

TOSHIBA PHOTOINTERRUPTER INFRARED LED + PHOTOTRANSISTOR

TLP810

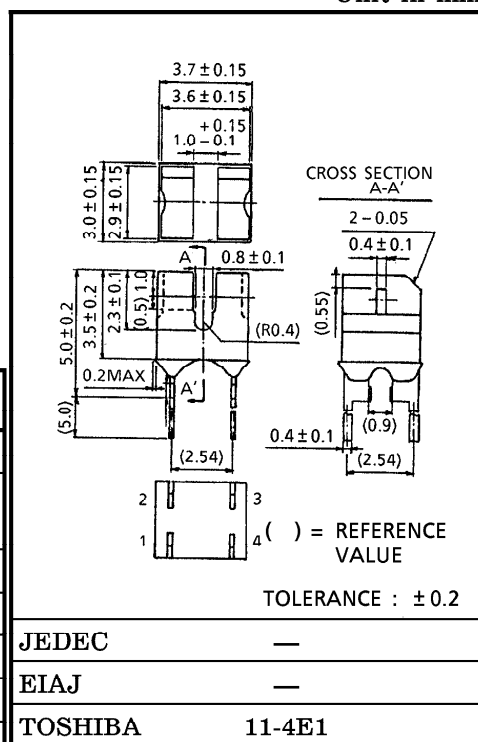
MOTOR ROTATION AND IRIS DETECTION FOR CAMERA
TRUCK DETECTION OF MICRO FLOPPY DISK DRIVE

Unit in mm

- Very small package
- High resolution : Slit width 0.4mm
- Gap : 1mm
- Directly mountable on PCB using the stand off of lead

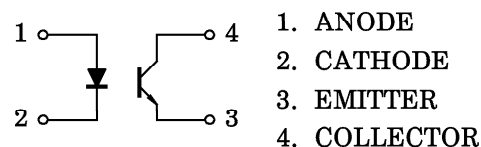
MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	RATING	UNIT
LED	Forward Current	I_F	50	mA
	Forward Current Derating (Ta > 25°C)	$I_F / ^\circ\text{C}$	-0.67	mA / °C
	Reverse Voltage	V_R	5	V
DETECTOR	Collector-Emitter Voltage	V_{CEO}	35	V
	Emitter Collector Voltage	V_{ECO}	5	V
	Collector Current	I_C	20	mA
	Collector Power Dissipation	P_C	75	mW
	Collector Power Dissipation (Ta > 25°C)	$\Delta P_C / ^\circ\text{C}$	-1	mW / °C
Operating Temperature Range		T_{opr}	-25~85	°C
Storage Temperature Range		T_{stg}	-40~100	°C



Weight : 0.07g (typ.)

PIN CONNECTION



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
	Capacitance	C_T	$V = 0, f = 1\text{MHz}$	—	30	—	pF
DETECTOR	Dark Current	$I_D (I_{CEO})$	$V_{CE} = 20\text{V}, I_F = 0$	—	—	100	nA
	Capacitance	C_T	$V = 0, f = 1\text{MHz}$	—	13	—	pF
COUPLED	Current Transfer Ratio	I_C / I_F	$V_{CE} = 0.6\text{V}, I_F = 5\text{mA}$	5	—	30	%
	Collector-Emitter Saturation Voltage	$V_{CE} (\text{sat})$	$I_F = 8\text{mA}, I_C = 0.1\text{mA}$	—	0.1	0.4	V
	Rise Time	t_r	$V_{CC} = 5\text{V}, I_C = 0.2\text{mA}, R_L = 1\text{k}\Omega$	—	50	—	μs
	Fall Time	t_f		—	50	—	μs

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● TOSHIBA is continually working to improve the quality and the reliability of its products. Nevertheless, semiconductor devices in general can malfunction or fail due to their inherent electrical sensitivity and vulnerability to physical stress. It is the responsibility of the buyer, when utilizing TOSHIBA products, to observe standards of safety, and to avoid situations in which a malfunction or failure of a TOSHIBA product could cause loss of human life, bodily injury or damage to property. In developing your designs, please ensure that TOSHIBA products are used within specified operating ranges as set forth in the most recent products specifications. Also, please keep in mind the precautions and conditions set forth in the TOSHIBA Semiconductor Reliability Handbook.

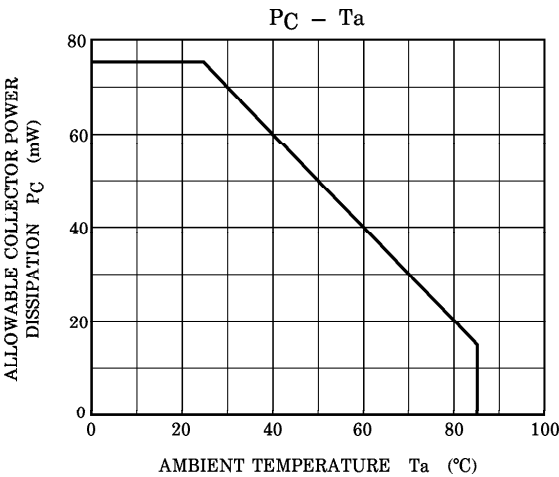
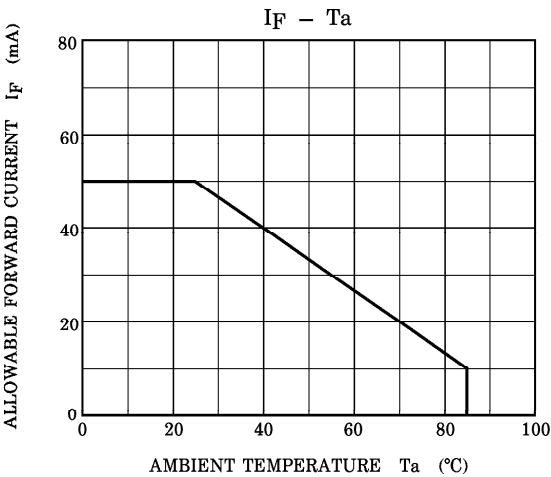
PRECAUTION

Please be careful of the followings.

- 1. Soldering temperature : 260°C max Soldering time : 5s max
Soldering portion : at above 1.5mm from the lower part of the body.
- 2. Be careful of not attachiat residual flux and chemicals to the light emitting surface and light receiving surface.

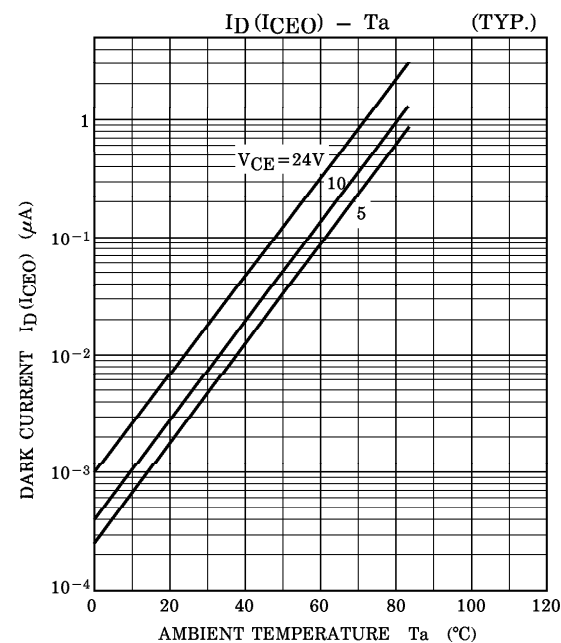
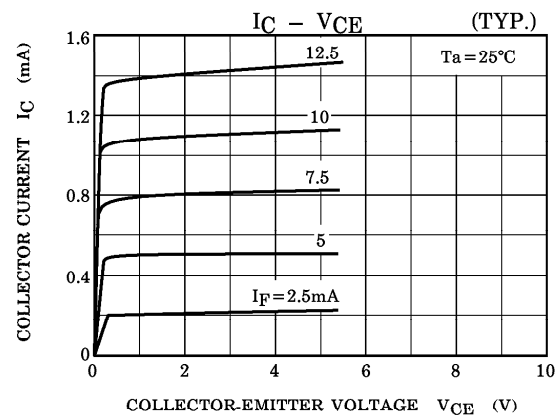
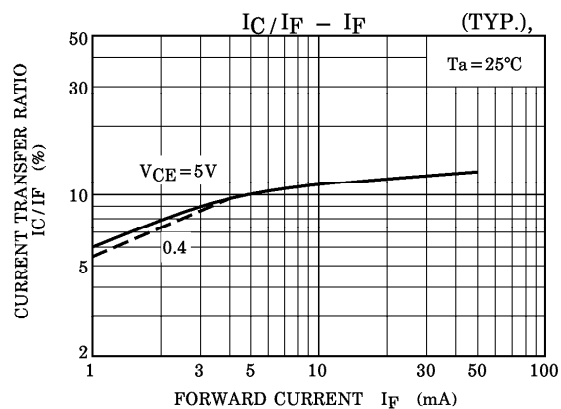
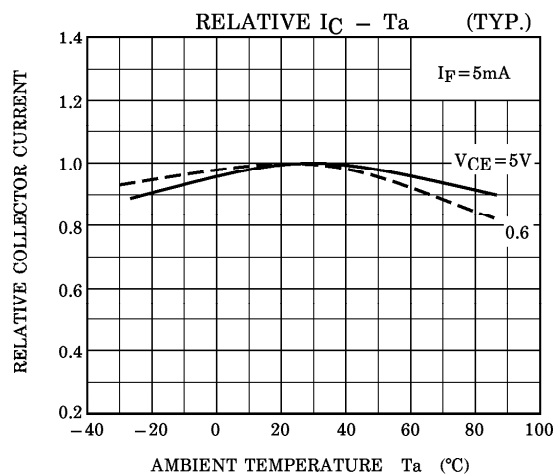
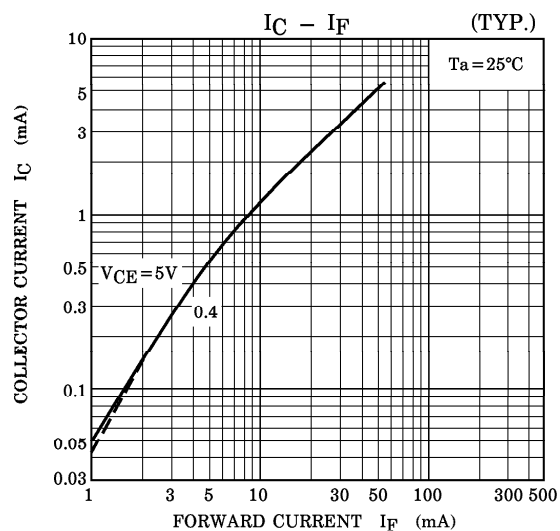
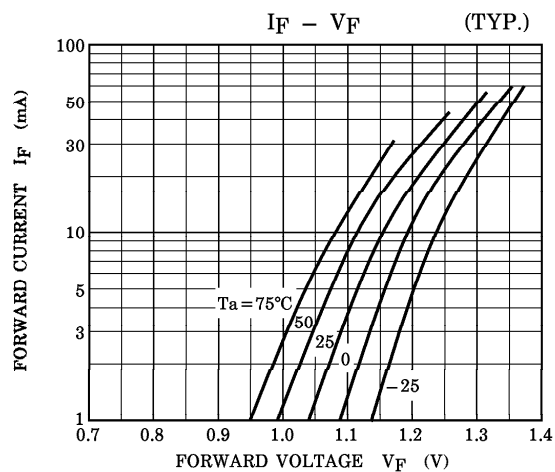
ENVIRONMENT

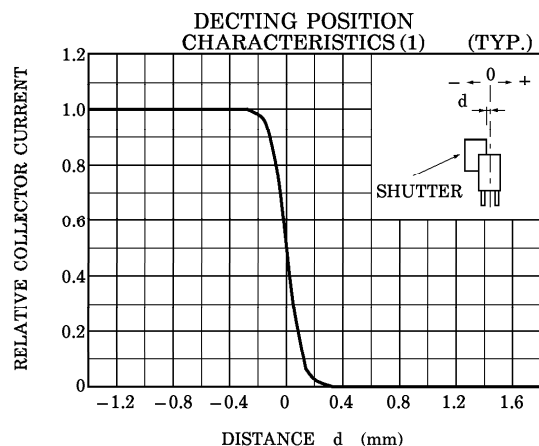
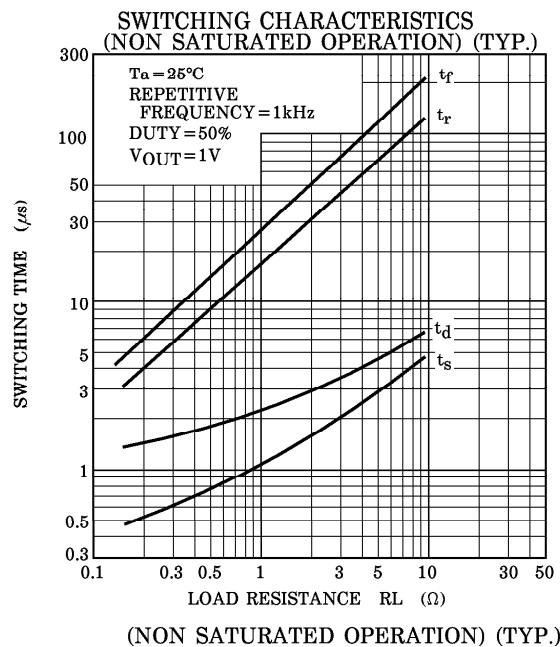
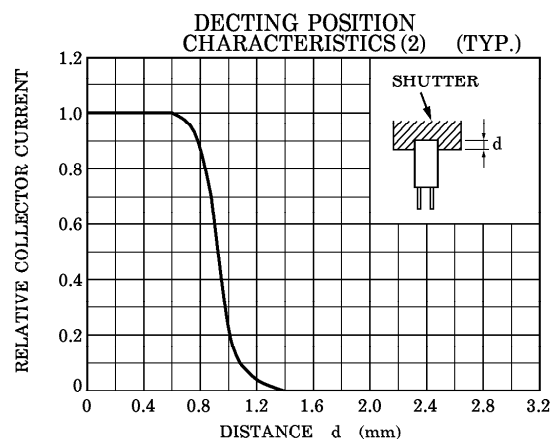
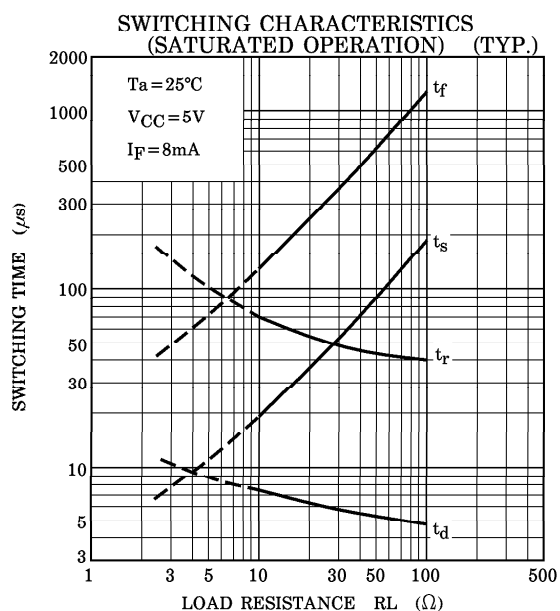
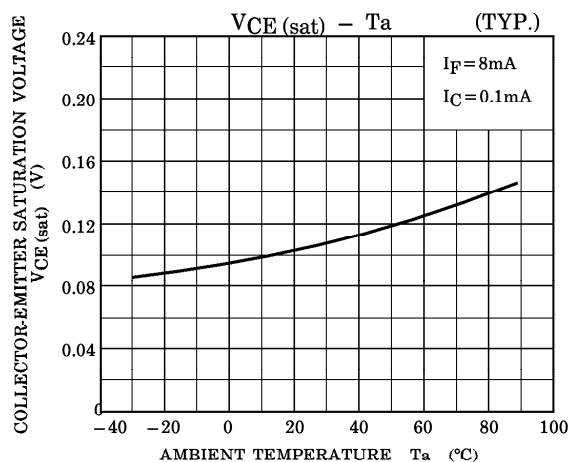
- Should not be exposed to corrosive gas such as hydrogen sulfide gas and a sea breeze.
 - Should not be exposed to visible dust.
 - Should not be exposed to direct sunlight.
- If any case, should not be subject to load which may result in deformation / deterioration of products.



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- Gallium arsenide (GaAs) is a substance used in the products described in this document. GaAs dust and fumes are toxic. Do not break, cut or pulverize the product, or use chemicals to dissolve them. When disposing of the products, follow the appropriate regulations. Do not dispose of the products with other industrial waste or with domestic garbage.
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SWITCHING TIME TEST CIRCUIT

