

(TLP850)

TIMING DETECTION OF AUTOMATIC CONTROLLER AND COPYING MACHINE.

EDGE SENSOR

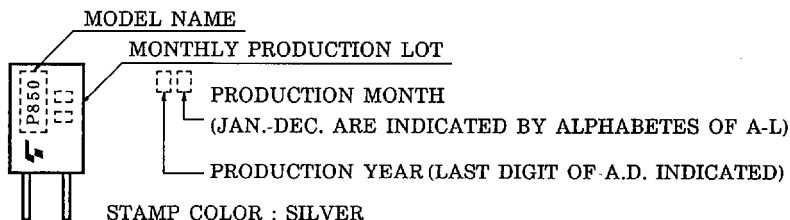
TLP850 is a photo interrupter with a wide detecting gap and high current transfer ratio (I_C/I_F).

- Detection gap : 5mm
- Detection slit width : 1mm
- High current transfer ratio : $I_C/I_F=40\%$ (MIN.)
- Scarcely affected by disturbance light of short wavelength of fluorescent lamp, etc. by use of visible light cut filter resin.
- Material of the package : Norlyl

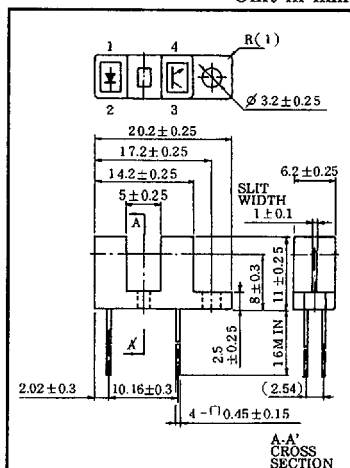
MAXIMUM RATINGS ($T_a = 25^\circ\text{C}$)

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



(): REFERENCE VALUE

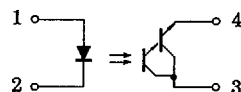
JEDEC

EIAJ

TOSHIBA 11-20B1

Weight : 0.79g (TYP.)

PIN CONNECTION



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

(TLP850)

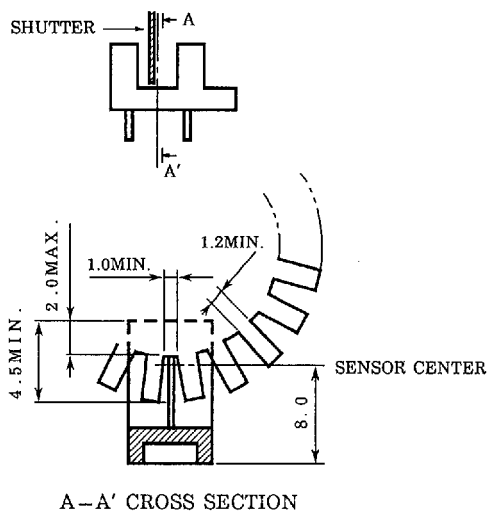
OPTO-ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)

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	$I_F = 10\text{mA}$	—	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	$V_{CE} = 2\text{V}, I_F = 10\text{mA}$	40	200	—	%
	Collector-Emitter Saturation Voltage	$V_{CE} (\text{sat})$	$I_F = 10\text{mA}, I_C = 2\text{mA}$	—	0.9	1.2	V
	Rise Time	t_r	$V_{CC} = 5\text{V}, I_C = 10\text{mA}$ $R_L = 100\Omega$	—	80	—	μs
	Fall Time	t_f		—	70	—	μs

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.



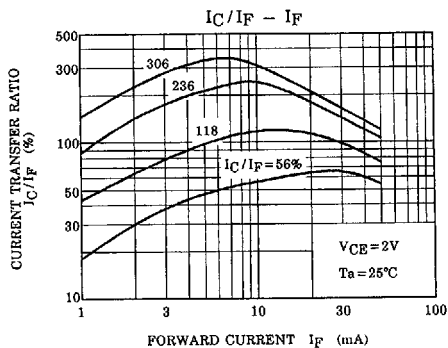
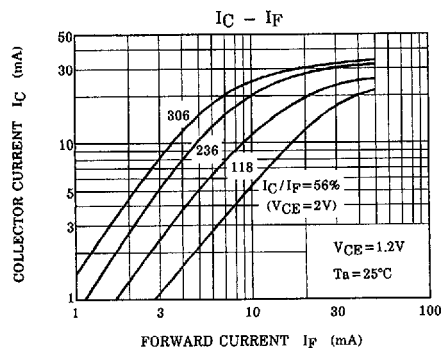
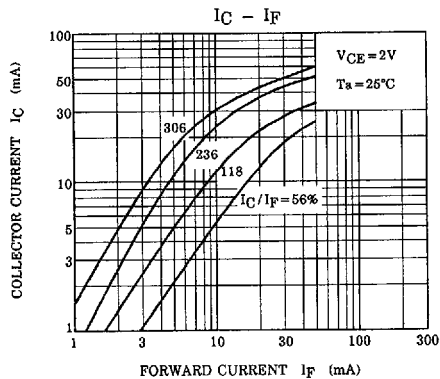
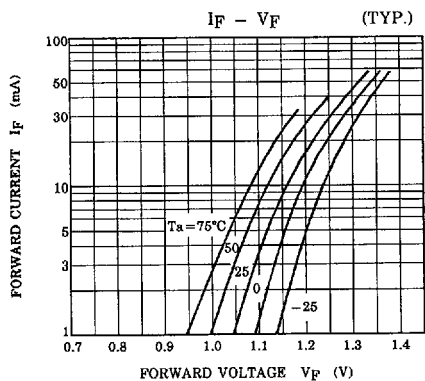
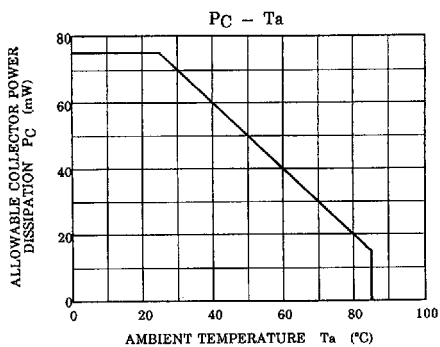
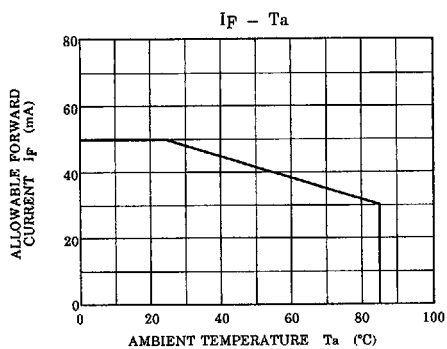
(TLP850)

PRECAUTION

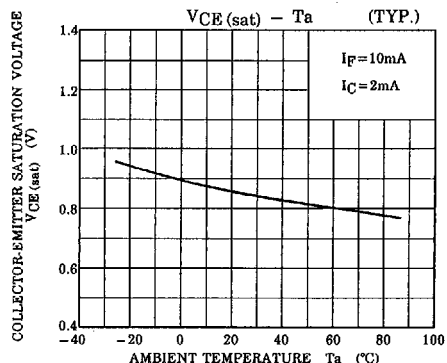
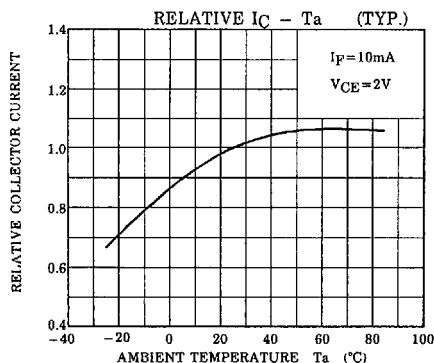
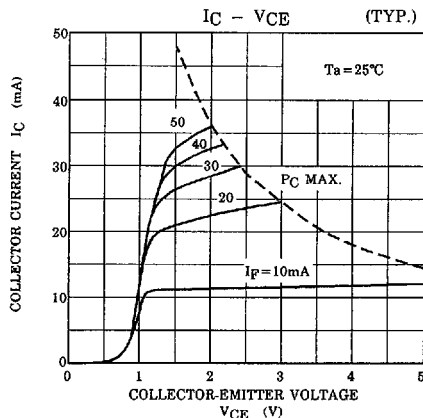
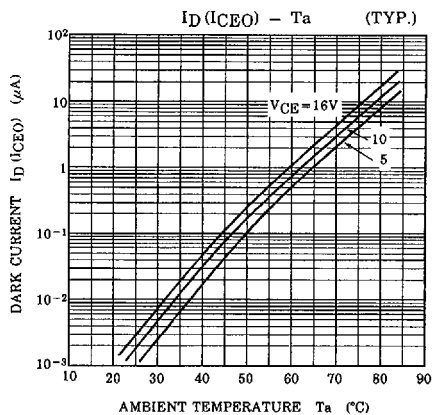
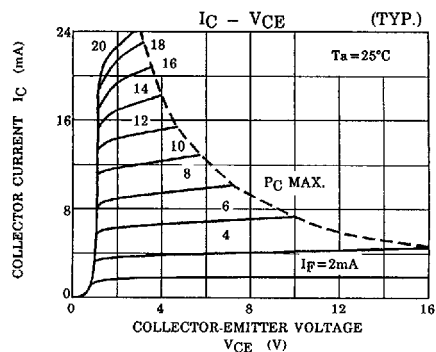
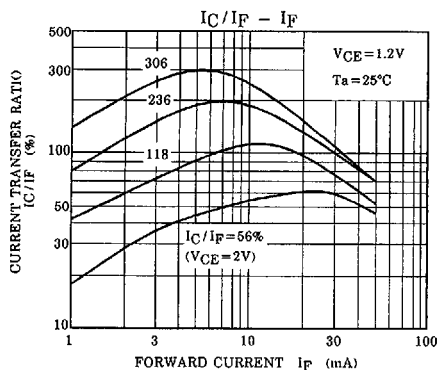
Please be careful of the followings.

1. Soldering temperature : 260°C MAX. Soldering time : 5s MAX.
(Soldering portion of lead : above 1.5mm from the body of the device)
2. If chemical are used for cleaning, the soldered surface only shall be cleaned with chemicals avoiding the whole cleaning of the package.
3. The package may be dissolved or cracked by oil or chemicals as it uses norlyl.
4. TLP850 shall be mounted on an unwarped surface.
5. Screw shall be tightened to clamping torque of 0.59N·m.

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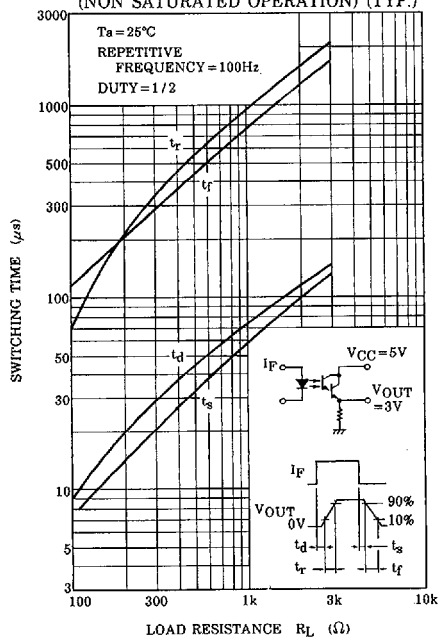


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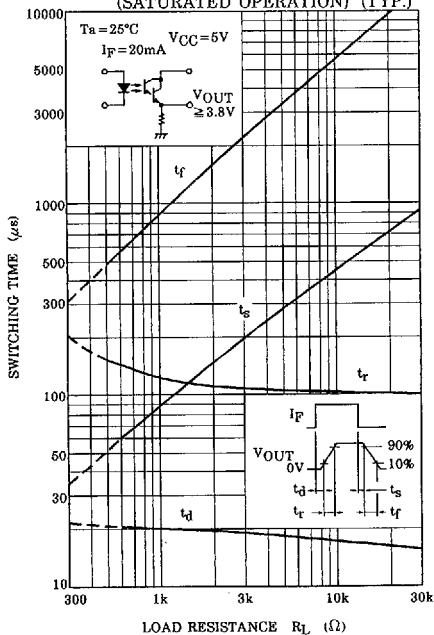


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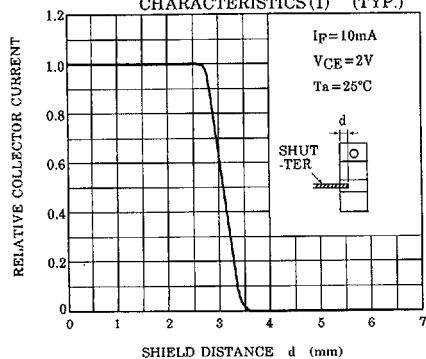
SWITCHING CHARACTERISTICS
(NON SATURATED OPERATION) (TYP.)



SWITCHING CHARACTERISTICS
(SATURATED OPERATION) (TYP.)



DETECTING POSITION
CHARACTERISTICS (1) (TYP.)



DETECTING POSITION
CHARACTERISTICS (2) (TYP.)

