

(TLP852)

EDGE SENSOR

POSITION AND ROTATION

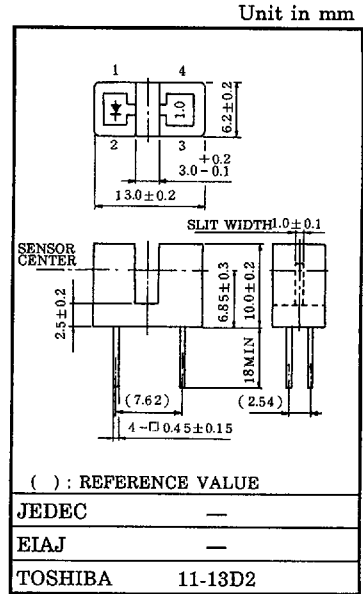
TIMING DETECTION OF PRINTER, FACSIMILE, ETC.

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

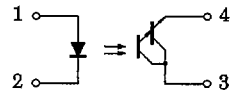
MAXIMUM RATINGS ( $T_a=25^\circ\text{C}$ )

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	$^\circ\text{C}$



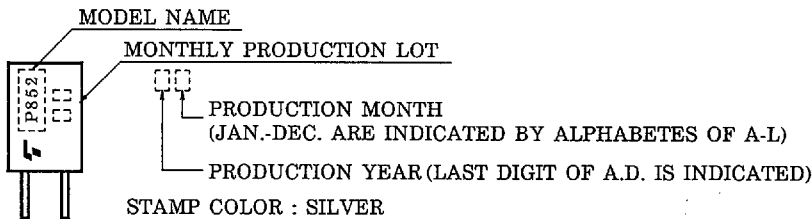
Weight : 0.78g (TYP.)

PIN CONNECTION



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

PRODUCT INDICATION



(TLP852)

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	$\mu\text{A}$
	Peak Emission Wavelength	$\lambda_P$	$I_F=20\text{mA}$	—	940	—	nm
DETECTOR	Dark Current	$I_D (I_{CEO})$	$V_{CE}=16\text{V}, I_F=0$	—	—	0.25	$\mu\text{A}$
	Peak Sensitivity Wavelength	$\lambda_P$	—	—	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	tr	$V_{CC}=5\text{V}, I_C=10\text{mA}$	—	80	—	$\mu\text{s}$
	Fall Time	tf	$R_L=100\Omega$	—	70	—	

## PRECAUTION

Please be careful of the followings.

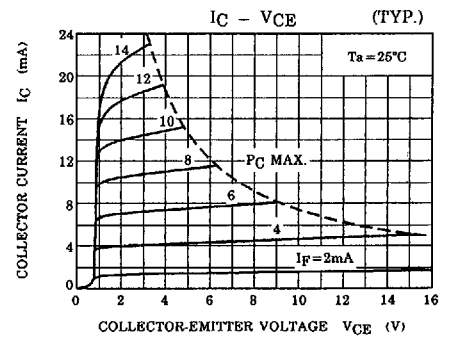
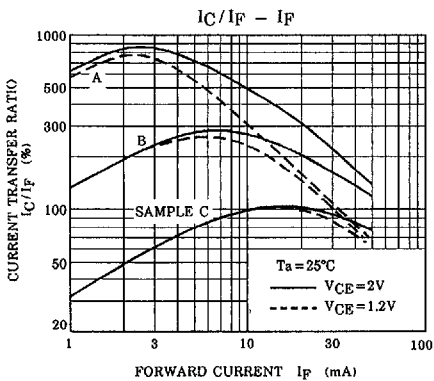
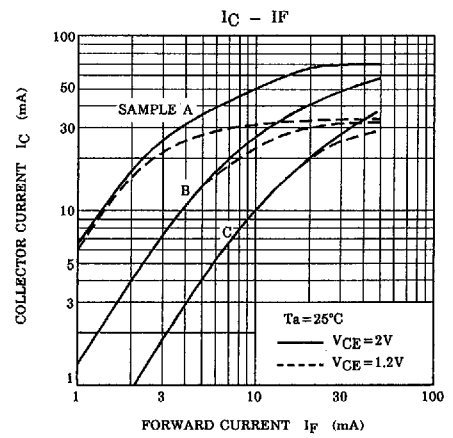
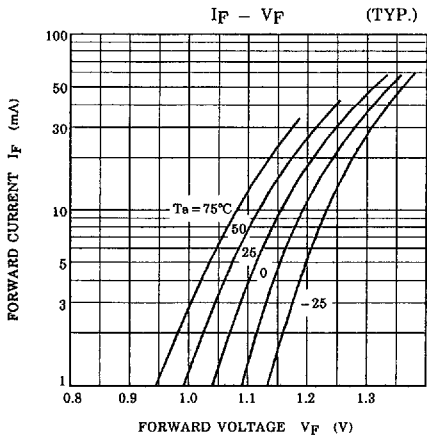
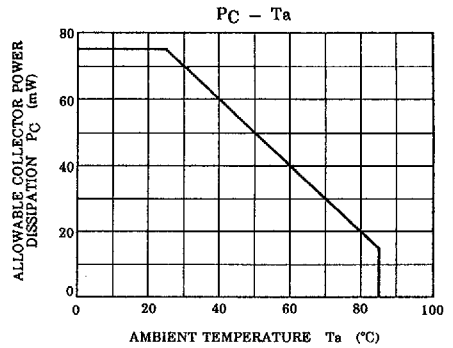
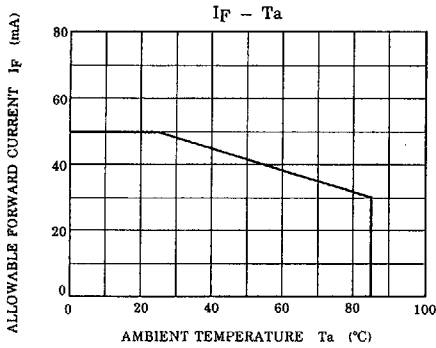
- Soldering temperature : 260°C MAX. Soldering time : 5s MAX.  
(Soldering portion of lead : above 1.5mm from the body of the device)
- If chemical are used for cleaning, the soldered surface only shall be cleaned with chemicals avoiding the whole cleaning of the package.
- The container is made of polycarbonate. Polycarbonate is usually stable with acid, alcohol, and aliphatic hydrocarbons however, with peroxochemicals (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.

&lt;Chemicals to avoid with polycarbonate&gt;

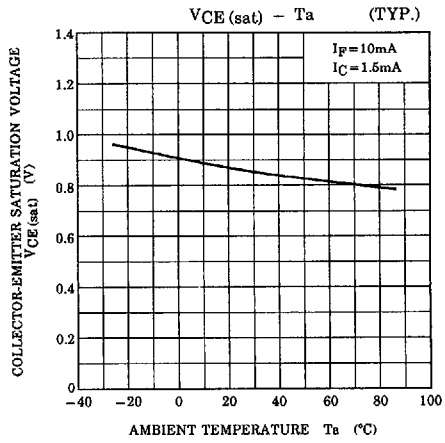
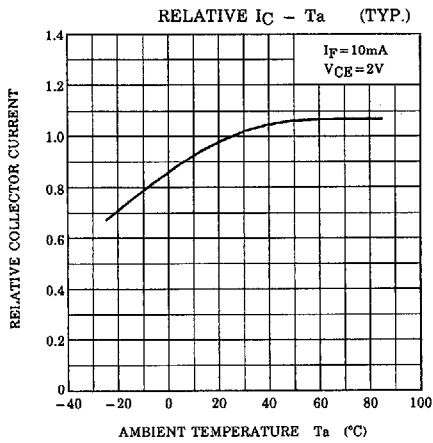
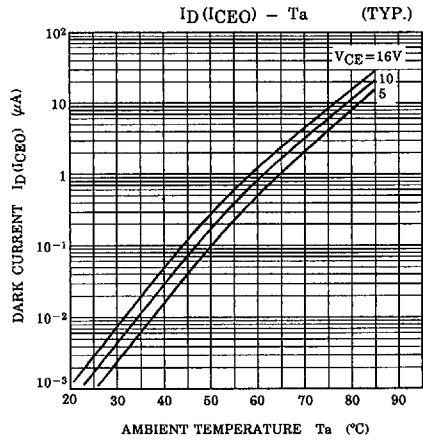
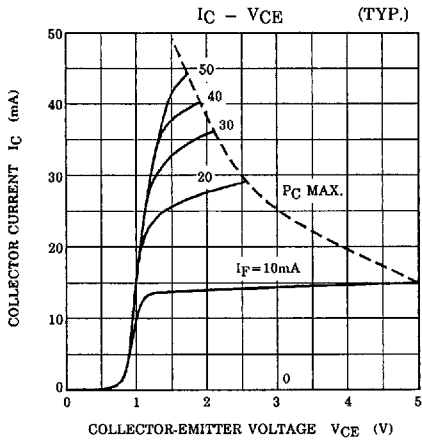
	PHENOMENON	CHEMICALS
A	Little deterioration but staining	<ul style="list-style-type: none"> <li>nitric acid (low concentration), hydrogen peroxide, chlorine</li> </ul>
B	Cracked, crazed, or swollen	<ul style="list-style-type: none"> <li>acetic acid (70% or more)</li> <li>gasoline</li> <li>methyl ethyl ketone, ethyl acetate, butyl acetate</li> <li>ethyl methacrylate, ethyl ether, MEK</li> <li>acetone, m-amino alcohol, carbon tetrachloride</li> <li>carbon disulfide, trichloroethylene, cresol</li> <li>thinners, oil of turpentine</li> <li>triethanolamine, TCP, TBP</li> </ul>
C	Melted { } : Used as solvent.	<ul style="list-style-type: none"> <li>concentrated sulfuric acid</li> <li>benzene</li> <li>styrene, acrylonitrile, vinyl acetate</li> <li>ethylenediamine, diethylenediamine</li> <li>{chloroform, methyl chloride, tetrachloromethane, dioxane, 1, 2-dichloroethane}</li> </ul>
D	Decomposed	<ul style="list-style-type: none"> <li>ammonia water</li> <li>other alkali</li> </ul>

- TLP852 shall be mounted on an unwarped surface.

(TLP852)

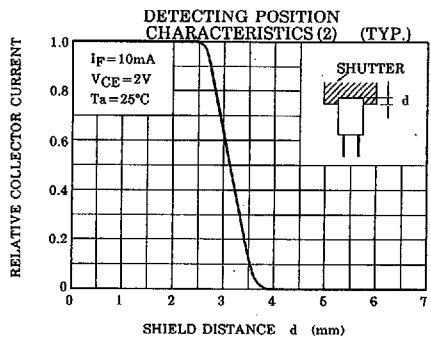
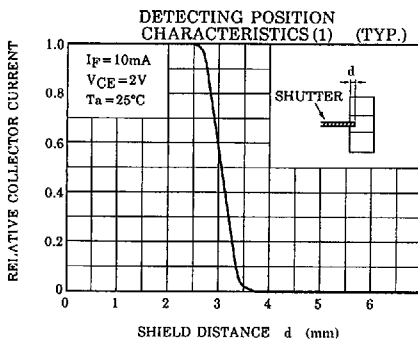
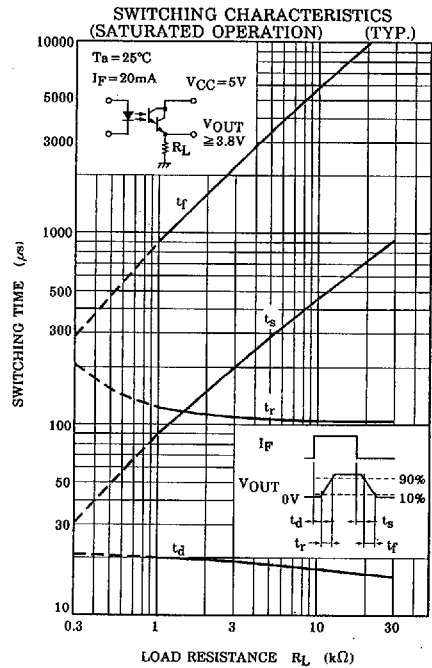
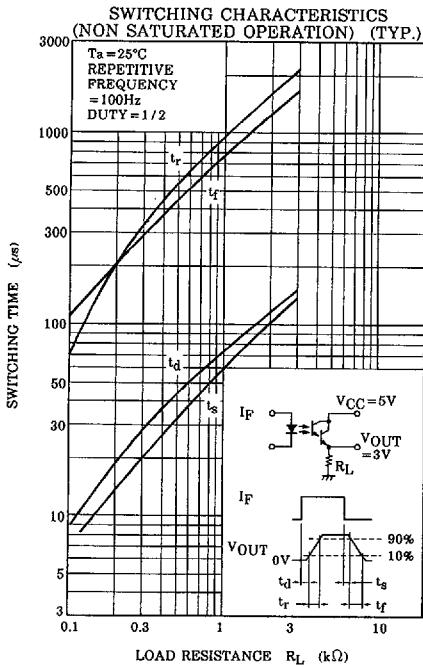


(TLP852)



6

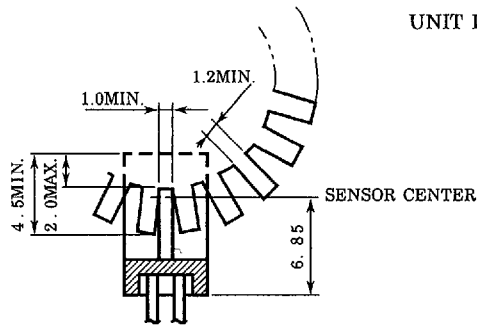
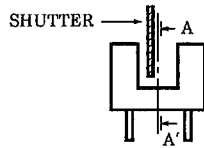
(TLP852)



(TLP852)

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.



UNIT IN mm

A-A' CROSS SECTION