

RPI-129B

Photointerrupter, Ultraminiature DIP type



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
Collector-emitter voltage	V_{CE0}	30	V
Emitter-collector voltage	V_{EC0}	4.5	V
Collector current	I_C	30	mA
Collector power dissipation	P_C	80	mW
Operating temperature	T_{op}	-25 to +85	°C
Storage temperature	T_{stg}	-30 to +85	°C

Applications

DSC(Digital steal camera)
DVC(Digital video camera)
Digital handy phone

Features

- 1) Ultraminiature DIP type.
- 2) Gap 1.2mm.

Electrical and optical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Forward voltage	V_f	-	1.3	1.6	V	$I_f=50mA$
Reverse current	I_R	-	10	10	μA	$V_R=5V$
Dark current	I_{CO}	-	0.5	0.5	μA	$V_{CE}=10V$
Peak sensitivity wavelength	λ_p	-	800	-	nm	-
Collector current	I_C	0.95	-	4.95	mA	$V_{CE}=5V, I_f=20mA$
Collector-emitter saturation voltage	$V_{CE(sat)}$	-	0.4	0.4	V	$I_f=20mA, I_C=0.1mA$
Response time						
Rise time	t_r	-	10	-	μs	$V_{CE}=5V, I_f=20mA, R_L=100\Omega$
Fall time	t_f	-	10	-	μs	$V_{CE}=5V, I_f=20mA, R_L=100\Omega$
Collector rank						
A	I_C	0.45	-	2.33	mA	$V_{CE}=5V, I_f=20mA$
B	I_C	0.95	-	4.95	mA	$V_{CE}=5V, I_f=20mA$
Infrared transfer characteristics						
Cut-off frequency	f_c	-	1	-	MHZ	$I_f=50mA$
Peak light emitting wavelength	λ_p	-	950	-	nm	* Non-coherent infrared light emitting diode used.
Response time	t_r+t_f	-	10	-	μs	$V_{CE}=5V, I_C=1mA, R_L=100\Omega$
Maximum sensitivity wavelength	λ_p	-	800	-	nm	* This product is not designed to be protected against electromagnetic wave.

Electrical and optical characteristics curves

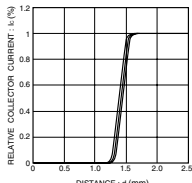


Fig.1 Relative output current vs. distance (I)

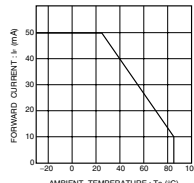


Fig.2 Forward current falloff

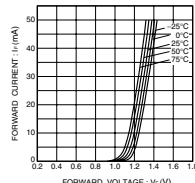


Fig.3 Forward current vs. forward voltage

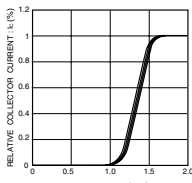


Fig.4 Relative output current vs. distance (II)

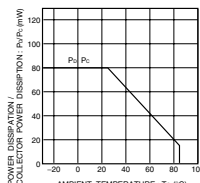


Fig.5 Power dissipation / collector power dissipation vs. ambient temperature

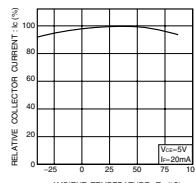


Fig.6 Relative output vs. ambient temperature

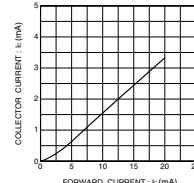


Fig.7 Collector current vs. forward current

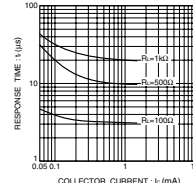


Fig.8 Response time vs. collector current

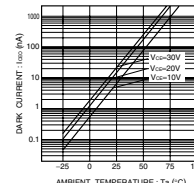


Fig.9 Dark current vs. ambient temperature

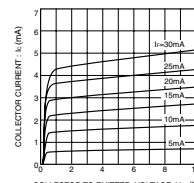


Fig.10 Output characteristics

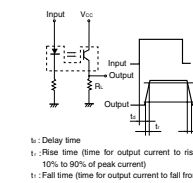
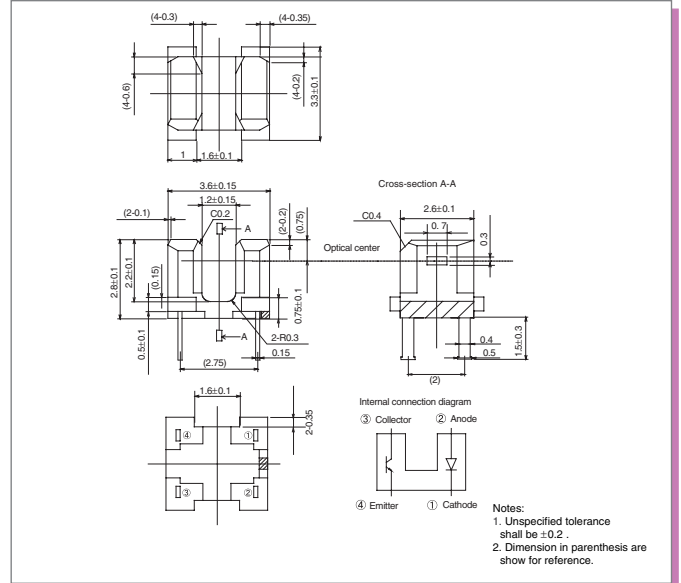


Fig.11 Response time measurement circuit

Dimensions (Unit : mm)



Notes:
1. Unspecified tolerance shall be ±0.2.
2. Dimension in parenthesis are show for reference.

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