

Photointerrupter, Small 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
Power supply voltage	V_{CC}	7	V
Output current	I_o	10	mA
Power dissipation	P_D	80	mW
Operating temperature	T_{opr}	-20 to +60	°C
Storage temperature	T_{stg}	-40 to +100	°C

Applications

Optical control equipment

Features

- 1) Small slit width (0.3mm) for high precision.
- 2) Fast response.
- 3) Built-in visible light filter.

Electrical and optical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Forward voltage	V_f	-	1.1	1.3	V	$I_f=10mA$
Reverse current	I_R	-	-	10	μA	$V_R=5V$
Power supply voltage	V_{CC}	2.0	-	7.0	V	-
Output low level voltage	V_{OL}	-	0.08	0.35	V	$V_{CC}=3V, I_{OL}=2mA$
Output high level voltage	V_{OH}	2.8	-	3.0	V	$V_{CC}=3V, I_{OH}=0mA$
Low level power supply current	I_{CCL}	-	0.35	1.5	mA	$V_{CC}=3V, I_f=5mA$
High level power supply current	I_{CCH}	-	0.35	1.5	mA	$V_{CC}=3V, I_f=0mA$
High → Low Threshold input current	I_{FH}	0.25	-	2.5	mA	$V_{CC}=3V$
Hysteresis	I_{FH}/I_{FL}	0.4	0.7	0.9	-	$V_{CC}=3V$
Low → High Propagation delay time	t_{PHL}	-	22	66	μs	$V_{CC}=3V, I_f=5mA, R_L=100\Omega$
High → Low Propagation delay time	t_{PLH}	-	5.5	16	μs	
Rise time	t_r	-	5	15	μs	
Fall time	t_f	-	0.05	0.15	μs	
Cut-off frequency	f_c	-	1	-	MHz	$I_f=50mA$ * Non-coherent Infrared light emitting diode used.
Peak light emitting wavelength	λ_P	-	950	-	nm	
Response time	t_r	-	5	15	μs	$V_{CC}=3V, I_f=5mA, R_L=100\Omega$ * This product is not designed to be protected against electromagnetic wave.
	t_f	-	0.05	0.15	μs	

Electrical and optical characteristics curves

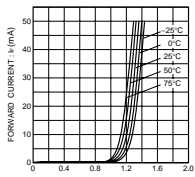


Fig.1 Forward current vs. forward voltage

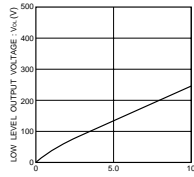


Fig.2 Low level output voltage vs. low level output current

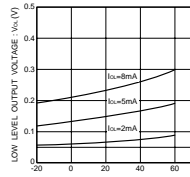


Fig.3 Low level output voltage vs. ambient temperature

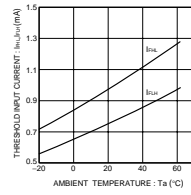


Fig.4 Threshold input current vs. ambient temperature

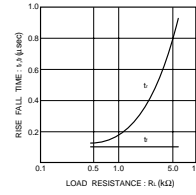


Fig.5 Response time vs. load resistance

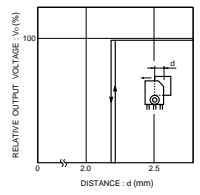


Fig.6 Relative output voltage vs. distance characteristics

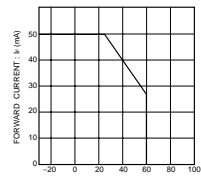


Fig.7 Forward current falloff

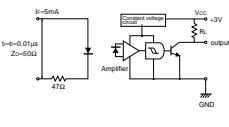
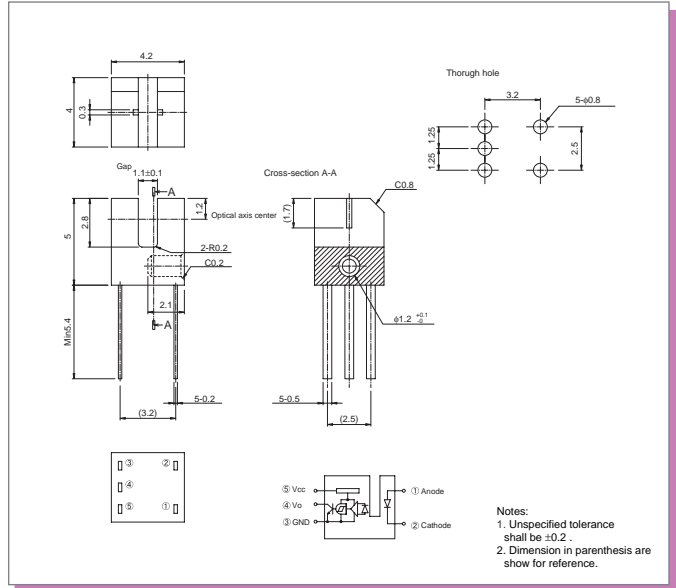


Fig.8 Response time measurement circuit

External dimensions (Unit : mm)



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

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