

Photointerrupter, double-layer mold type

RPI-304

The RPI-304 is standard tall package photointerrupter. This product can be fix on PCB by snap.

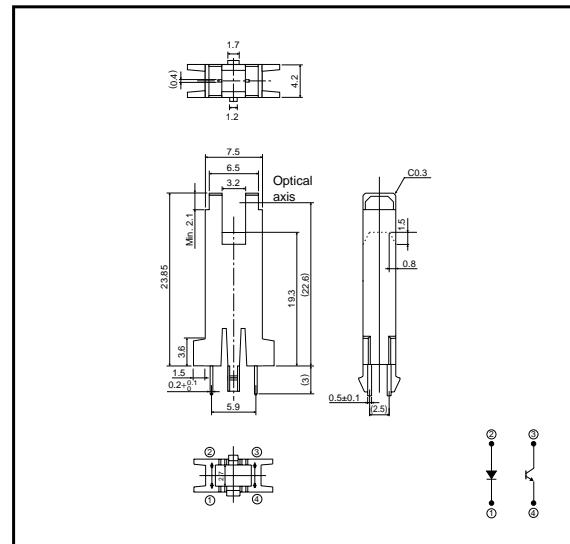
●Application

Reel count sensor for VCR

●Features

- 1) Tall package (Optical axis 22.6mm)
- 2) Small package due to the double-layer mold
- 3) PPS package for heat resistance

●External dimensions (Units : mm)



●Absolute maximum ratings ($T_a = 25^\circ\text{C}$)

	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 (phototransistor)	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}	-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	V	I _F =50mA
	Reverse current	I _R	—	—	μA	V _R =5V
Output characteristics	Dark current	I _{CEO}	—	—	0.5	μA
	Peak sensitivity wavelength	λ _P	—	800	nm	V _{CE} =10V
Transfer characteristics	Collector current	I _C	0.2	0.7	2.0	mA
	Collector-emitter saturation voltage	V _{CE(sat)}	—	—	0.4	V
Response time	t _r • t _f	—	10	—	μs	V _{CC} =5V, I _F =20mA, R _L =100Ω

● Electrical and optical characteristic curves

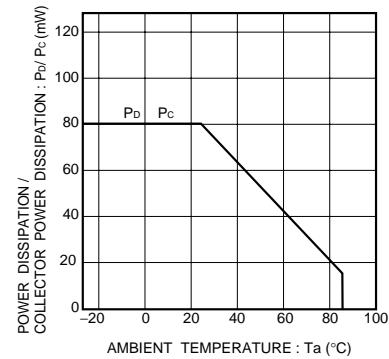


Fig.1 Power dissipation / collector power dissipation vs. ambient temperature

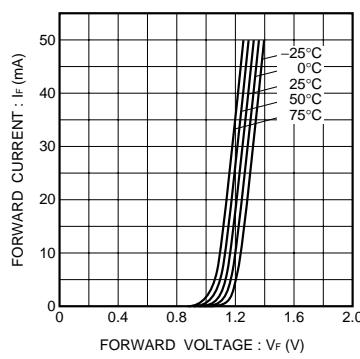


Fig.2 Forward current vs. forward voltage

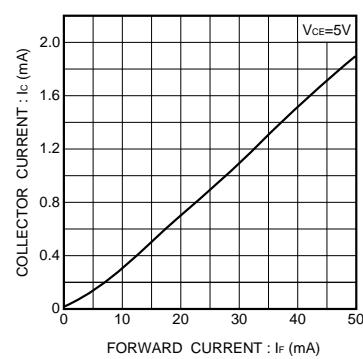


Fig.3 Collector current vs. forward current

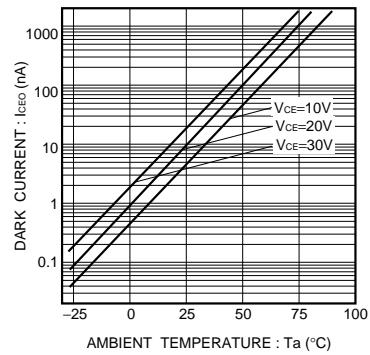


Fig.4 Dark current vs. ambient temperature

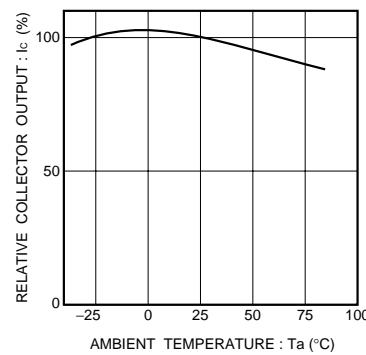


Fig.5 Relative output vs. ambient temperature

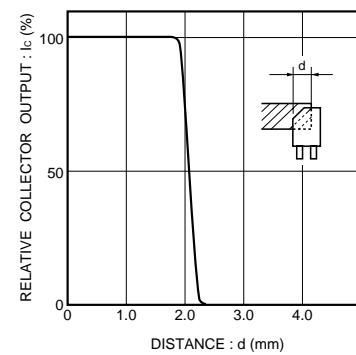


Fig.6 Relative output vs. distance

Sensors

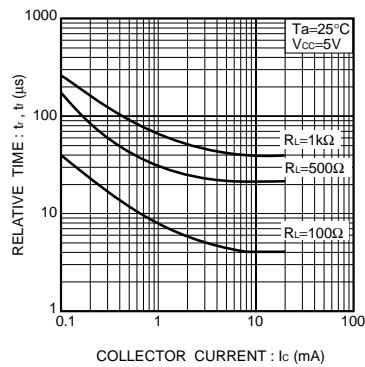


Fig.7 Response time vs. collector current

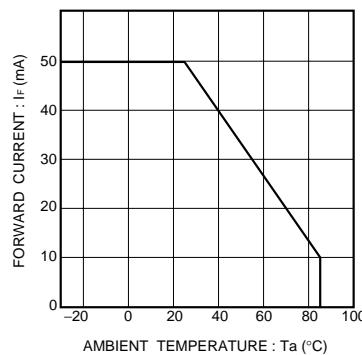


Fig.8 Forward current falloff

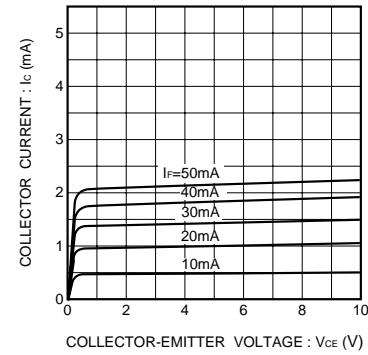
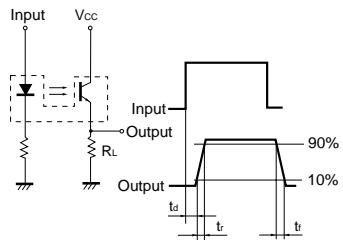


Fig.9 Output characteristics



t_d : Delay time
 t_r : Rise time (time for output current to rise from 10% to 90% of peak current)
 t_f : Fall time (time for output current to fall from 90% to 10% of peak current)

Fig.10 Response time measurement circuit

Appendix

Notes

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