

# RPI-129B

## Photointerrupter, Ultraminiature DIP type



### Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
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	$V_{ECO}$	4.5	V
Collector current	$I_C$	30	mA
Collector power dissipation	$P_C$	80	mW
Operating temperature	$T_{opr}$	-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	$I_F=50\text{mA}$
Reverse current	$I_R$	-	10	-	$\mu\text{A}$	$V_R=5\text{V}$
Dark current	$I_{CE0}$	-	-	0.5	$\mu\text{A}$	$V_{CE}=10\text{V}$
Peak sensitivity wavelength	$\lambda_P$	-	800	-	nm	-
Collector current	$I_C$	0.95	-	4.95	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	Rise time	$t_r$	-	10	$\mu\text{s}$	$V_{CC}=5\text{V}, I_F=20\text{mA}, R_L=100\Omega$
	Fall time	$t_f$	-	10	$\mu\text{s}$	
Collector rank	A	$I_C$	0.45	-	2.33	$V_{CE}=5\text{V}, I_F=20\text{mA}$
	B	$I_C$	0.95	-	4.95	
Cut-off frequency	$f_c$	-	1	-	MHz	$I_F=50\text{mA}$ * Non-coherent Infrared light emitting diode used.
Peak light emitting wavelength	$\lambda_P$	-	950	-	nm	-
Response time	$t_r \cdot t_f$	-	10	-	$\mu\text{s}$	$V_{CC}=5\text{V}, I_C=1\text{mA}, R_L=100\Omega$ * This product is not designed to be protected against electromagnetic wave.
	Maximum sensitivity wavelength	$\lambda_P$	-	800	nm	

### Electrical and optical characteristics curves

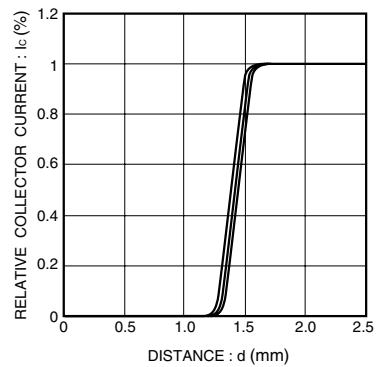


Fig.1 Relative output current vs. distance (I)

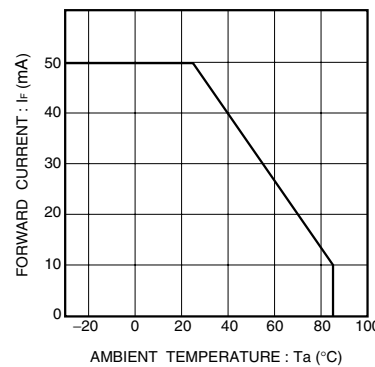


Fig.2 Forward current falloff

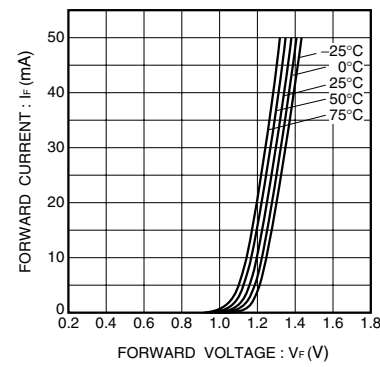


Fig.3 Forward current vs. forward voltage

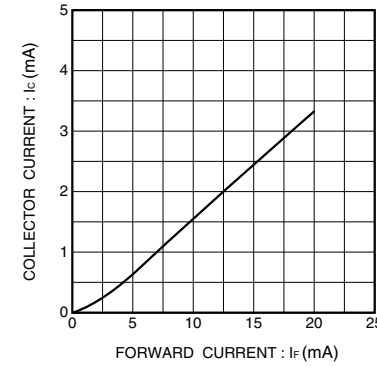


Fig.7 Collector current vs. forward current

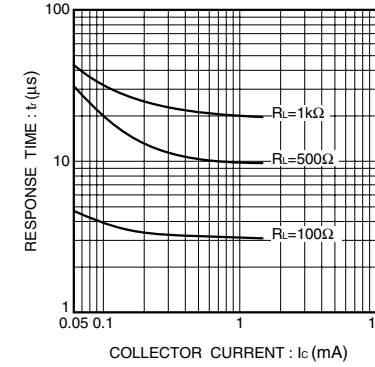


Fig.8 Response time vs. collector current

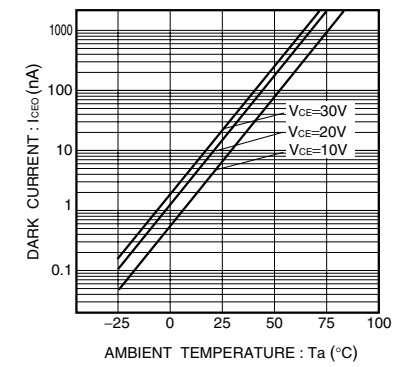


Fig.9 Dark current vs. ambient temperature

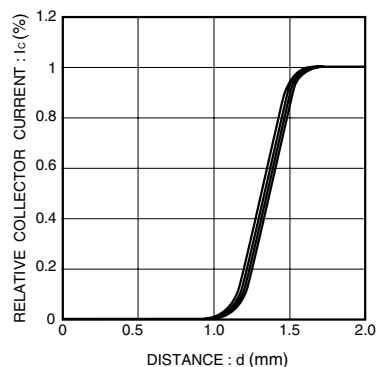


Fig.4 Relative output current vs. distance (II)

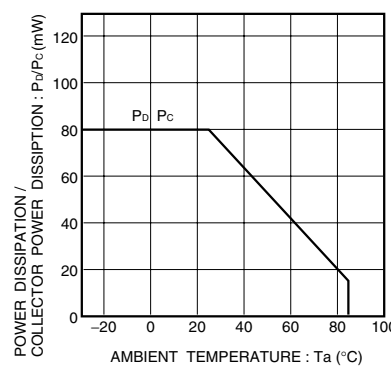


Fig.5 Power dissipation / collector power dissipation vs. ambient temperature

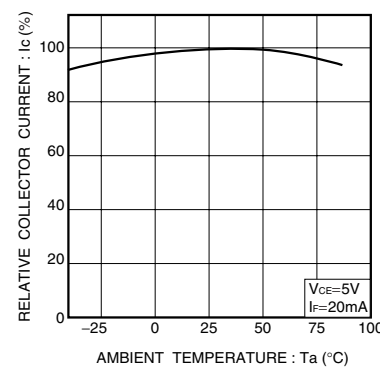


Fig.6 Relative output vs. ambient temperature

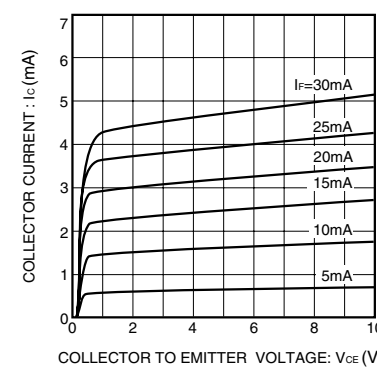


Fig.10 Output characteristics

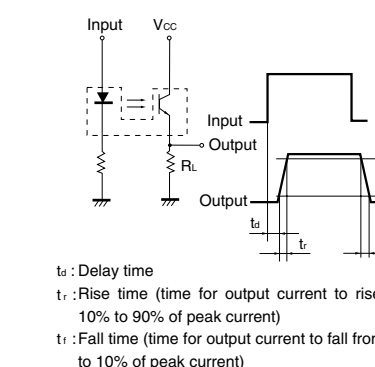
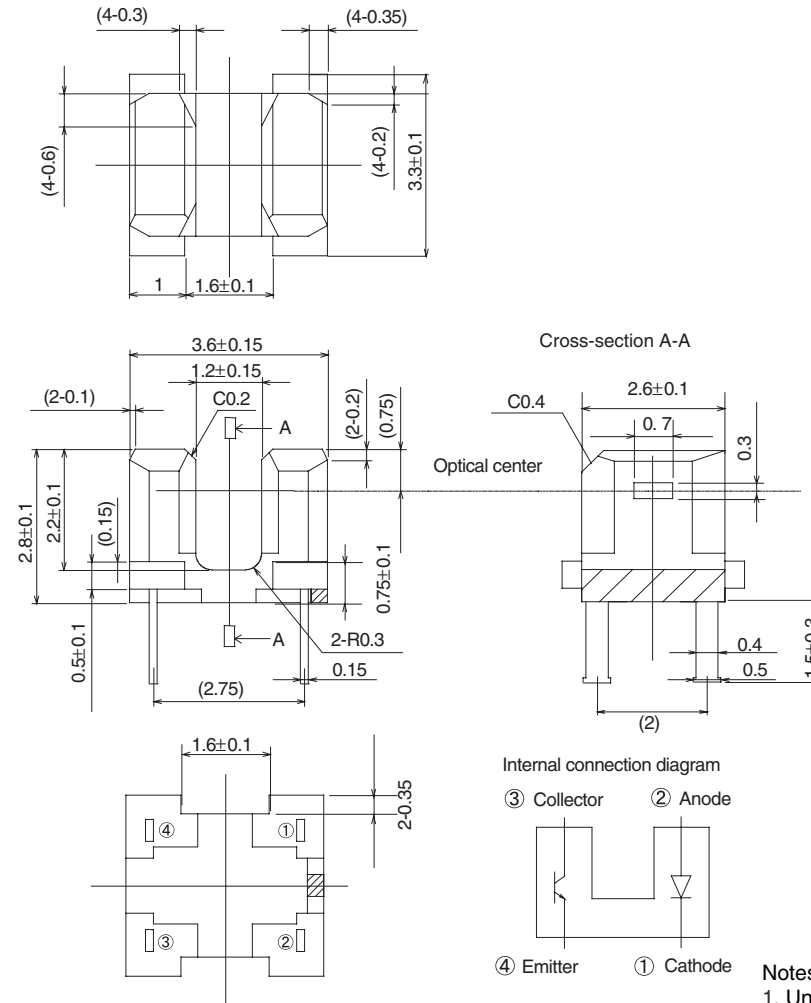


Fig.11 Response time measurement circuit

### Dimensions (Unit : mm)



- Notes:
1. Unspecified tolerance shall be  $\pm 0.2$ .
  2. Dimension in parenthesis are show for reference.

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