# Photointerrupter, double-layer mold type

The RPI-222 is an ultra-small size, double-layer mold photointerrupter.

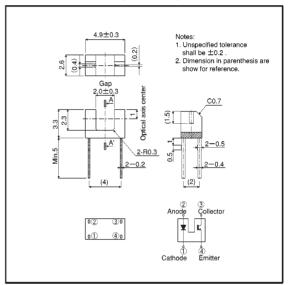
Applications
Optical control equipment
Cameras
Floppy disk drives

Digital video disc

### Features

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

# External dimensions (Units: mm)



### Absolute maximum ratings

Parameter		Symbol	Limits	Unit
Input(LED)	Forward current	lF	50	mA
	Reverse voltage	VR	5	V
	Power dissipation	Po	80	mW
Output (photo- (transistor)	Collector-emitter voltage	Vceo	30	V
	Emitter-collector voltage	Veco	4.5	V
	Collector current	lc	30	mA
	Collector power dissipation	Pc	80	mW
Operating temperature		Topr	-25~+85	$^{\circ}$
Storage temperature		Tstg	<b>−30~+85</b>	C

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# ●Electrical and optical characteristics (Tc = 25°C)

Parameter		Symbol	Min.	Тур.	Max.	Unit	Conditions
Input charac- teristics	Forward voltage	VF	_	1.3	1.6	٧	I==50mA
	Reverse current	lR	_	_	10	μΑ	V <sub>R</sub> =5V
Output characteristics	Dark current	ICEO	_	_	0.5	μΑ	VcE=10V
	Peak sensitivity wavelength	λp	_	800	_	nm	_
Transfer charac- teristics	Collector current	lc	0.18	0.3	0.95	mA	VcE=5V, IF=10mA
	Collector-emitter saturation voltage	VCE(sat)	_	_	0.4	٧	I <sub>F</sub> =20mA, I <sub>C</sub> =0.1mA
	Response time	tr • tf	_	10	_	μS	Vcc=5V, I==20mA, RL=100 Ω

# Electrical and optical characteristic curves

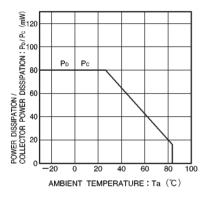


Fig.1 Power dissipation / collector power dissipation vs. ambient temperature

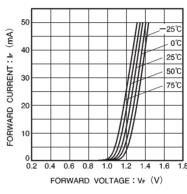


Fig.2 Forward current vs. forward voltage

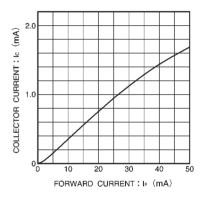


Fig.3 Collector current vs. forward current

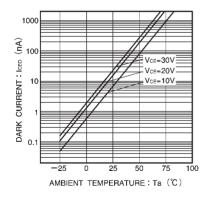


Fig.4 Dark current vs. ambient temperature

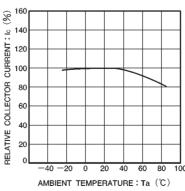


Fig.5 Relative output vs. ambient temperature

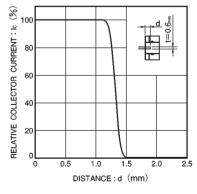


Fig.6 Relative output current vs. distance (I)

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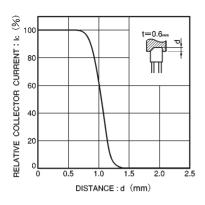


Fig.7 Relative output current vs. distance (II)

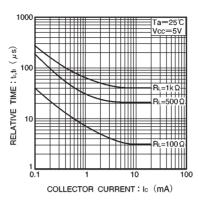


Fig.8 Response time vs. output current

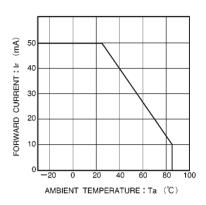


Fig.9 Forward current falloff

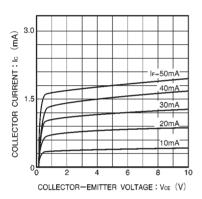
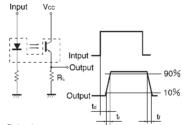


Fig.10 Output characteristics



- ta: Delay time
- tr : Rise time (time for output current to rise from 10% to 90% of peak current)
- tr : Fall time (time for output current to fall from 90% to 10% of peak current)

Fig.11 Response time mesurement circuit