

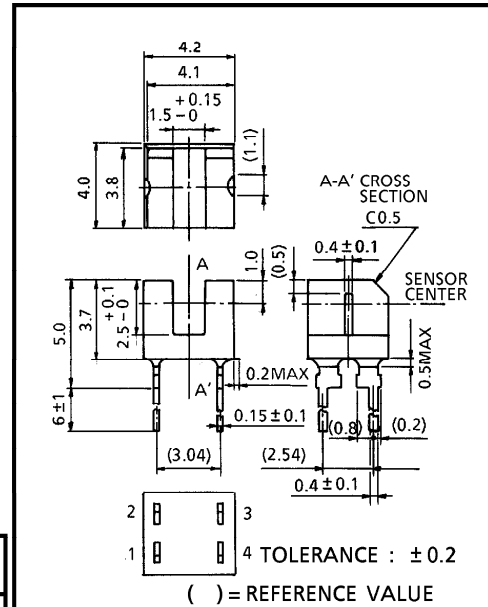
TOSHIBA PHOTOINTERRUPTER INFRARED LED + PHOTOTRANSISTOR

TLP814

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

Unit in mm

- Very small package
- High resolution : Slit width 0.4mm
- Gap : 1.5mm
- Current transfer ratio : $I_C / I_F = 2\%$ (min)
- Directly mountable on PCB using the stand off of lead.



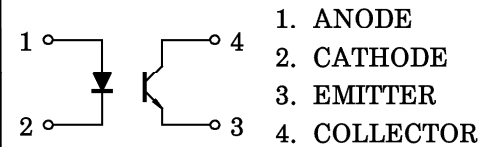
MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	RATING	UNIT
LED	Forward Current	I_F	50	mA
	Forward Current Derating (Ta > 25°C)	$\Delta I_F / ^\circ C$	-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 Power Dissipation	P_C	75	mW
	Collector Power Dissipation Derating (Ta > 25°C)	$\Delta P_C / ^\circ C$	-1	mW / °C
	Collector Current	I_C	20	mA
Operating Temperature Range		T_{opr}	-25~85	°C
Storage Temperature Range		T_{stg}	-40~100	°C

JEDEC	—
EIAJ	—
TOSHIBA	

Weight : 0.1g (typ.)

PIN CONNECTION



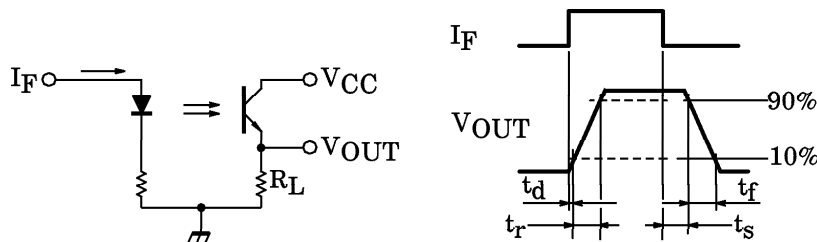
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OPTO-ELECTRICAL CHARACTERISTICS (Ta = 25°C)

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	$I_F = 5\text{mA}$	—	940	—	nm
DETECTOR	Dark Current	$I_D (I_{CEO})$	$V_{CE} = 20\text{V}, I_F = 0$	—	—	0.1	μA
	Peak Sensitivity Wavelength	λ_P		—	800	—	nm
COUPLED	Current Transfer Ratio	I_C / I_F	$V_{CE} = 0.6\text{V}, I_F = 5\text{mA}$	2	5	—	%
	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	$V_{CC} = 5\text{V}, I_C = 0.2\text{mA},$ $R_L = 1\text{k}\Omega$ (Note)	—	50	—	μs
	Fall Time	t_f		—	50	—	μs

(Note) t_r, t_f TEST CIRCUIT



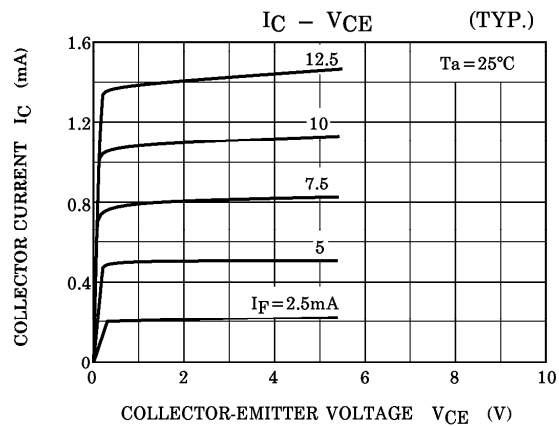
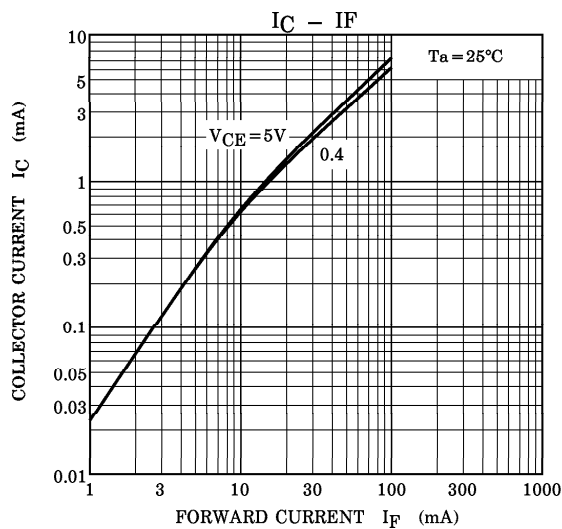
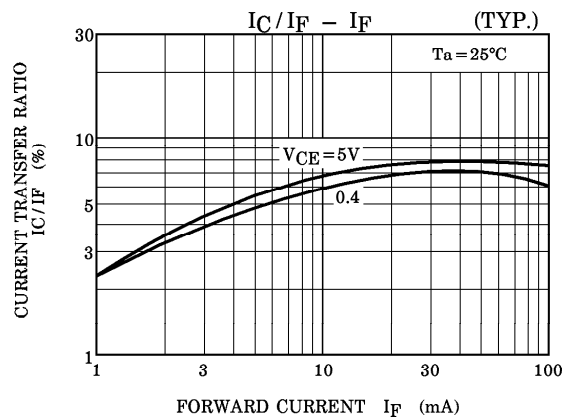
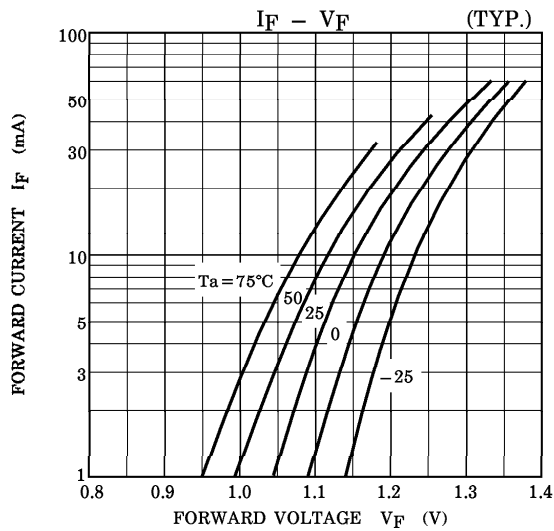
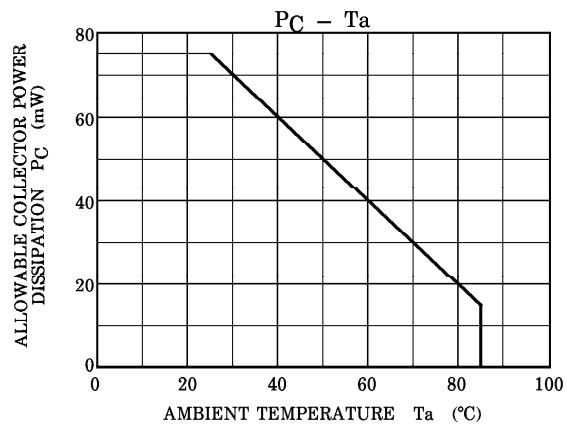
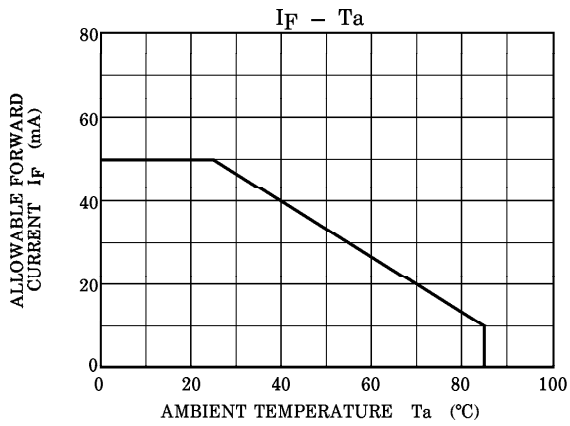
PRECAUTION

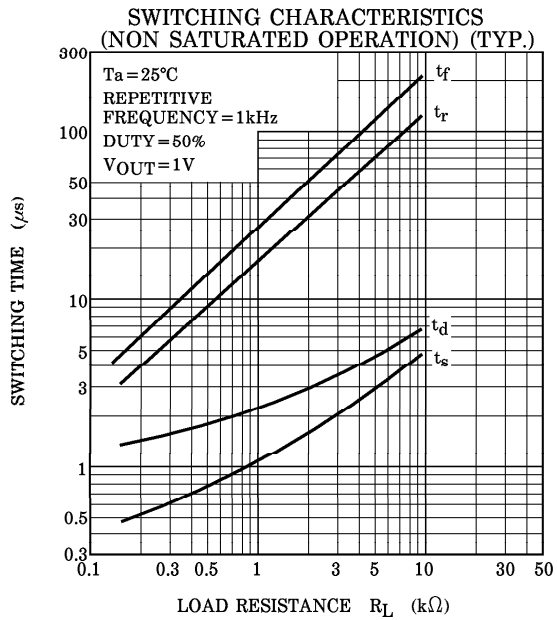
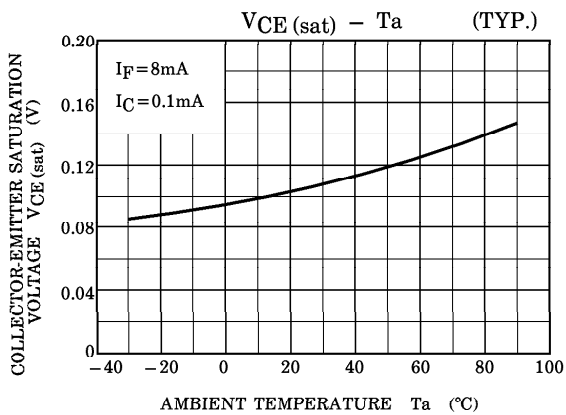
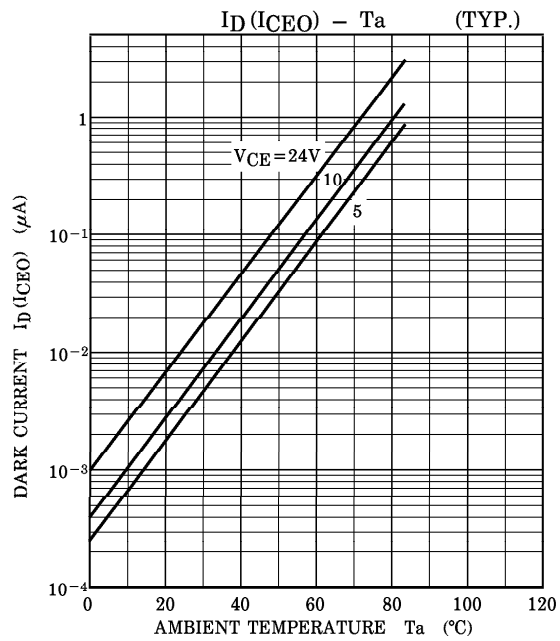
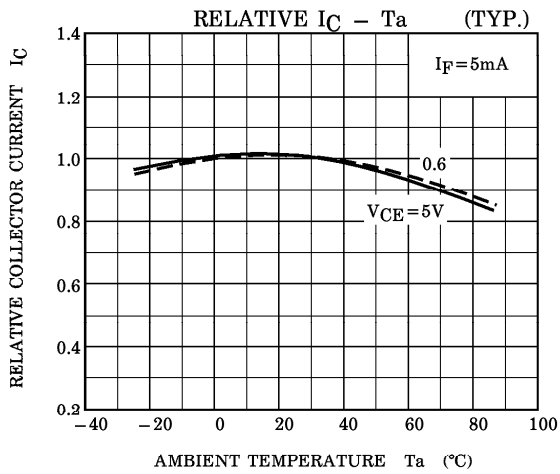
Please be careful of the followings.

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

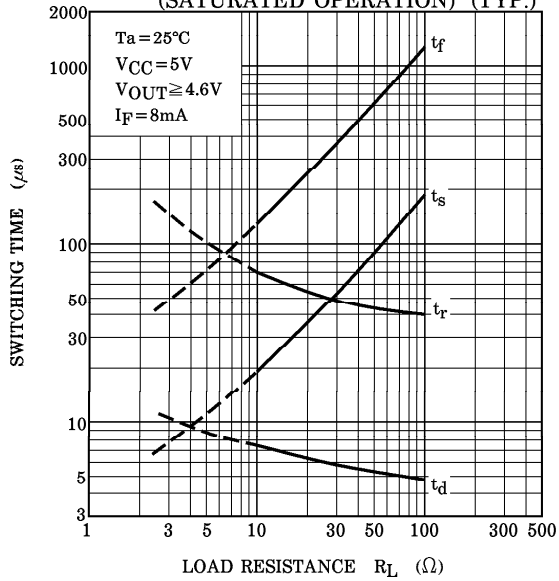
ENVIRONMENT

- 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.

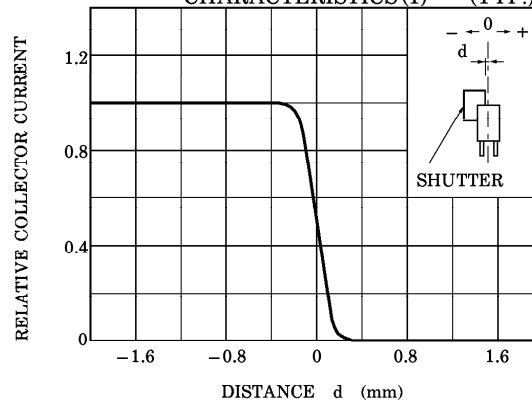




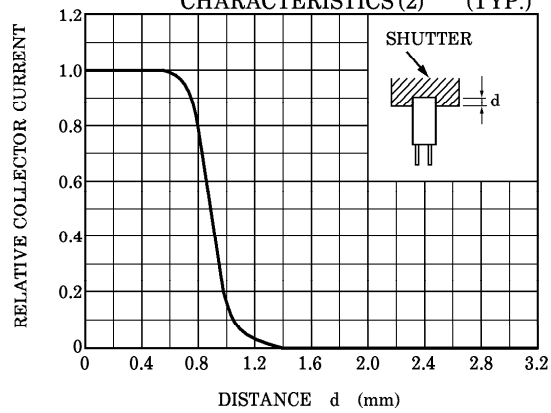
SWITCHING CHARACTERISTICS (SATURATED OPERATION) (TYP.)



DETECTING POSITION CHARACTERISTICS (1) (TYP.)



DETECTING POSITION CHARACTERISTICS (2) (TYP.)



SWITCHING TIME TEST CIRCUIT

