

Photointerrupter, double-layer mold type

RPI-122

The RPI-122 is an ultra-small size, double-layer mold photointerrupter.

●Applications

Optical control equipment

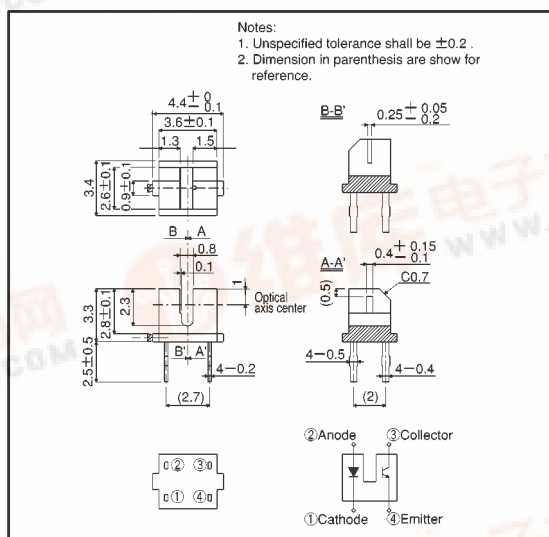
Cameras

Floppy disk drives

●Features

- 1) Ultra-small.
- 2) Minimal influence from stray light.
- 3) Low collector-emitter saturation voltage.

●External dimensions (Units: mm)



●Absolute maximum ratings (Ta = 25°C)

Parameter		Symbol	Limits	Unit
Input(LED)	Forward current	I _F	50	mA
	Reverse voltage	V _R	5	V
	Power dissipation	P _D	80	mW
Output (photo-transistor)	Collector-emitter voltage	V _{CEO}	30	V
	Emitter-collector voltage	V _{ECO}	4.5	V
	Collector current	I _C	30	mA
	Collector power dissipation	P _C	80	mW
Operating temperature		T _{opr}	-25~+85	°C
Storage temperature		T _{stg}	-40~+100	°C



●Electrical and optical characteristics (Ta = 25°C)

	Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Input characteristics	Forward voltage	V_F	—	1.3	1.6	V	$I_F=50\text{mA}$
	Reverse current	I_R	—	—	10	μA	$V_R=5\text{V}$
Output characteristics	Dark current	I_{CE0}	—	—	0.5	μA	$V_{CE}=10\text{V}$
	Peak sensitivity wavelength	λ_P	—	800	—	nm	—
Transfer characteristics	Collector current	I_C	0.18	—	1.08	mA	$V_{CE}=0.7\text{V}, I_F=3\text{mA}$
	Collector-emitter saturation voltage	$V_{CE(sat)}$	—	—	0.3	V	$I_F=20\text{mA}, I_C=0.3\text{mA}$
	Response time	$t_r \cdot t_f$	—	10	—	μs	$V_{CC}=5\text{V}, I_F=20\text{mA}, R_L=100\Omega$

●Electrical and optical characteristic curves

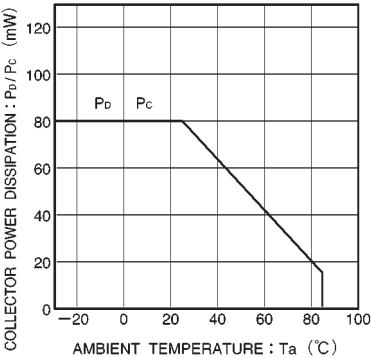


Fig.1 Output vs. ambient temperature

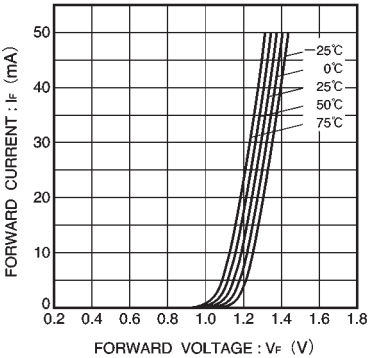


Fig.2 Forward current vs. forward voltage

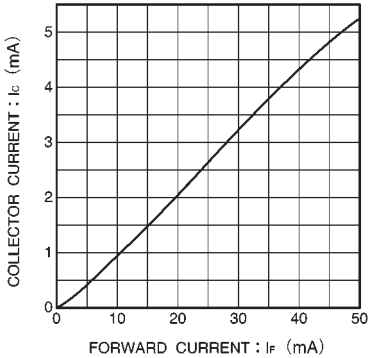


Fig.3 Collector current vs. forward current

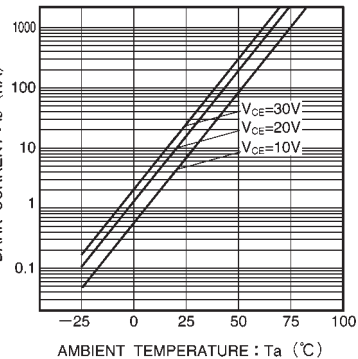


Fig.4 Dark current vs. ambient temperature

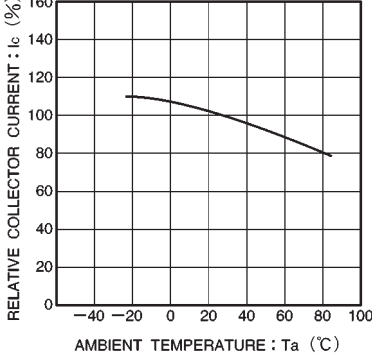


Fig.5 Relative output vs. ambient temperature

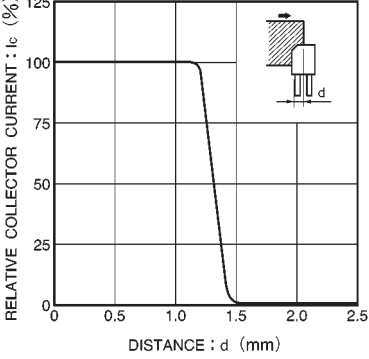


Fig.6 Relative output current vs. distance (I)

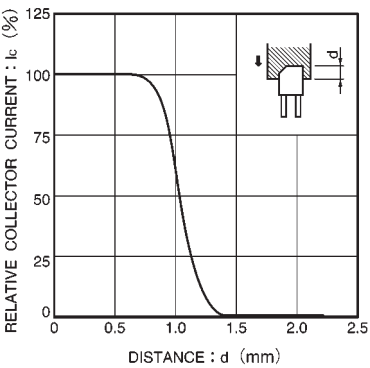


Fig.7 Relative output current vs. distance (II)

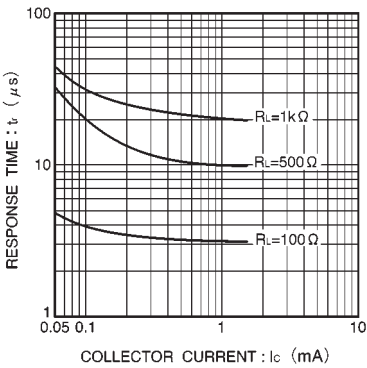


Fig.8 Response time vs. collector current

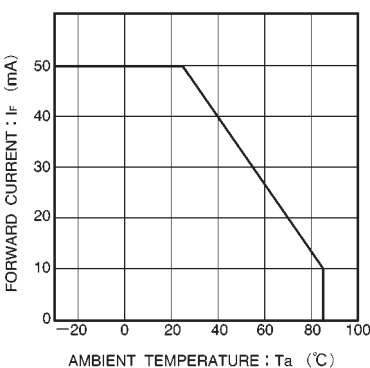


Fig.9 Forward current falloff

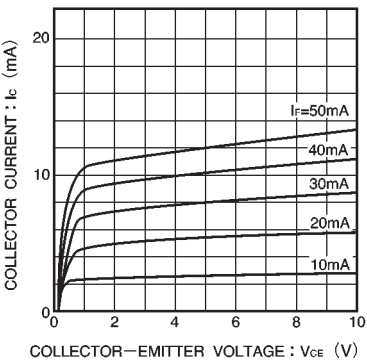


Fig.10 Output characteristics

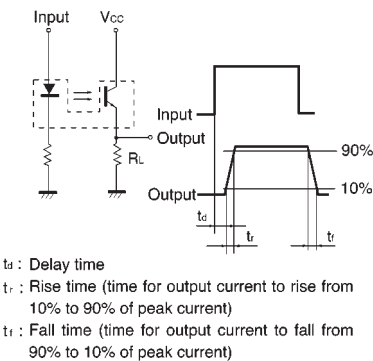


Fig.11 Response time measurement circuit