

Photointerrupter, double-layer mold type

RPI-122

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

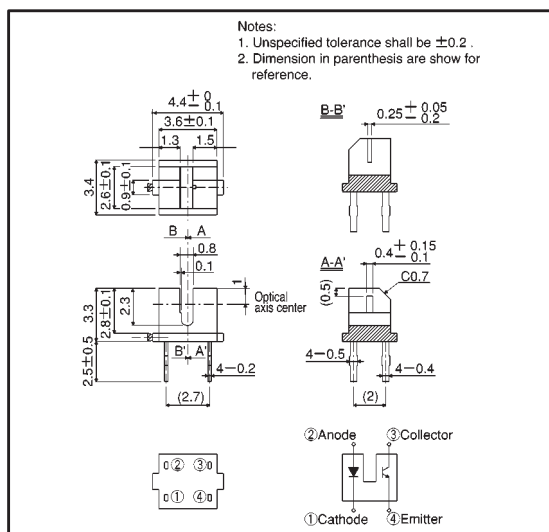
●Applications

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}	$-25 \sim +85$	°C
Storage temperature		T_{stg}	$-40 \sim +100$	°C

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

	Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Input charac- teristics	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 charac- teristics	Dark current	I_{CEO}	—	—	0.5	μA	$V_{CE}=10\text{V}$
	Peak sensitivity wavelength	λ_P	—	800	—	nm	—
Transfer charac- teristics	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

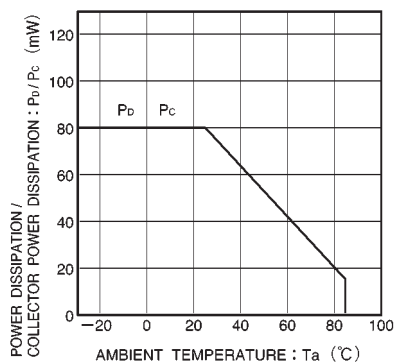


Fig.1 Output vs. ambient temperature

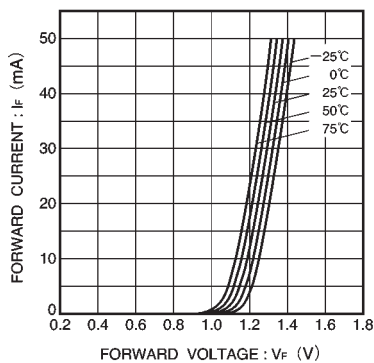


Fig.2 Forward current vs. forward voltage

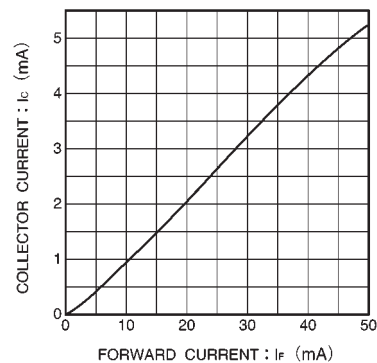


Fig.3 Collector current vs. forward current

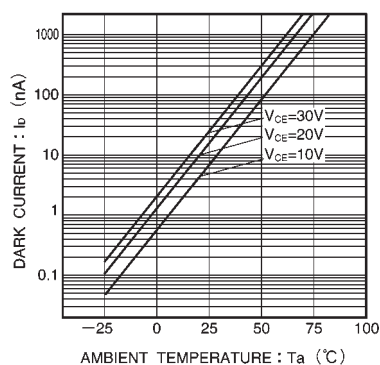


Fig.4 Dark current vs. ambient temperature

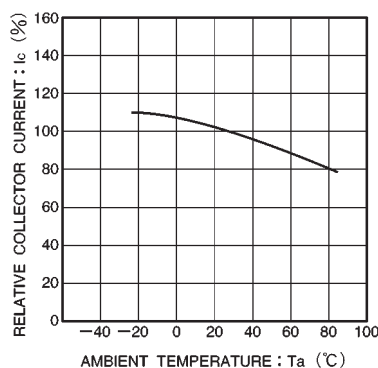


Fig.5 Relative output vs. ambient temperature

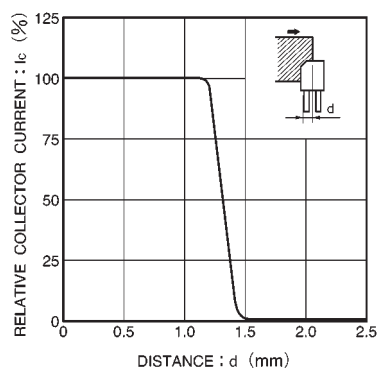


Fig.6 Relative output current vs. distance (I)

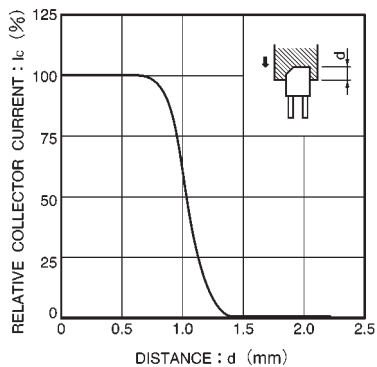


Fig.7 Relative output current vs. distance (II)

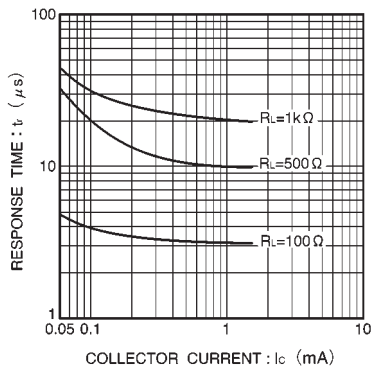


Fig.8 Response time vs. collector current

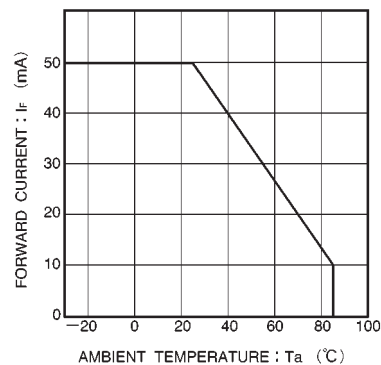


Fig.9 Forward current falloff

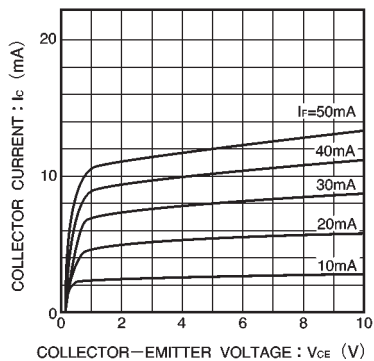


Fig.10 Output characteristics

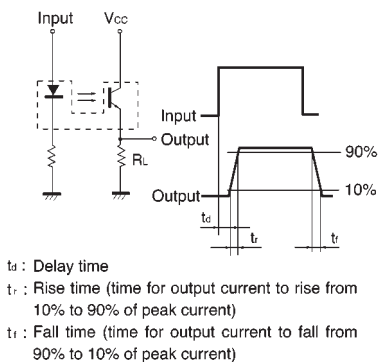


Fig.11 Response time measurement circuit