

Photointerrupter, General type



Absolute maximum ratings (Ta=25°C)

Parameter		Symbol	Limits	Unit
Input (LED)	Forward current	IF	50	mA
	Reverse voltage	VR	5	V
	Power dissipation	PD	80	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/sec

* 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	—	1.3	1.6	V	$I_F=50\text{mA}$
	Reverse current		I_R	—	—	10	μA	$V_R=5\text{V}$
	Dark current		I_{CEO}	—	—	0.5	μA	$V_{CE}=10\text{V}$
Output characteristics	Peak sensitivity wavelength		λ_P	—	800	—	nm	—
	Collector current		I_C	0.5	—	—	mA	$V_{CE}=5\text{V}$, $I_F=20\text{mA}$
	Collector-emitter saturation voltage		$V_{CE(sat)}$	—	0.1	0.5	V	$I_F=20\text{mA}$, $I_C=0.5\text{mA}$
Transfer characteristics	Response time	Rise time	t_r	—	10	—	μs	$V_{CC}=5\text{V}$, $I_F=20\text{mA}$, $R_L=100\Omega$
		Fall time	t_f	—	10	—	μs	
	Cut-off frequency		f_c	—	1	—	MHz	$I_F=50\text{mA}$
Infrared light emitter diode	Peak light emitting wavelength		λ_P	—	950	—	nm	* Non-coherent Infrared light emitting diode used.
	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.
Photo transistor	Maximum sensitivity wavelength		λ_P	—	800	—	nm	—

Electrical and optical characteristics curves

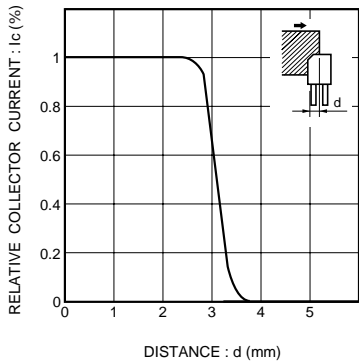


Fig.1 Relative output vs. distance (I)

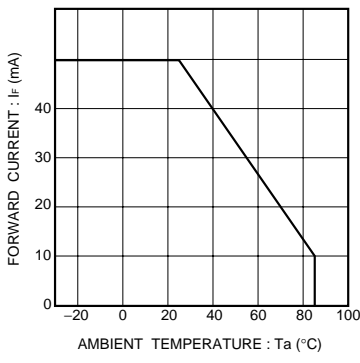


Fig.2 Forward current falloff

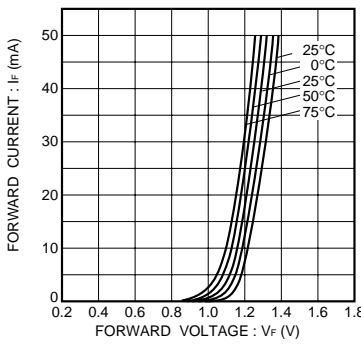


Fig.3 Forward current vs. forward voltage

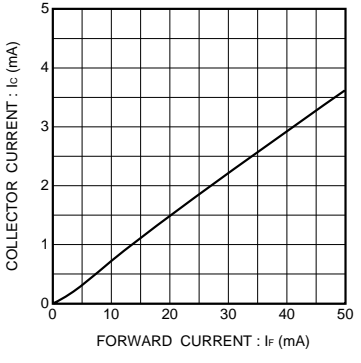


Fig.7 Collector current vs. forward current

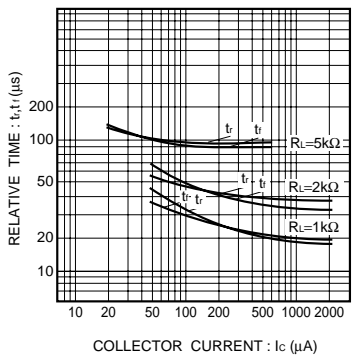


Fig.8 Response time vs. collector current

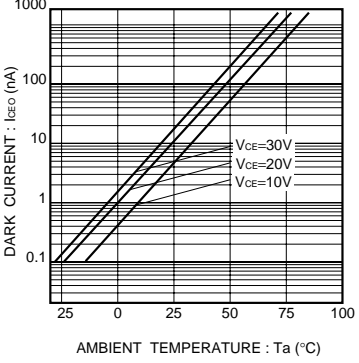


Fig.9 Dark current vs. ambient temperature

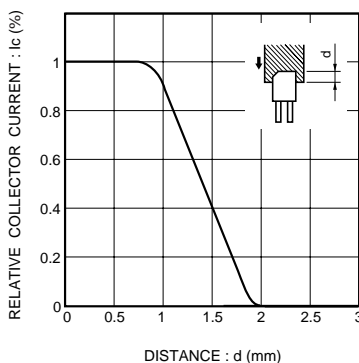


Fig.4 Relative output vs. distance (II)

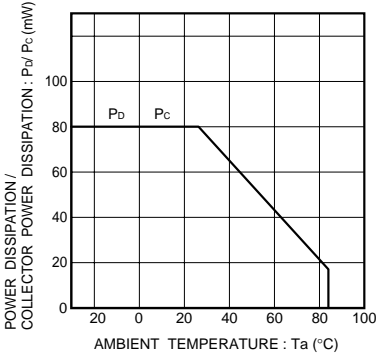


Fig.5 Power dissipation / collector power dissipation vs. ambient temperature

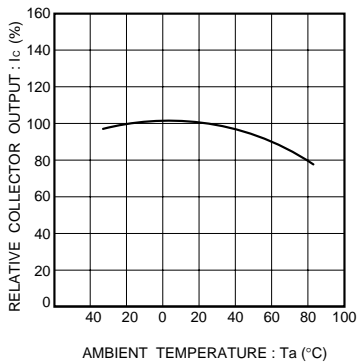


Fig.6 Relative output vs. ambient temperature

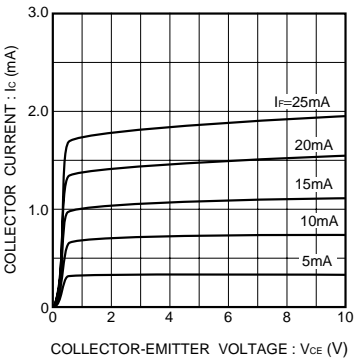


Fig.10 Output characteristics

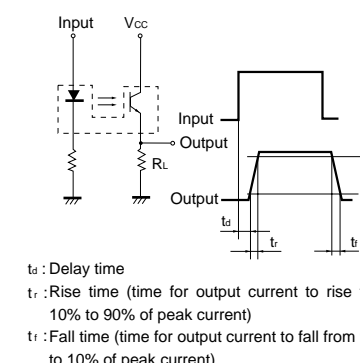


Fig.11 Response time measurement circuit

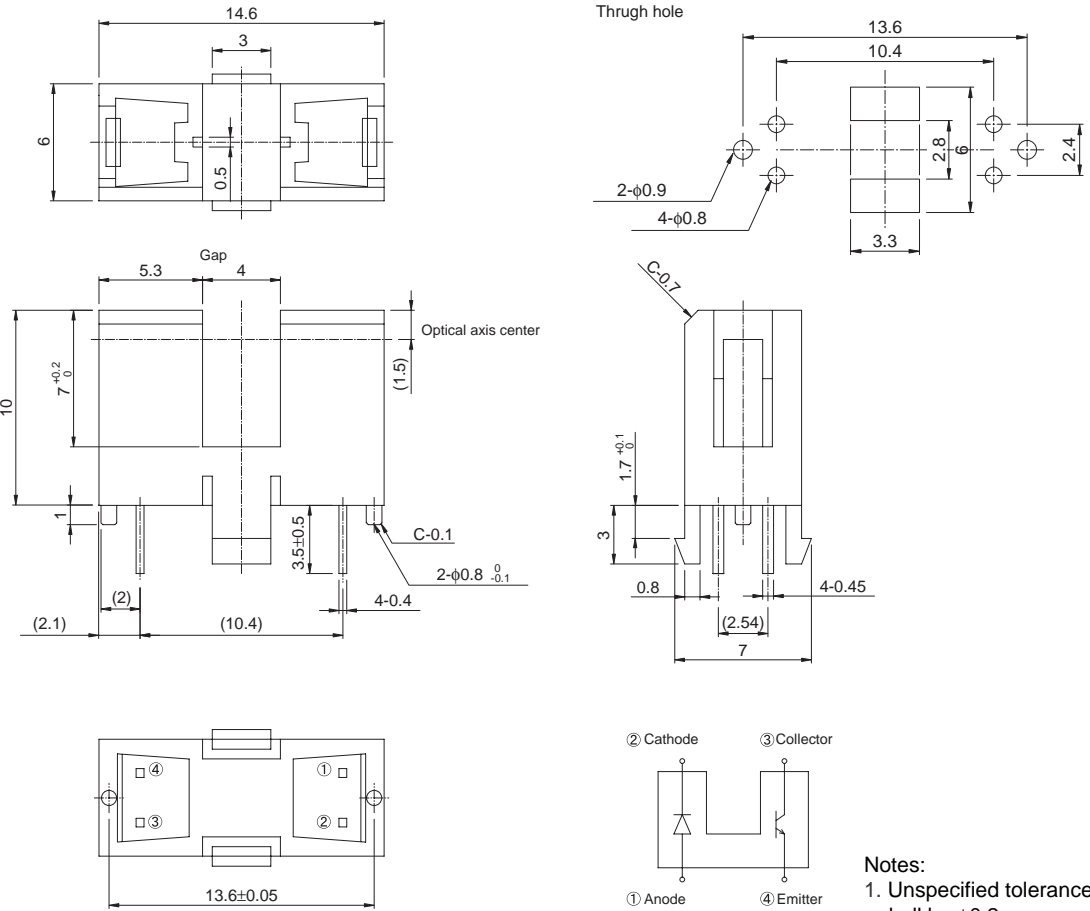
Applications

Printers
Facsimiles
AV equipment

Features

- 1) With a hook.
- 2) Gap 4mm.

External dimensions (Unit : mm)



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

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