

(TLP852)

EDGE SENSOR

POSITION AND ROTATION

TIMING DETECTION OF PRINTER, FACSIMILE, ETC.

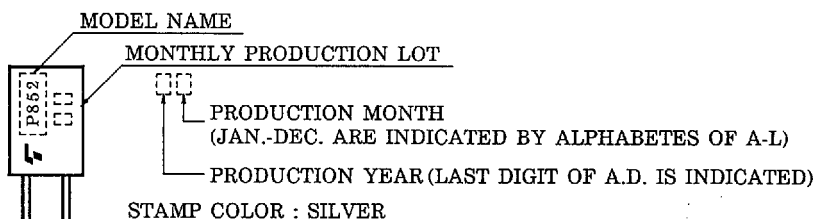
TLP852 is a high current transfer ratio (I_C/I_F) type photo interrupter.

- Easily mountable on a printed wiring board.
- High current transfer ratio : $I_C/I_F=20\%$ (MIN.)
- The detector side is of visible light cut type.
- Material of the package : Polycarbonate

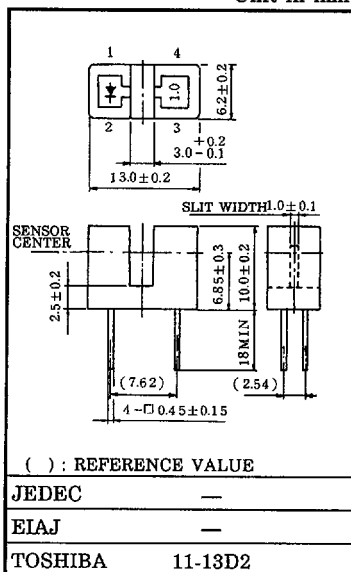
MAXIMUM RATINGS ($T_a=25^\circ\text{C}$)

CHARACTERISTIC		SYMBOL	RATING	UNIT
LED	Forward Current	I_F	50	mA
	Forward Current Derating ($T_a>25^\circ\text{C}$)	$\Delta I_F/^\circ\text{C}$	-0.33	mA/ $^\circ\text{C}$
	Reverse Voltage	V_R	5	V
DETECTOR	Collector-Emitter Voltage	V_{CEO}	30	V
	Emitter-Collector Voltage	V_{ECO}	5	V
	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/ $^\circ\text{C}$
	Collector Current	I_C	50	mA
	Operating Temperature Range	T_{opr}	-25~85	$^\circ\text{C}$
Storage Temperature Range		T_{stg}	-40~100	$^\circ\text{C}$

PRODUCT INDICATION

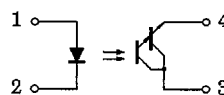


Unit in mm



Weight : 0.78g (TYP.)

PIN CONNECTION



1. ANODE
2. CATHODE
3. COLLECTOR
4. EMITTER

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OPTO-ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
LED	Forward Voltage	V_F	$I_F = 10\text{mA}$	1.00	1.15	1.30	V
	Reverse Current	I_R	$V_R = 5\text{V}$	—	—	10	μA
	Peak Emission Wavelength	λ_P	$I_F = 20\text{mA}$	—	940	—	nm
DETECTOR	Dark Current	$I_D (I_{CEO})$	$V_{CE} = 16\text{V}, I_F = 0$	—	—	0.25	μA
	Peak Sensitivity Wavelength	λ_P	—	—	870	—	nm
COUPLED	Current Transfer Ratio	I_C / I_F	$V_{CE} = 2\text{V}, I_F = 10\text{mA}$	30	200	—	%
	Collector-Emitter Saturation Voltage	$V_{CE}(\text{sat})$	$I_F = 10\text{mA}, I_C = 1.5\text{mA}$	—	0.85	1.2	V
	Rise Time	t_r	$V_{CC} = 5\text{V}, I_C = 10\text{mA}$	—	80	—	μs
	Fall Time	t_f	$R_L = 100\Omega$	—	70	—	

PRECAUTION

Please be careful of the followings.

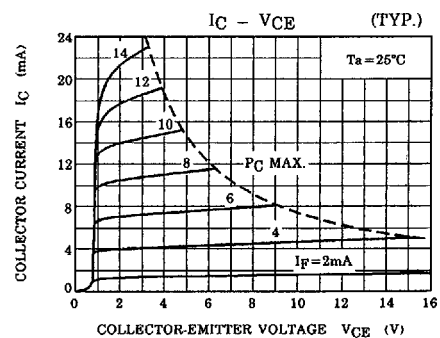
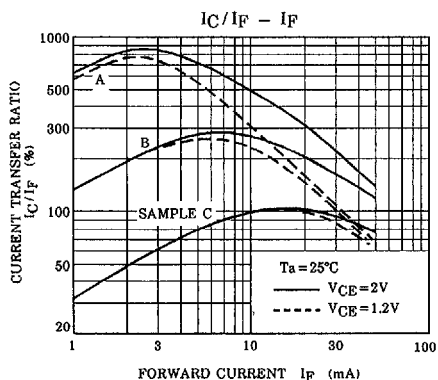
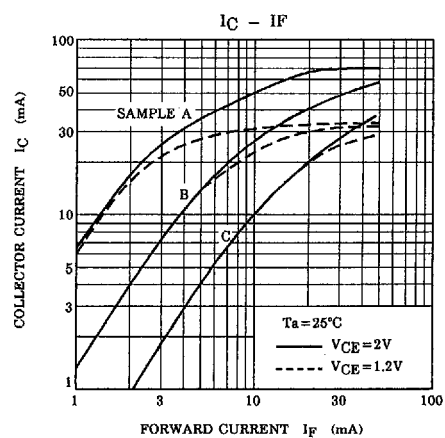
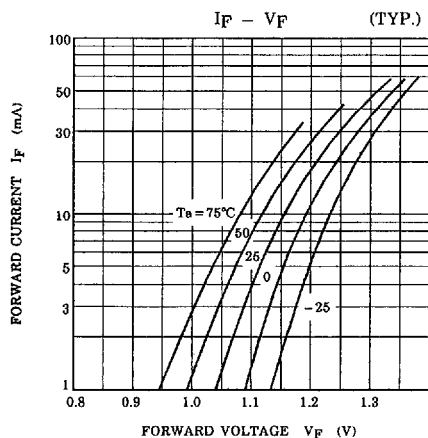
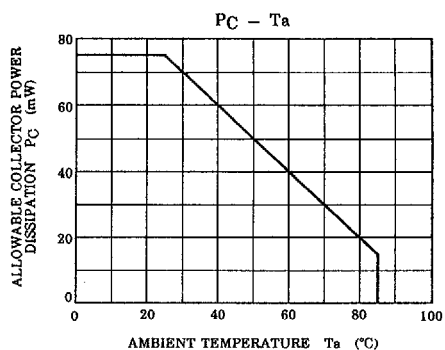
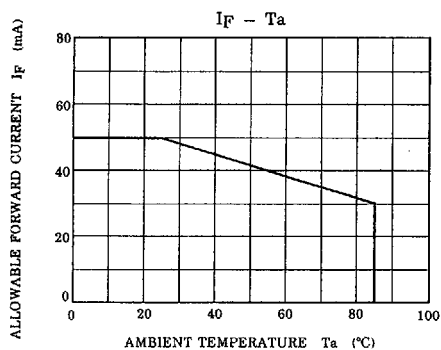
- Soldering temperature : 260°C MAX. Soldering time : 5s MAX.
(Soldering portion of lead : above 1.5mm from the body of the device)
- If chemical are used for cleaning, the soldered surface only shall be cleaned with chemicals avoiding the whole cleaning of the package.
- The container is made of polycarbonate.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

<Chemicals to avoid with polycarbonate>

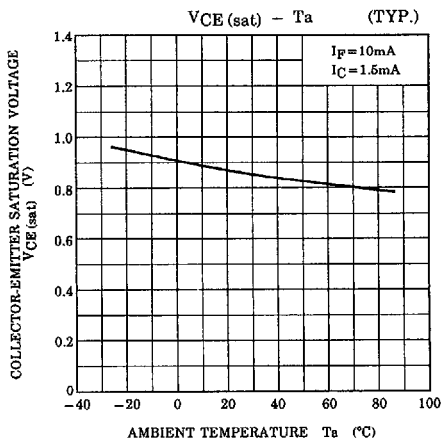
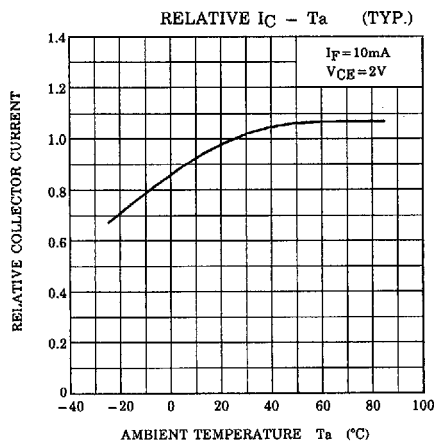
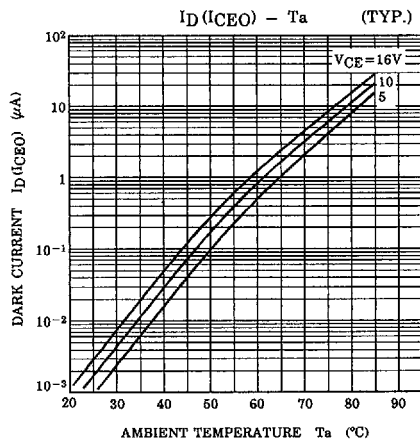
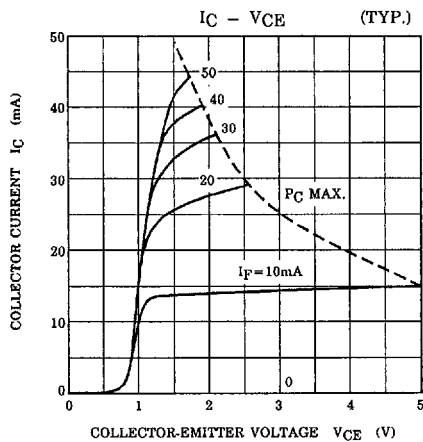
	PHENOMENON	CHEMICALS
A	Little deterioration but staining	• nitric acid (low concentration), hydrogen peroxide, chlorine
B	Cracked, crazed, or swollen	• acetic acid (70% or more) • gasoline • methyl ethyl ketone, ethyl acetate, butyl acetate • ethyl methacrylate, ethyl ether, MEK • acetone, m-amino alcohol, 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

- TLP852 shall be mounted on an unwarped surface.

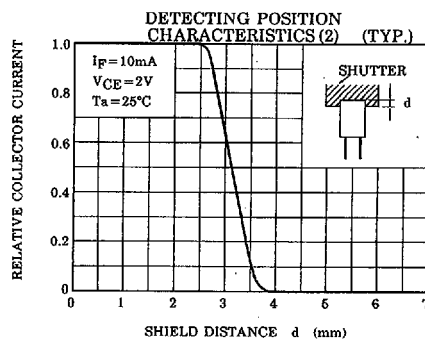
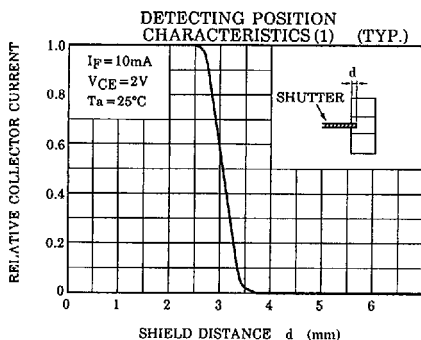
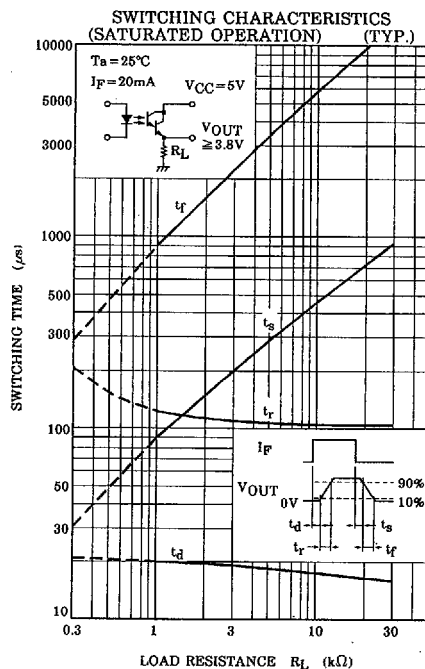
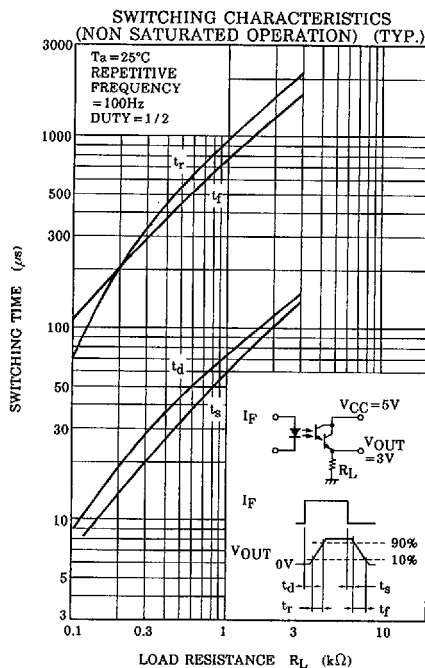
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DESIGN SLIT FOR ROTATING LIGHT BLOCKING BOARD.

Design the pitch between slits taking the following into consideration :

release time, light block time, and switching time of photo interrupter when the disk is rotating.

