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Actuator-type photointerrupter

RPI-5200

The RPI-5200 is a compact, actuator-type photointerrupter.

●Applications

Optical control equipment

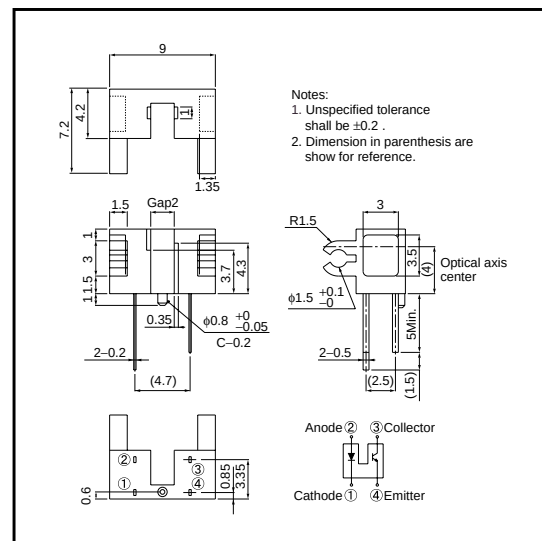
Facsimiles

Plain paper copiers

●Features

- 1) Compact.
- 2) Minimal influence from stray light.
- 3) Equipped with an actuator mount.

●External dimensions (Units : mm)



●Absolute maximum ratings (Ta = 25°C)

Parameter	Symbol	Limits	Unit
Input(LED)	Forward current	I_F	50
	Reverse voltage	V_R	5
	Power dissipation	P_D	80
Output (photo-transistor)	Collector-emitter voltage	V_{CEO}	30
	Emitter-collector voltage	V_{ECO}	4.5
	Collector current	I_C	30
	Collector power dissipation	P_C	80
Operating temperature	T_{opr}	-25~+85	°C
Storage temperature	T_{stg}	-30~+85	°C

Sensors

●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_{CEO}	–	–	0.5	μA	$V_{CE}=10\text{V}$
	Peak sensitivity wavelength	λ_P	–	800	–	nm	–
Transfer characteristics	Collector current	I_C	0.2	1.0	–	mA	$V_{CE}=5\text{V}, I_F=20\text{mA}$
	Collector-emitter saturation voltage	$V_{CE(sat)}$	–	–	0.4	V	$I_F=20\text{mA}, I_C=0.1\text{mA}$
	Response time	t_r, t_f	–	10	–	μs	$V_{CC}=5\text{V}, I_F=20\text{mA}, R_L=100\Omega$

●Electrical and optical characteristic curves

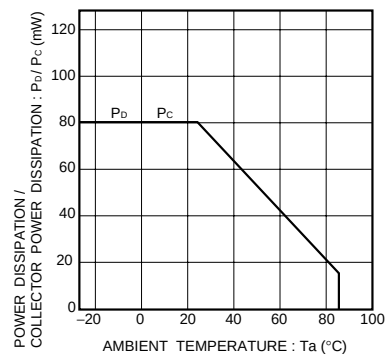


Fig.1 Power dissipation / collector power dissipation vs. ambient temperature

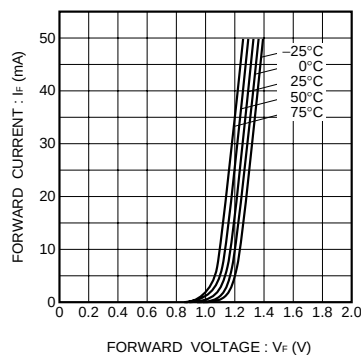


Fig.2 Forward current vs. forward voltage

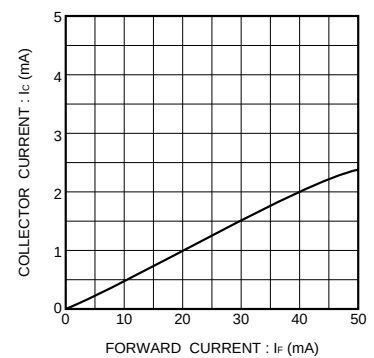


Fig.3 Collector current vs. forward current

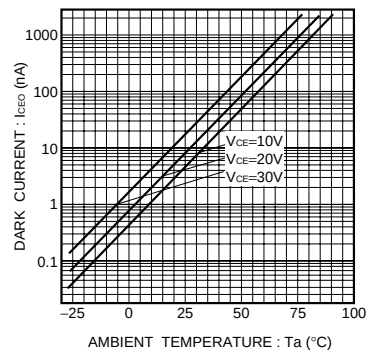


Fig.4 Dark current vs. ambient temperature

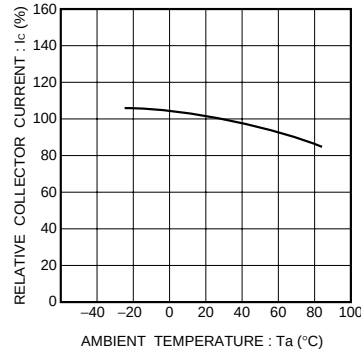


Fig.5 Relative output vs. ambient temperature

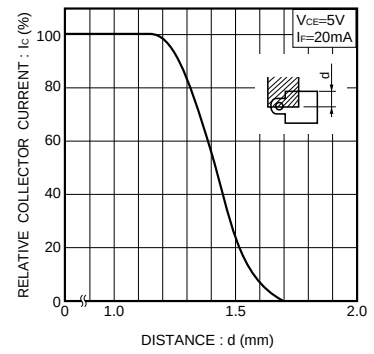


Fig.6 Relative output vs. distance (l)

Sensors

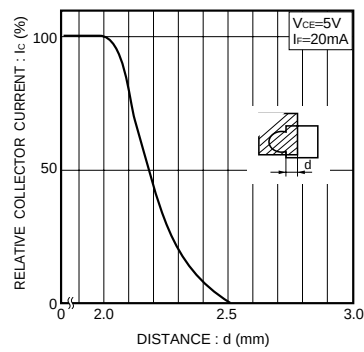


Fig.7 Relative output vs. distance (II)

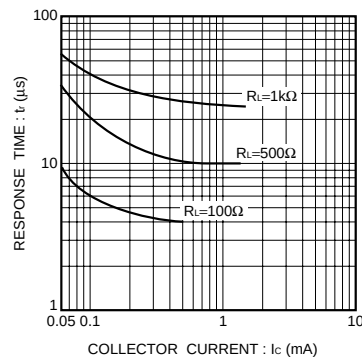


Fig.8 Response time vs. output current

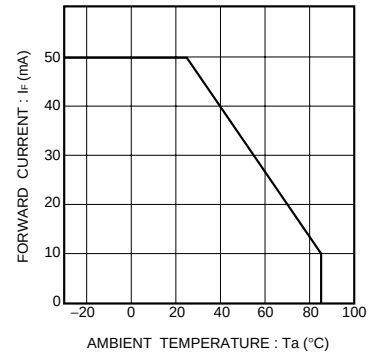


Fig.9 Forward current falloff

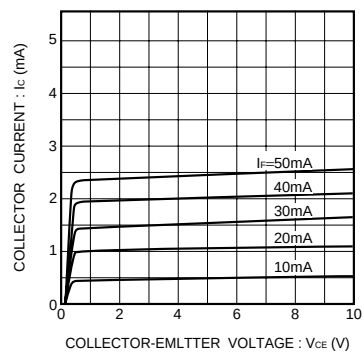


Fig.10 Output characteristics

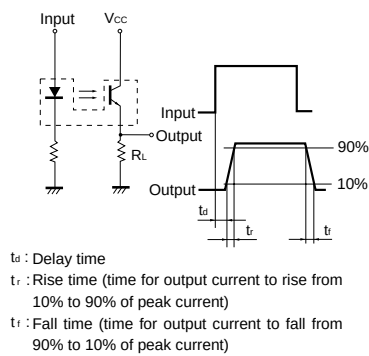


Fig.11 Response time measurement circuit