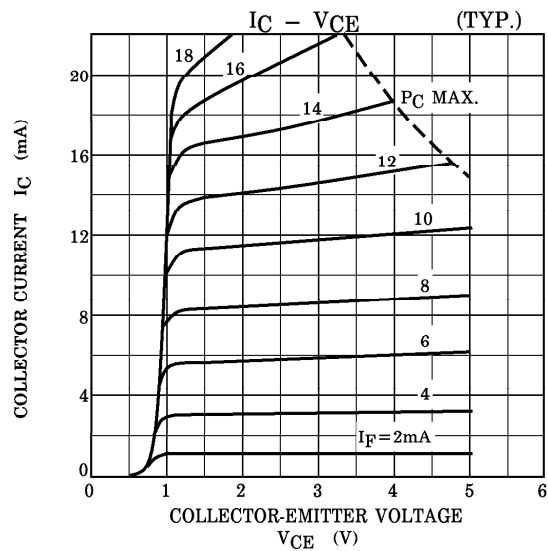
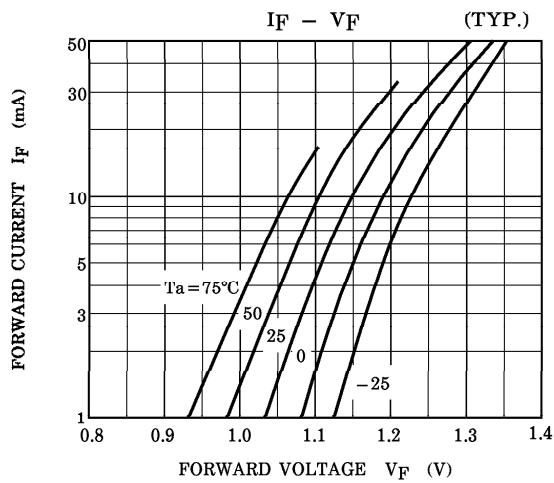
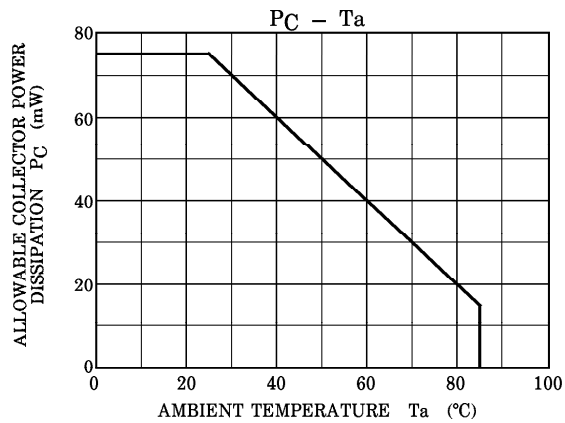
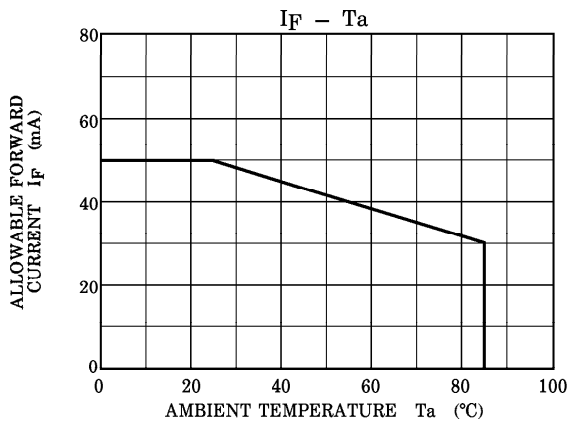
PRECAUTION

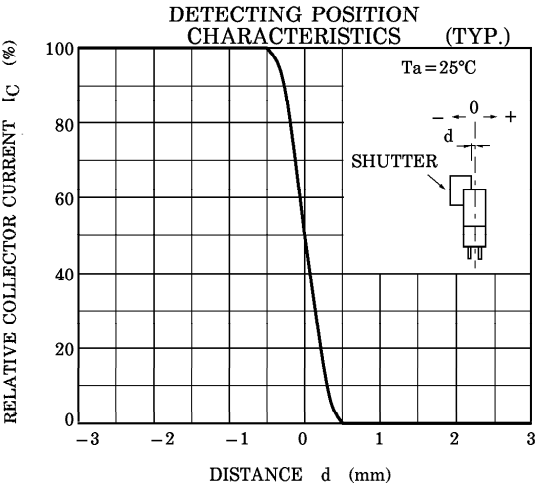
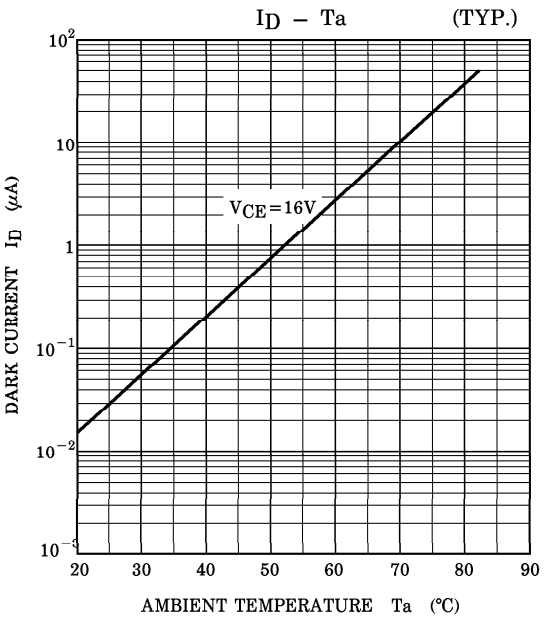
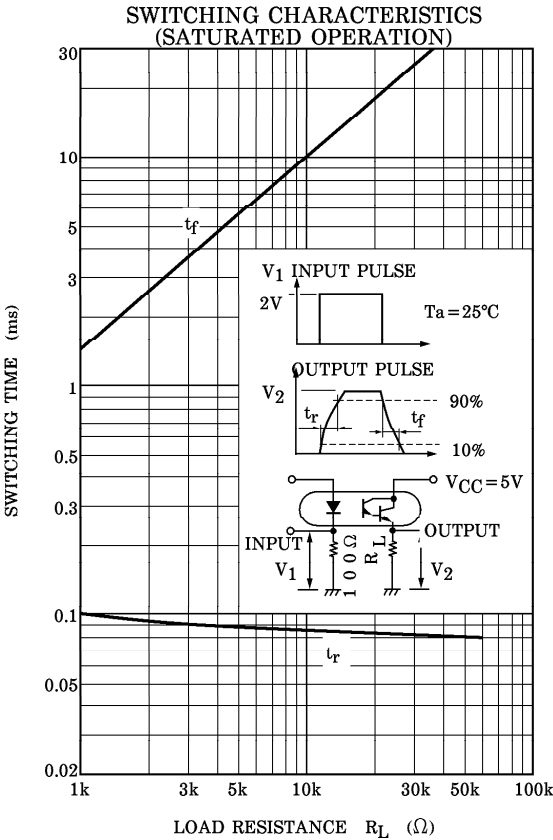
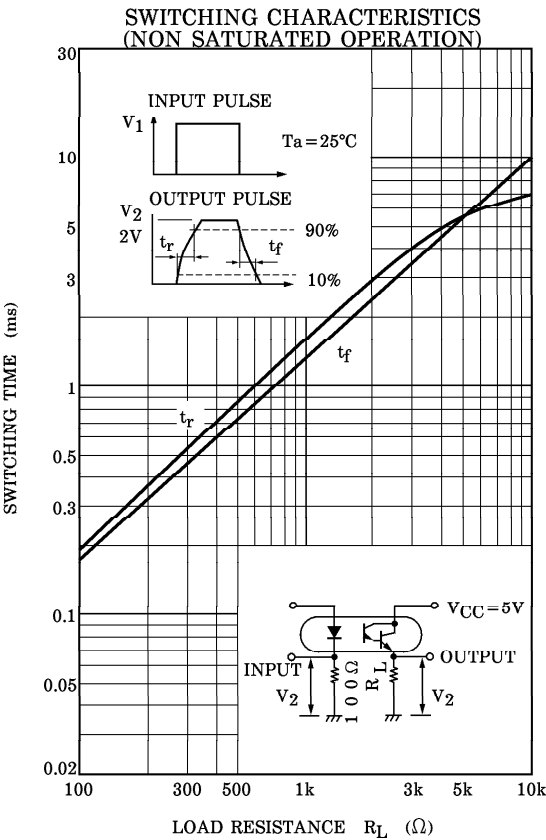
Please be careful of the followings.

- Soldering temperature : 260°C MAX. Soldering time : 5s MAX.
(Soldering portion of lead : above 1.5mm from the body of the device)
- If chemical are used for cleaning, the soldered surface only shall be cleaned with chemicals avoiding the whole cleaning of the package.
- TLP507A shall be mounted on an unwarped surface.
- Screw shall be tightenend to clamping torque of 0.59N·m.
- The container is made of polycarbonate. Polycarbonate is usually stable with acid, alcohol, and aliphatic hydrocarbons however, with pectochemicals (such as benzene, toluene, and acetone), alkali, aromatic hydrocarbons, or chloric hydrocarbons, polycarbonate becomes cracked, swollen, or melted. Please take care when chosing a packaging material by referencing the table below.

<Chemicals to avoid with polycarbonate>

	PHENOMENON	CHEMICALS
A	Little deterioration but staining	nitric acid (low concentration), hydrogen peroxide, chlorine
B	Cracked, crazed, or swollen	- acetic acid (70% or more) - gasoline - methyl ethyl ketone, ehtyl acetate, butyl acetate - ethyl methacrylate, ethyl ether, MEK - acetone, m-amino alcohol, carbon tetrachloride - carbon disulfide, trichloroethylene, cresol - thinners, oil of turpentine - triethanolamine, TCP, TBP
C	Melted { } : Used as solvent.	- concentrated sulfuric acid - benzene - styrene, acrylonitrile, vinyl acetate - ethylenediamine, diethylenediamine {chloroform, methyl chloride, tetrachloromethane, dioxane, } 1, 2-dichloroethane
D	Decomposed	- ammonia water - other alkali



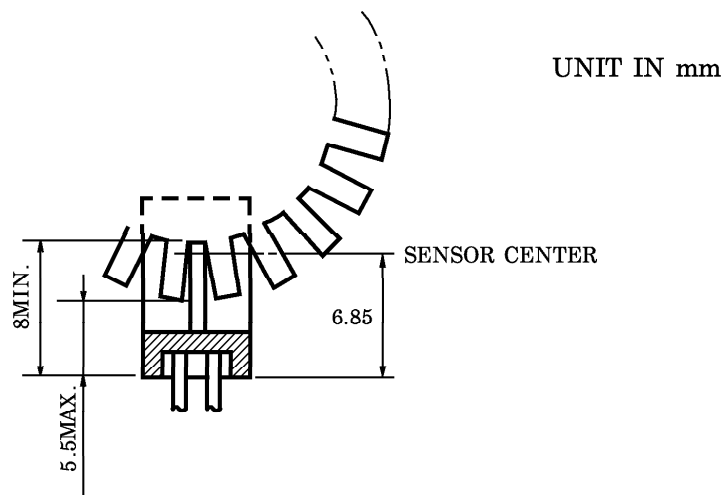
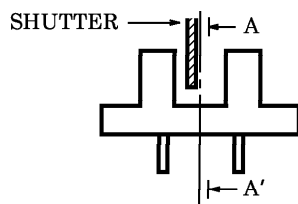


POSITIONING OF SHUTTER AND DEVICE

To operate correctly, make sure that the shutter and the device are positioned as shown in the figure below.

The shift pitch of the shutter must be set wider than the slit width of the device.

Determine the width taking the switching time into consideration.



A-A' CROSS SECTION