Transmission type Photointerrupters Eco-Friendry type

RPI-441C1E Datasheet

●Applications

• Printers

• Optical Control Equipment

• Amusement

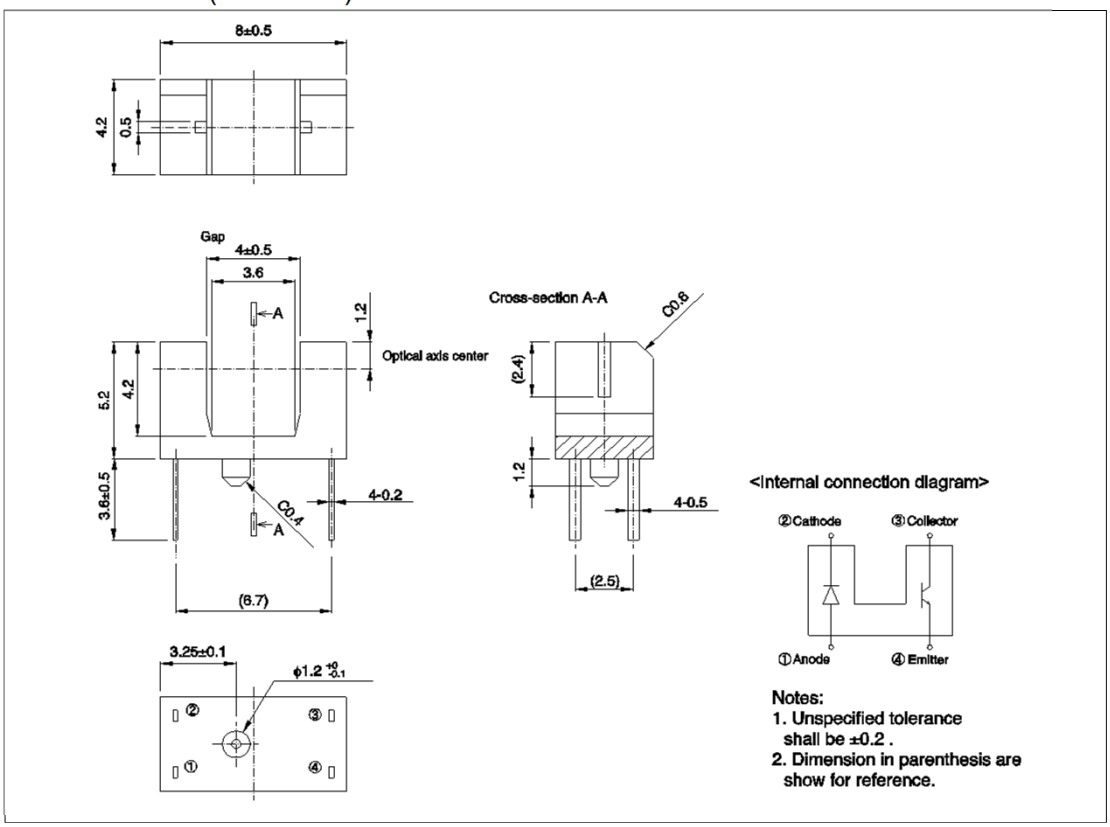
●Outline

●Features

1) Positioning pin results in high mounting accuracy

2) Gap4.0mm

●Dimensions (Unit : mm)



●Absolute maximum ratings (Ta = 25°C)

Parameter		Symbol	Value	Unit
Input (Infrared light emitting diode)	Forward current	I_F	35	mA
	Reverse voltage	V_R	5	V
	Power dissipation	P_D	70	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 dissipation	P_C	80	mW
Operating temperature		T_{opr}	−25 to +85	°C
Storage temperature		T_{stg}	−30 to +85	°C

●Electrical and optical characteristics (Ta = 25°C)

1) Input characteristics

Parameter	Symbol	Conditions	Values			Unit
			Min.	Typ.	Max.	
Forward voltage	V_F	I_F =10mA	-	1.4	1.7	V
Reverse current	I_R	V_R =5V	-	-	10	μA
Peak light emitting wavelength	λ_p	I_F =50mA	-	850	-	nm

∗ Non-coherent Infrared light emitting diode used.

2) Output characteristics

Parameter	Symbol	Conditions	Values			Unit
			Min.	Typ.	Max.	
Dark current	I_{CEO}	V_{CE} =10V	-	-	0.5	μA
Peak sensitivity wavelength	λ_p		-	800	-	nm

∗ This product is not designed to be protected against eledtromagnetic wave.

3) Transfer characteristics

Parameter		Symbol	Conditions	Values			Unit
				Min.	Typ.	Max.	
Collector current		I_C	V_{CE} =5V I_F =10mA	0.2	0.55	-	mA
Collector-emitter saturation voltage		$V_{CE(sat)}$	I_F =10mA I_C =0.1mA	-	-	0.4	V
Response time	Rise time	tr	V_{CC} =5V, I_F =10mA R_L=100Ω	-	10	-	μs
	Fall time	tf		-	10	-	

●Electrical and optical characteristics curves

Fig.1 Relative Output Current vs.Distance (I)

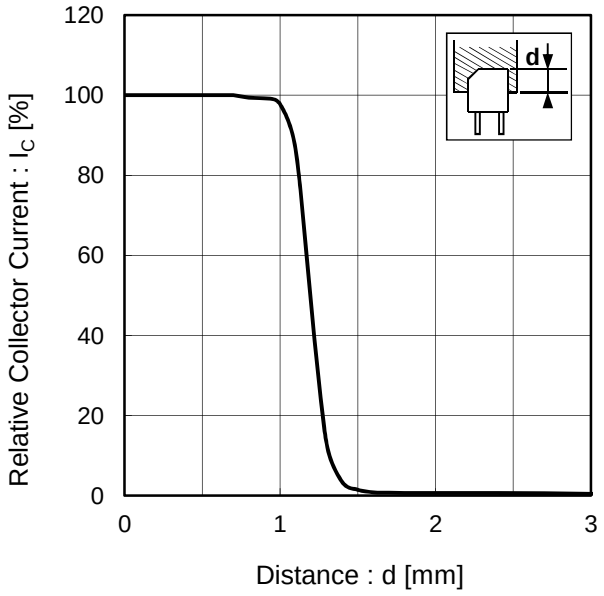


Fig.2 Relative Output Current vs.Distance (II)

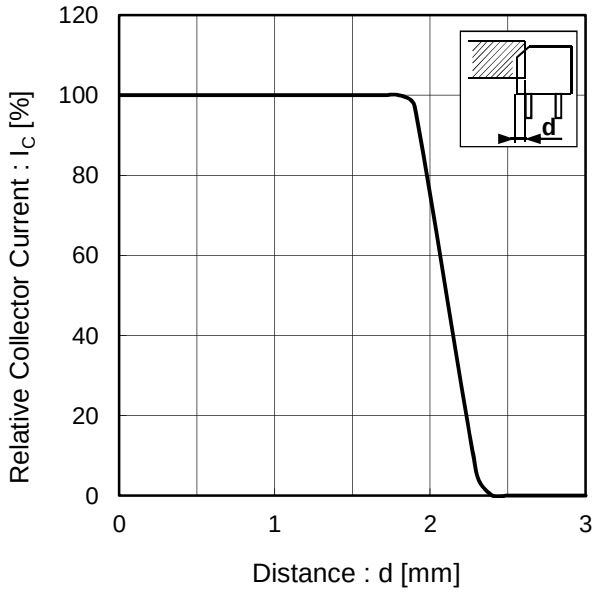


Fig.3 Forward Current Fall off

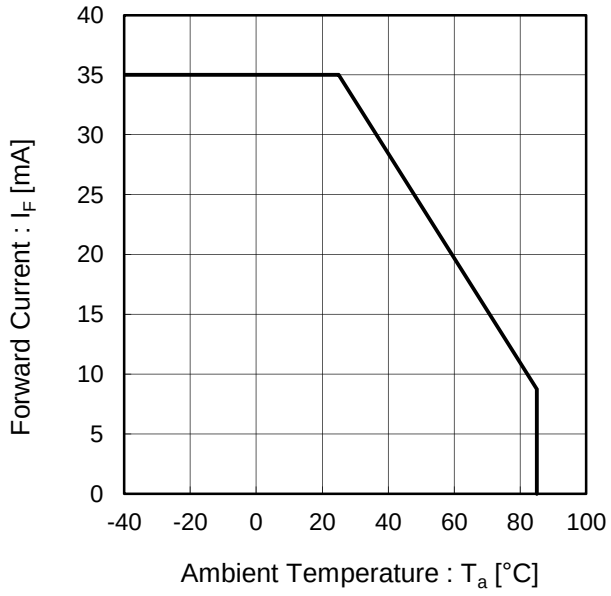
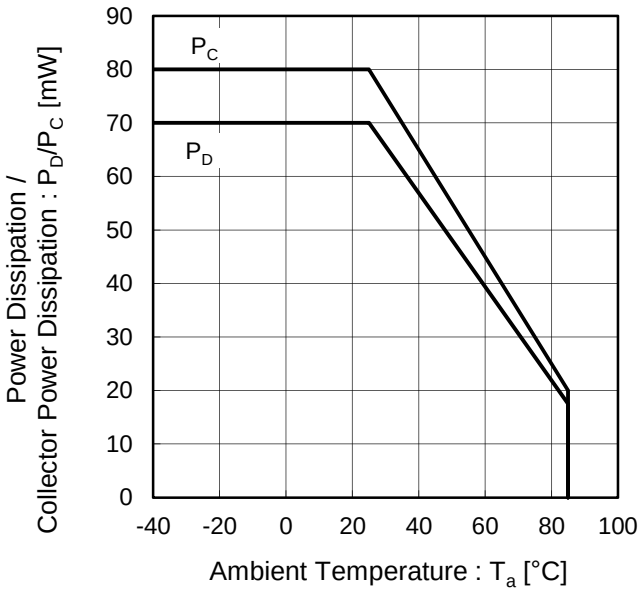


Fig.4 Power Dissipation / Collector Power Dissipation vs. Ambient Temperature



●Electrical and optical characteristics curves

Fig.5 Forward Current vs. Forward Voltage

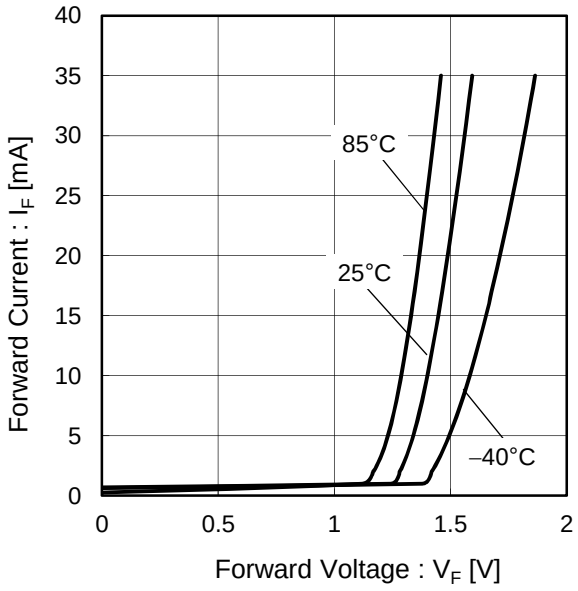


Fig.6 Collector Current vs. Forward Current

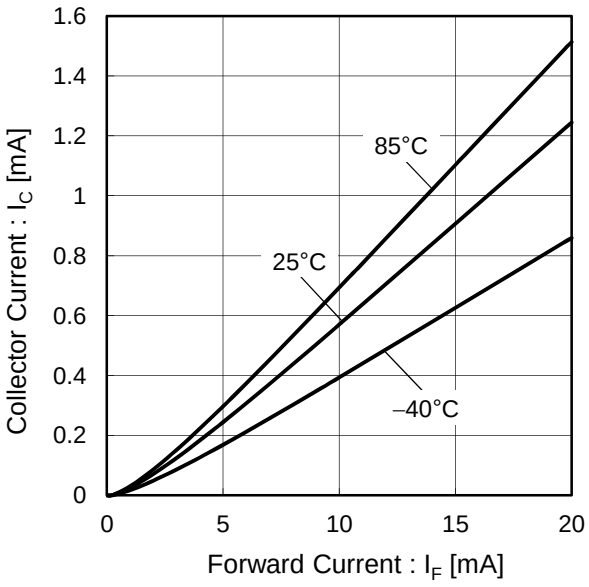


Fig.7 Relative Output vs. Ambient Temperature

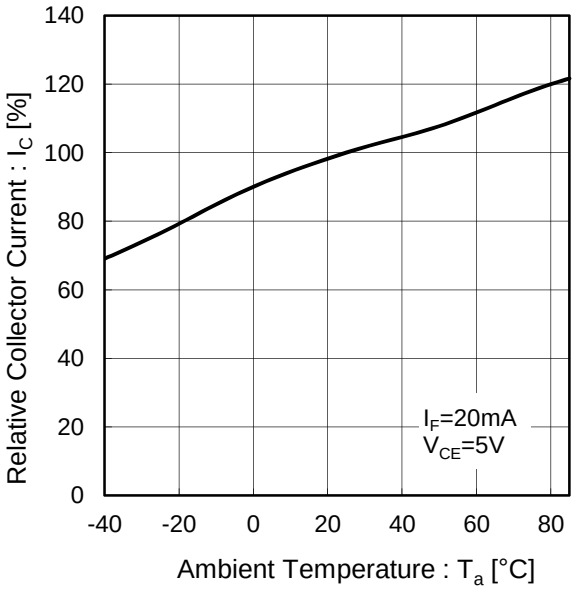
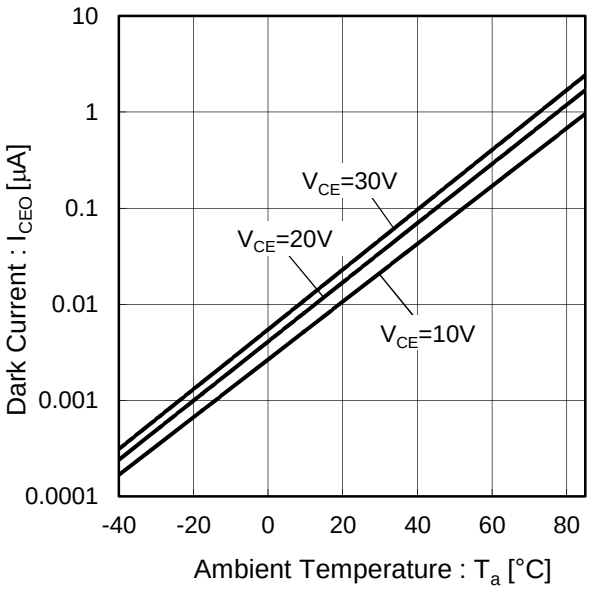
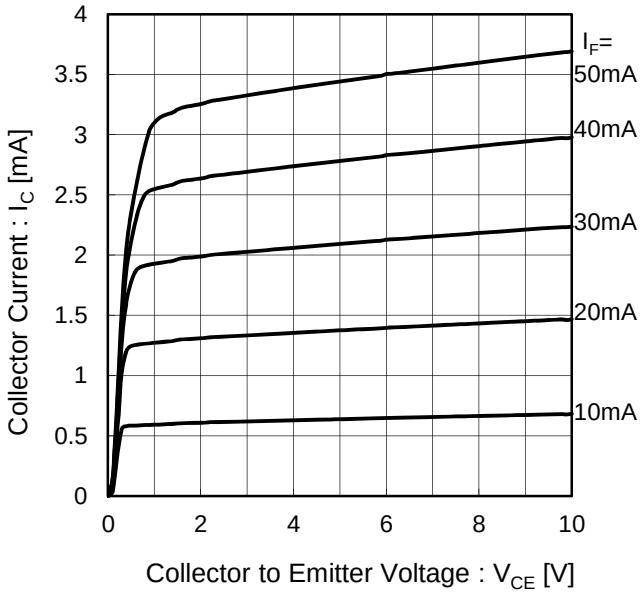


Fig.8 Dark Current vs. Ambient Temperature



●Electrical and optical characteristics curves

Fig.9 Output Characteristics



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