

High Reliability Digital Output IC

OPIC Photocoupler

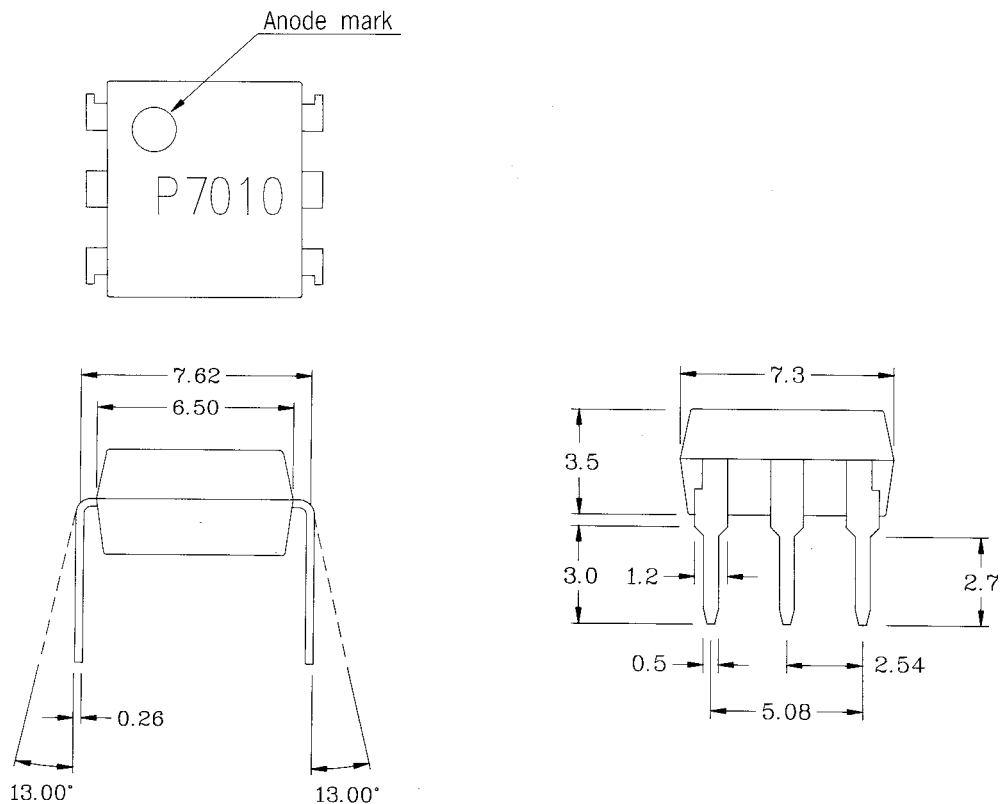
● Features

- 1.High sensitivity
- 2.TTL and LSTTL compatible output
- 3.Operating supply voltage range
(Vcc 4.5V to 17V)
- 4.Low output current dissipation
(IcCL : MAX. 3.8mA)
- 5.High Isolation voltage between input and output (Viso : 5,000Vrms)

● Applications

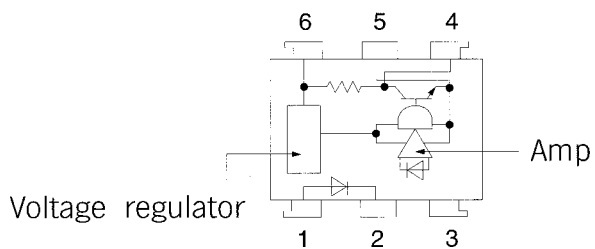
- 1.Computer terminals
- 2.High speed line receivers
- 3.Interfaces with various data transmission equipment
- 4.Switing regulators

1. OUTSIDE DIMENSION : UNIT (mm)



TOLERANCE : $\pm 0.1\text{mm}$
SCALE 4=1

2. SCHEMATIC : TOP VIEW



● Absolute Maximum Ratings

(Ta=25°C)

Parameter		Symbol	Rating	Unit
Input	Forward current	I _F	50	mA
	Peak forward current	I _{FM}	1	A
	Reverse voltage	V _R	6	V
	Power dissipation	P _D	70	mW
Output	Supply voltage	V _{CC}	-0.5 to 17	V
	Output current	I _O	50	mA
	Power dissipation	P _O	150	mW
Total power dissipation		P _{tot}	170	mW
Isolation voltage 1 minute		V _{iso}	5000	V _{rms}
Operating temperature		T _{opr}	-25 to +85	°C
Storage temperature		T _{stg}	-40 to +125	°C
Soldering temperature 10 seconds		T _{sol}	260	°C

● Electro-optical Characteristics

(Ta=25°C)

Parameter		Symbol	Conditions	MIN	TYP	MAX	Unit	
Input	Forward voltage	V _F	I _F =20mA	-	1.2	1.4	V	
	Peak forward voltage	V _{FM}	I _{FM} =0.5A	-	-	3.5	V	
	Reverse current	I _R	V _R =4V	-	-	10	μA	
	Terminal capacitance	C _t	V=0, f=1kHz	-	30	-	pF	
Output	Operating supply voltage	V _{CC}		4.5	-	17	V	
	Low level output voltage	V _{OL}	I _{OL} =16mA, V _{CC} =5V, I _F =0	-	0.15	0.4	V	
	High level output voltage	V _{OH}	V _{CC} =5V, I _F =1mA	3.5	-	-	V	
	Low level supply current	I _{CCL}	V _{CC} =5V, I _F =0	-	1.7	3.8	mA	
	High level supply current	I _{CCH}	V _{CC} =5V, I _F =1mA	-	0.7	2.2	mA	
Transfer characteristics	"High→Low" Threshold input current	I _{FHL}	V _{CC} =5V, R _L =280Ω	0.1	0.4	-	mA	
	"Low→High" Threshold input current	I _{FLH}	V _{CC} =5V, R _L =280Ω	-	0.5	1.0	mA	
	Hysteresis	I _{FHL} /I _{FLH}	V _{CC} =5V, R _L =280Ω	-	0.7	-	-	
	Isolation resistance	R _{ISO}	Ta=25°C, DC5000V	5X10 ¹⁰	10 ¹¹	-	Ω	
	Response time	"High→Low" propagation delay time	t _{PHL}	Ta=25°C, V _{CC} =5V I _F =1mA, R _L =280Ω	-	5	15	μs
		"Low→High" propagation delay time	t _{PLH}		-	3	9	
		Fall time	t _f		-	0.05	0.5	
		Rise time	t _r		-	0.1	0.5	

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Fig 1 Low Level Output Current vs. Ambient Temperature

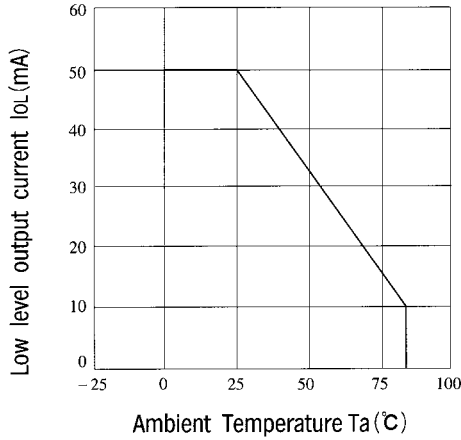


Fig 2 Power Dissipation vs. Ambient Temperature

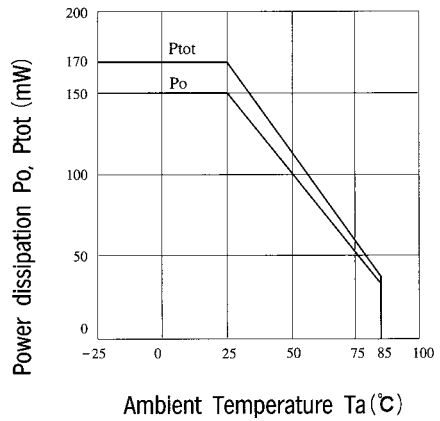


Fig 3 Rise Time, Fall Time vs. Load Resistance

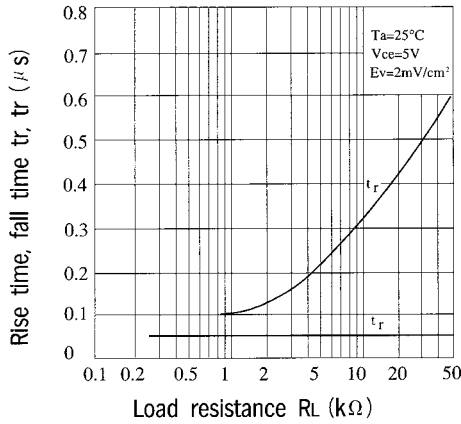


Fig 4 Forward Current vs. Forward Voltage

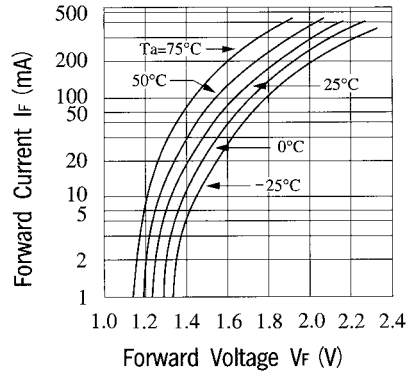


Fig 5 Supply Current vs. Ambient Temperature

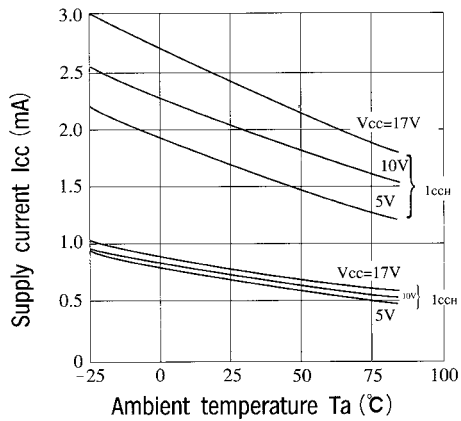


Fig 6 Low Level Output Voltage vs. Ambient Temperature

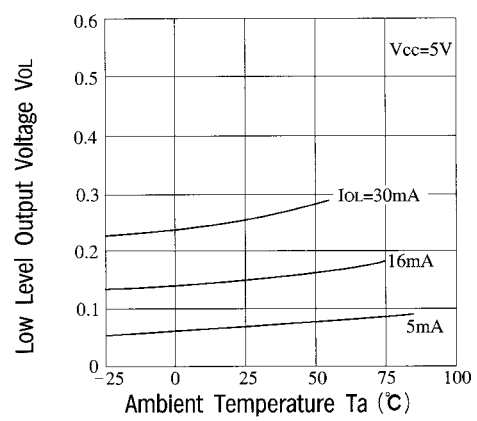


Fig. 7 Rise Time, Fall Time vs. Load Resistance

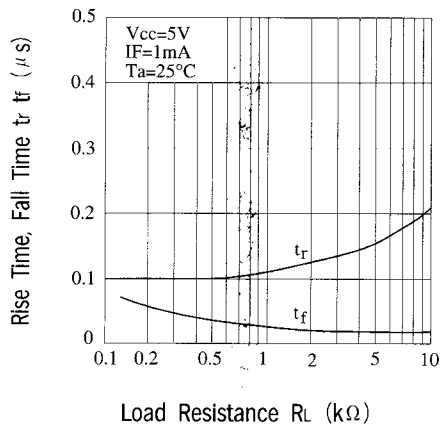


Fig. 8 Low Level Output Voltage vs. Low Level Output Current

