Photointerrupter, double-layer mold type

RPI-304

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

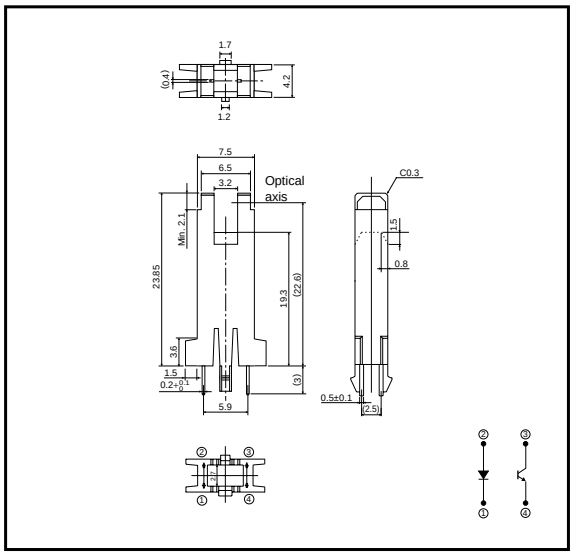
●**Application**

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** (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		Topr	−25~+85	°C
Storage temperature		Tstg	−30~+85	°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=50mA
	Reverse current	I_R	–	–	10	μA	V_R=5V
Output characteristics	Dark current	I_{CEO}	–	–	0.5	μA	V_{CE}=10V
	Peak sensitivity wavelength	λ_P	–	800	–	nm	–
Transfer characteristics	Collector current	I_C	0.2	0.7	2.0	mA	V_{CE}=5V, I_F=20mA
	Collector-emitter saturation voltage	$V_{CE(sat)}$	–	–	0.4	V	I_F=20mA, I_C=0.1mA
	Response time	t_r • t_f	–	10	–	μs	V_{CC}=5V, I_F=20mA, R_L=100Ω

●Electrical and optical characteristic curves

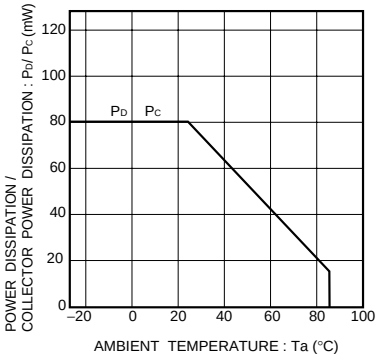


Fig.1 Power dissipation / collector power dissipation vs. ambient temperature

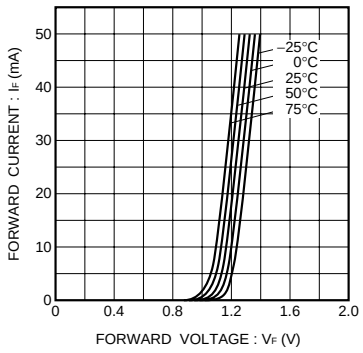


Fig.2 Forward current vs. forward voltage

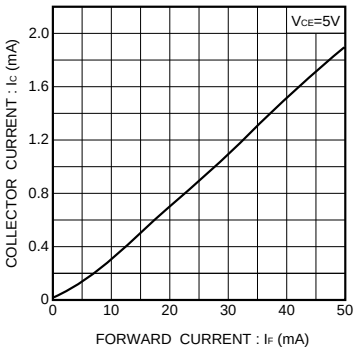


Fig.3 Collector current vs. forward current

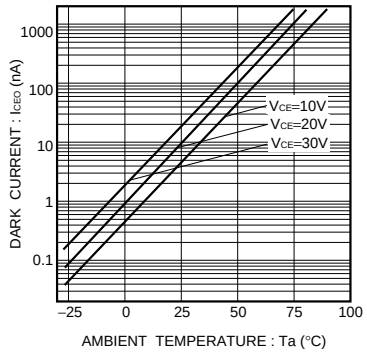


Fig.4 Dark current vs. ambient temperature

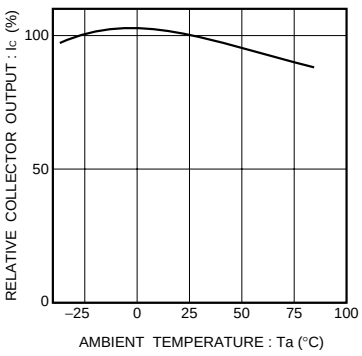


Fig.5 Relative output vs. ambient temperature

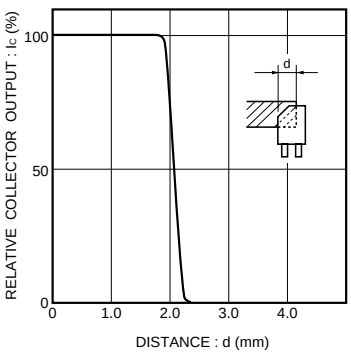


Fig.6 Relative output vs. distance

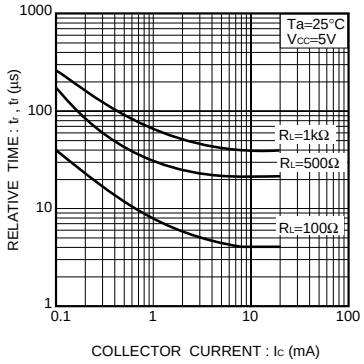


Fig.7 Response time vs. collector current

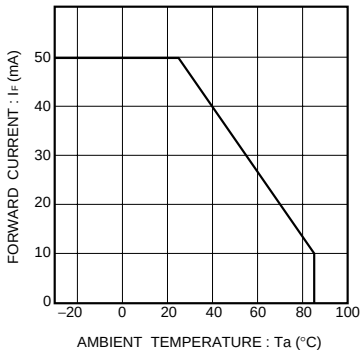


Fig.8 Forward current falloff

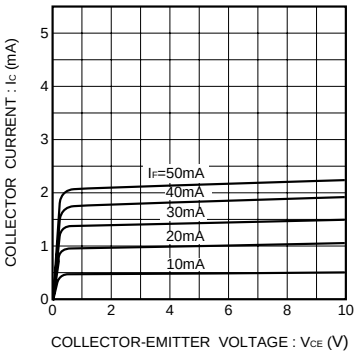
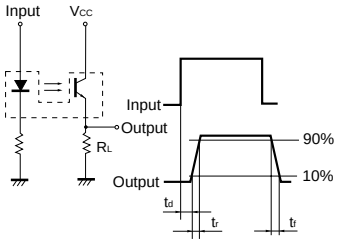


Fig.9 Output characteristics



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

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