High Reliability Digital Output IC

OPIC Photocoupler

● Features

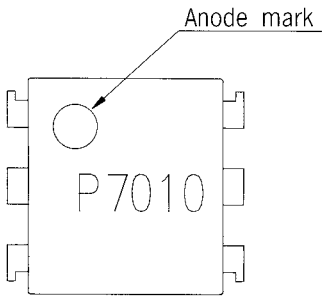
1. High sensitivity
2. TTL and LSTTL compatible output
3. Operating supply voltage range
   (Vcc 4.5V to 17V)
4. Low output current dissipation
   (ICCL : MAX. 3.8mA)
5. High isolation voltage between input and output (Viso : 5,000Vrms)

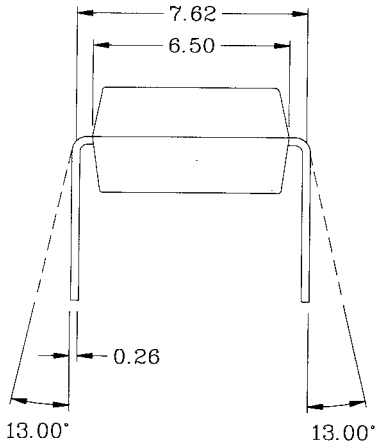
● Applications

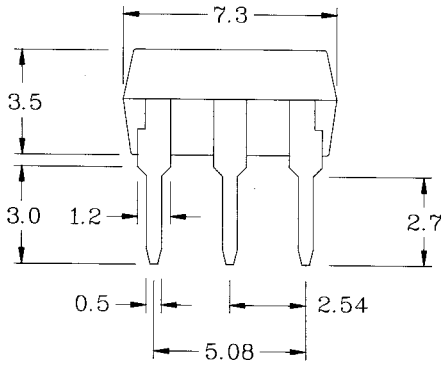
1. Computer terminals
2. High speed line receivers
3. Interfaces with various data transmission equipment
4. Switing regulators

65 Shark River Road, Neptune, New Jersey 07753-7423
Tel: 732-922-6333 Fax: 732-922-6363 E-Mail: globalcomponents@msn.com

1. OUTSIDE DIMENSION : UNIT (mm)

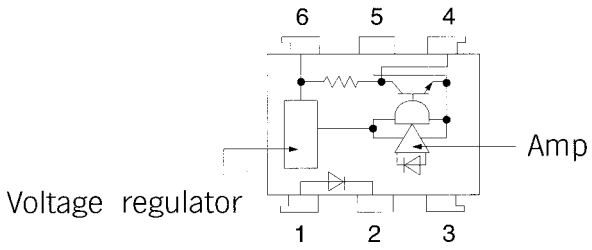






TOLERANCE : ±0.1mm
SCALE 4=1

2. SCHEMATIC : TOP VIEW



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● Absolute Maximum Ratings (Ta=25℃)

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	Vrms
Operating temperature		T_{opr}	-25 to +85	℃
Storage temperature		T_{stg}	-40 to +125	℃
Soldering temperature 10 seconds		T_{sol}	260	℃

● Electro-optical Characteristics (Ta=25℃)

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℃, DC5000V	$5X10^{10}$	10^{11}	-	Ω
	Response time	"High→Low" propagation delay time	t_{PHL}	Ta=25℃, 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

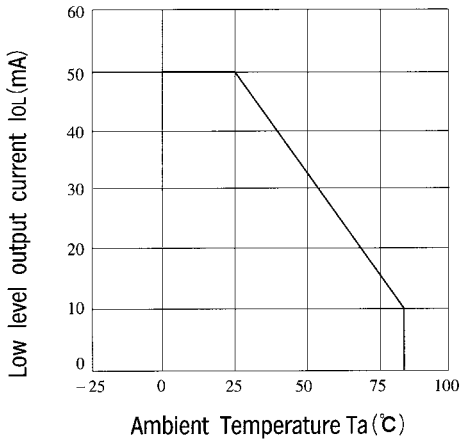

Fig. 2 Power Dissipation vs. Ambient Temperature

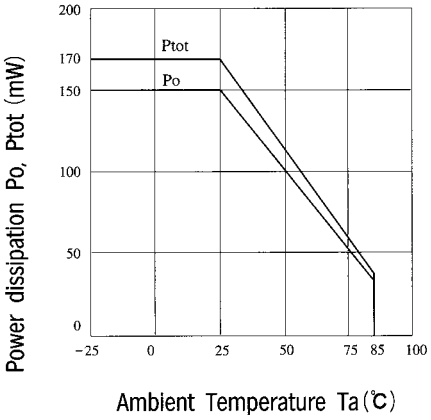

Fig. 3 Rise Time, Fall Time vs. Load Resistance

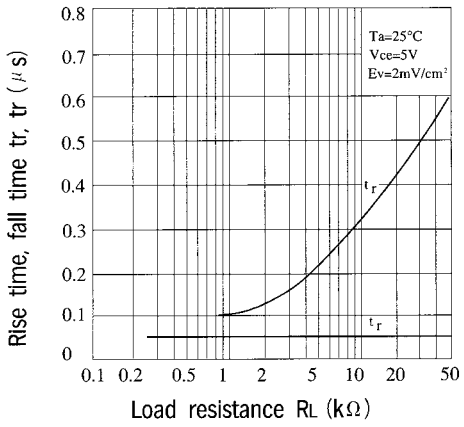

Fig. 4 Forward Current vs. Forward Voltage

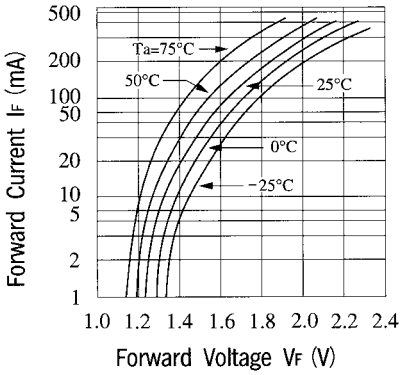

Fig. 5 Supply Current vs. Ambient Temperature

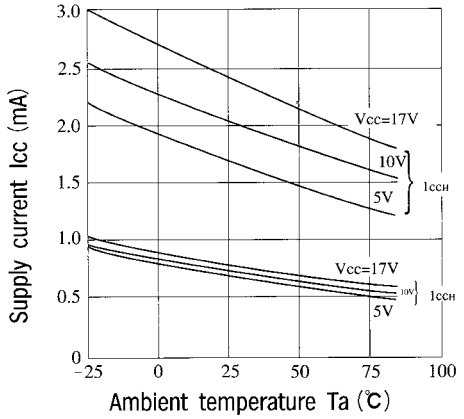

Fig. 6 Low Level Output Voltage vs. Ambient Temperature

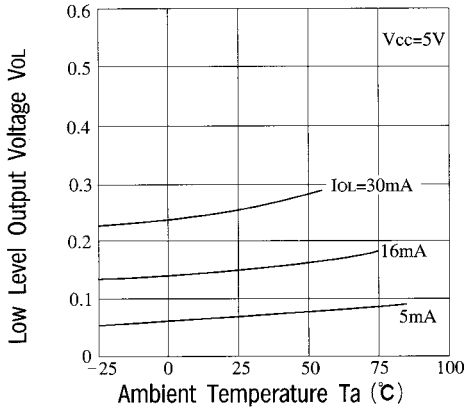

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Fig. 7 Rise Time, Fall Time vs. Load Resistance

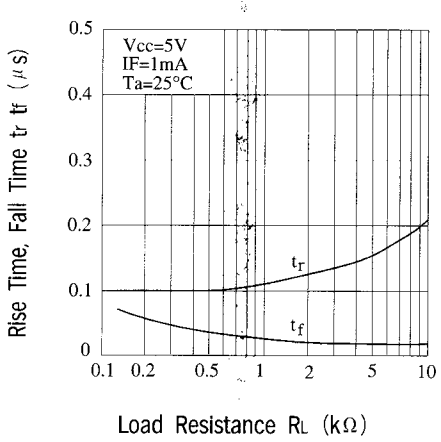
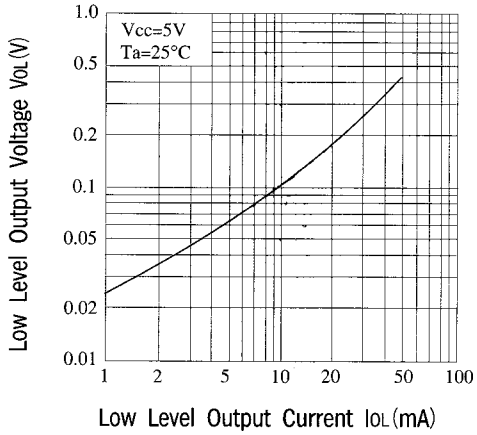


Fig. 8 Low Level Output Voltage vs. Low Level Output Current



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