

RPI-579N1E

Photointerrupter, General type



Absolute maximum ratings (Ta=25°C)

Parameter		Symbol	Limits	Unit
Input (LED)	Forward current	IF	35	mA
	Reverse voltage	VR	5	V
	Power dissipation	PD	70	mW
Output (photo-transistor)	Collector-emitter voltage	VCEO	30	V
	Emitter-collector voltage	VECO	4.5	V
	Collector current	IC	30	mA
	Collector power dissipation	PC	80	mW
Operating temperature		Topr	-25 to +85	°C
Storage temperature		Tstg	-40 to +85	°C
Soldering temperture		Tsol	260 / 3 *	°C / s

* 1mm from the body bottom.

Electrical and optical characteristics (Ta=25°C)

Parameter			Symbol	Min.	Typ.	Max.	Unit	Conditions
Input characteristics	Forward voltage		V_F	—	1.4	1.7	V	$I_F=10\text{mA}$
	Reverse current		I_R	—	—	10	μA	$V_R=5\text{V}$
Output characteristics	Dark current		I_{CE0}	—	—	0.5	μA	$V_{CE}=10\text{V}$
	Peak sensitivity wavelength		λ_P	—	800	—	nm	—
Transfer characteristics	Collector current		I_C	0.5	—	—	mA	$V_{CE}=5\text{V}$, $I_F=10\text{mA}$
	Collector-emitter saturation voltage		$V_{CE(sat)}$	—	0.1	0.5	V	$I_F=10\text{mA}$, $I_C=0.1\text{mA}$
	Response time	Rise time	t_r	—	10	—	μs	$V_{CC}=5\text{V}$, $I_F=10\text{mA}$, $R_L=100\Omega$
		Fall time	t_f	—	10	—	μs	
Infrared light emitter diode	Peak light emitting wavelength		λ_P	—	850	—	nm	$I_F=10\text{mA}$ * Non-coherent Infrared light emitting diode used.
Photo transistor	Response time		$t_r \cdot t_f$	—	10	—	μs	$V_{CC}=5\text{V}$, $I_C=1\text{mA}$, $R_L=100\Omega$ * This product is not designed to be protected against electromagnetic wave.
	Maximum sensitivity wavelength		λ_P	—	800	—	nm	—

Electrical and optical characteristics curves

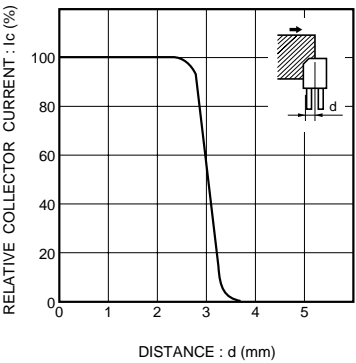


Fig.1 Relative output vs. distance (I)

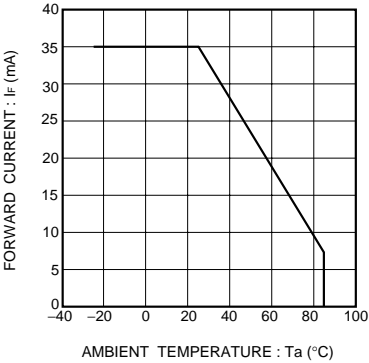


Fig.2 Forward current falloff

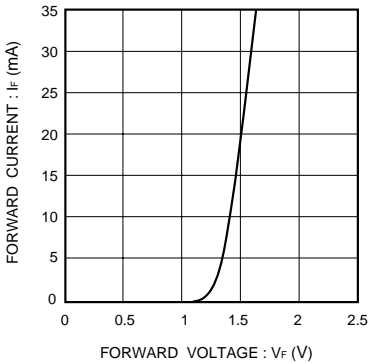


Fig.3 Forward current vs. forward voltage

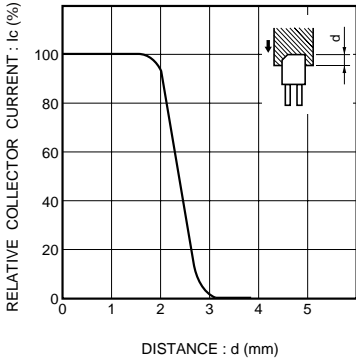


Fig.4 Relative output vs. distance (II)

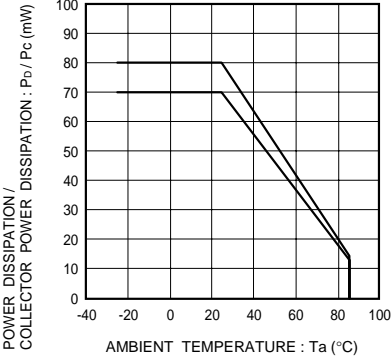


Fig.5 Power dissipation / collector power dissipation vs. ambient temperature

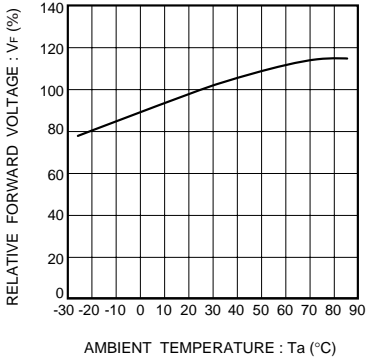


Fig.6 Relative output vs. ambient temperature

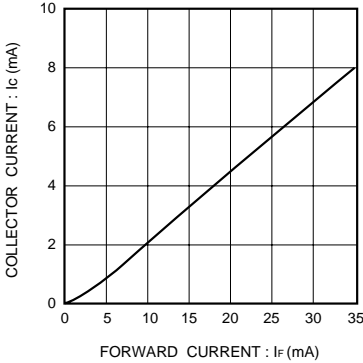


Fig.7 Collector current vs. forward current

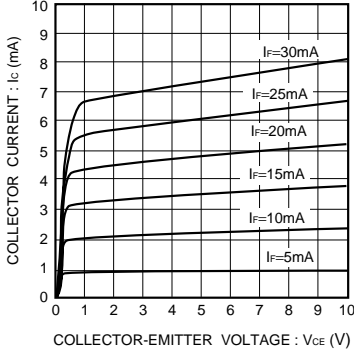


Fig.10 Output characteristics

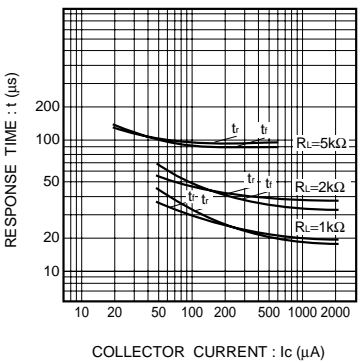


Fig.8 Response time vs. collector current

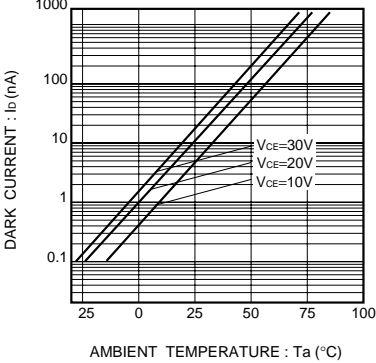
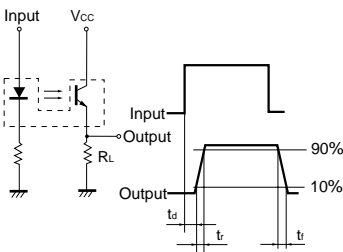


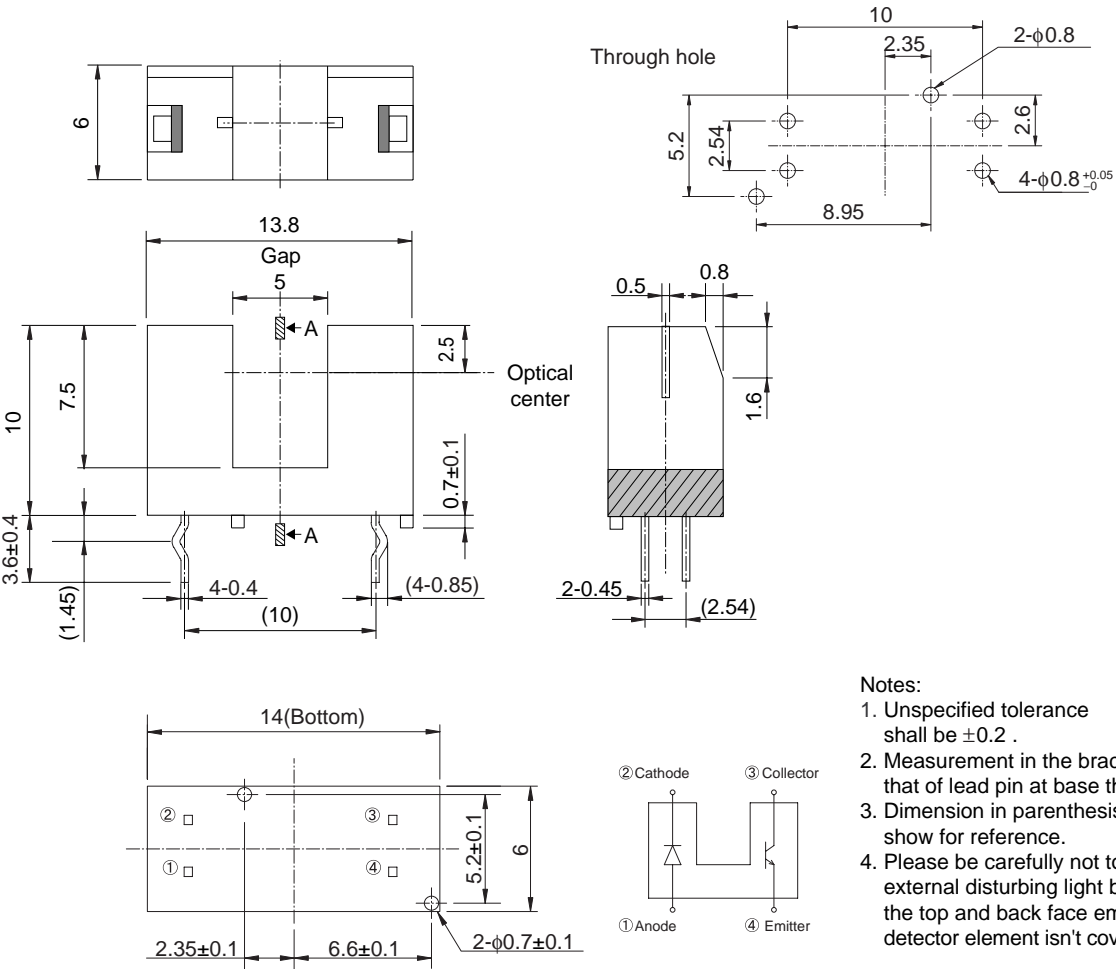
Fig.9 Dark current vs. ambient temperature



td : Delay time
tr : Rise time (time for output current to rise from 10% to 90% of peak current)
tf : Fall time (time for output current to fall from 90% to 10% of peak current)

Fig.11 Response time measurement circuit

Dimensions (Unit : mm)



- Notes:
1. Unspecified tolerance shall be ±0.2 .
 2. Measurement in the bracket is that of lead pin at base the mold.
 3. Dimension in parenthesis are show for reference.
 4. Please be carefully not to receive external disturbing light because the top and back face emitter and detector element isn't covered by case.

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