

High Reliability Photocoupler

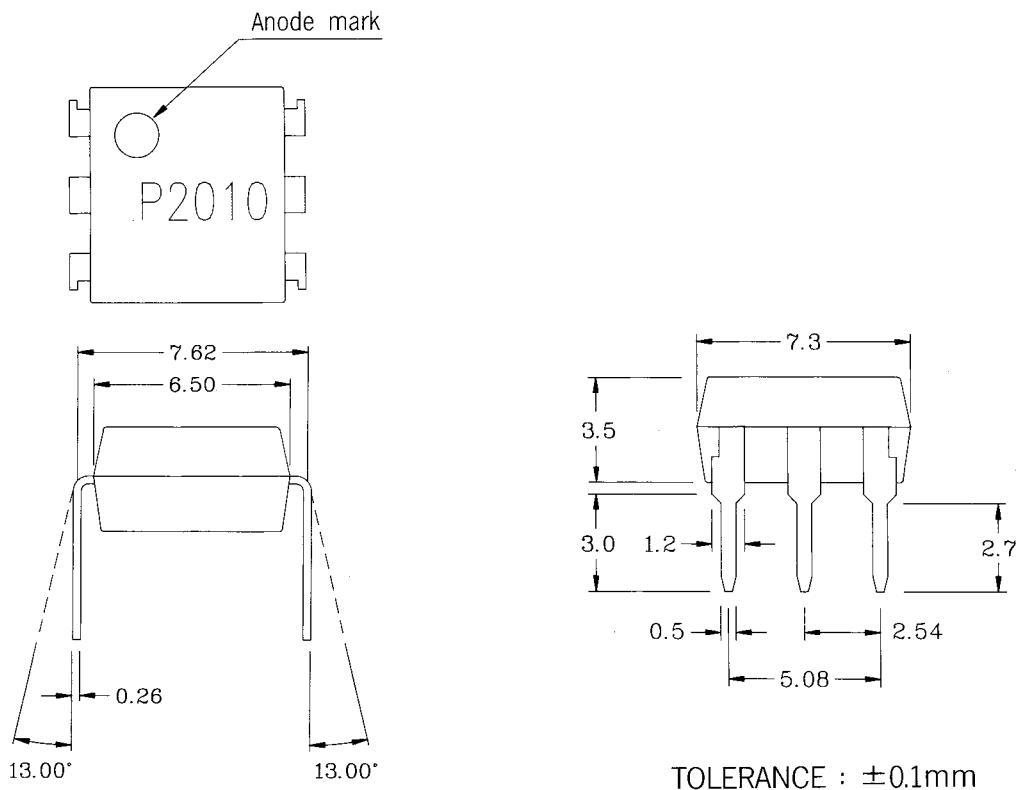
● Features

1. Current transfer ratio
CTR : MIN.60 at I_i=2mA V_{ce}=5V
2. High isolation voltage between input and output (V_{iso}: 5000Vrms).
3. Compact dual-in-line package.

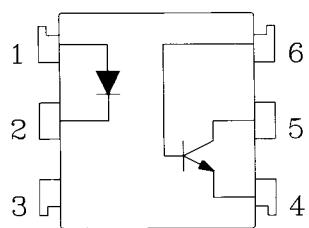
● Applications

1. Registers, copiers, automatic vending machines.
2. System appliances, measuring instruments.
3. Computer terminals, programmable controllers.
4. Communications, telephone, etc.
5. Electric home appliances, such as oil fan heaters, Microwave oven, Washer, Refrigerator, Air conditioner, etc.
6. Medical instruments, physical and chemical equipment.
7. Signal transmission between circuits of different potentials and impedances.
8. Facsimile equipment, Audio, Video.
9. Switching power supply, Laser beam printer.

1. OUTSIDE DIMENSION : UNIT (mm)



2. SCHEMATIC : TOP VIEW



1. Anode
2. Cathode
3. NC
4. Emitter
5. Collector
6. Base

● 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	Collector-emitter voltage	V _{C EO}	60	V
	Emitter-collector voltage	V _{E CO}	6	V
	Collector-base voltage	V _{C BO}	60	V
	Emitter-base voltage	V _{E BO}	6	V
	Collector current	I _C	50	mA
	Collector power dissipation	P _C	150	mW
Total power dissipation		P _{tot}	200	mW
Isolation voltage 1 minute		V _{Iso}	5000	Vrms
Operating temperature		T _{opr}	-30 to +100	°C
Storage temperature		T _{stg}	-55 to +125	°C
Soldering temperature 10 seconds		T _{sol}	260	°C

● Electro-optical Characteristics

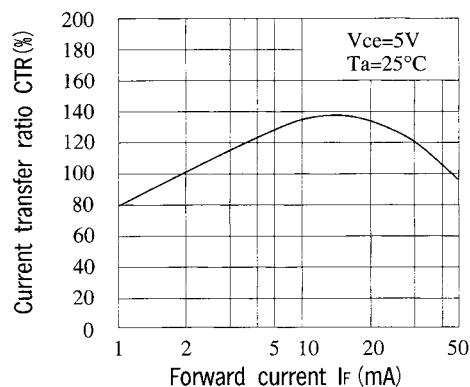
(Ta=25°C)

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	μ A
	Terminal capacitance	C _t	V=0, f=1kHz	-	30	-	pF
Output	Collector dark current	I _{C EO}	V _{CE} =20V	-	-	10 ⁻⁷	A
Transfer characteristics	Current transfer ratio	CTR	I _F =2mA, V _{CE} =5V	60	-	600	%
	Collector-emitter saturation voltage	V _{CE(sat)}	I _F =20mA, I _C =1mA	-	0.1	0.3	V
	Isolation resistance	R _{Iso}	DC500V	5x10 ¹⁰	10 ¹¹	-	ohm
	Floating capacitance	C _f	V=0, f=1MHz	-	0.6	1.0	pF
	Cut-off frequency	f _c	V _{CE} =5V, I _C =2mA, R _L =100ohm	-	80	-	kHz
	Response time (Rise)	t _r	V _{CE} =5V, I _C =2mA, R _L =100ohm	-	5	20	μ s
Response time (Fall)		t _f	V _{CE} =5V, I _C =2mA, R _L =100ohm	-	4	20	μ s

Fig. 1 Current Transfer Ratio vs.
Forward Current

Classification table of current transfer ratio is shown below.

Model NO.	CTR (%)
P2010 A	60 TO 160
P2010 B	130 TO 260
P2010 C	200 TO 400
P2010 D	300 TO 600
P2010 E	60 TO 600



65 Shark River Road, Neptune, New Jersey 07753-7423

Tel: 732-922-6333 Fax: 732-922-6363 E-Mail: globalcomponents@msn.com

Fig. 2 Collector Power Dissipation vs. Ambient Temperature

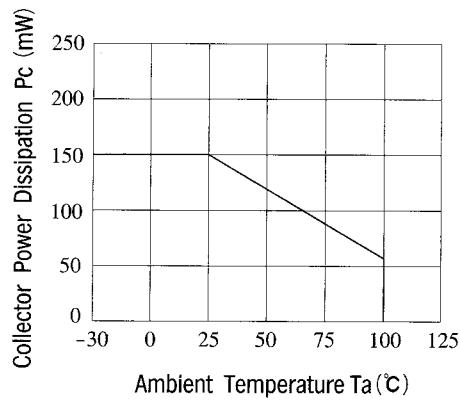


Fig. 4 Forward Current vs. Ambient Temperature

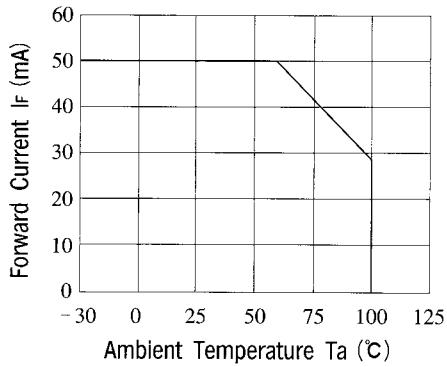


Fig. 6 Collector Current vs. Collector-emitter Voltage

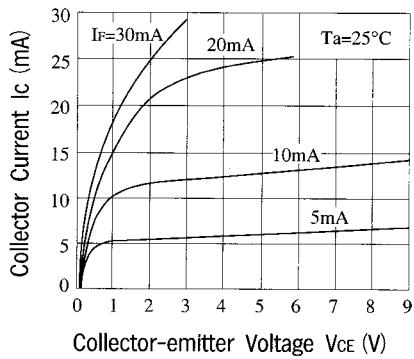


Fig. 3 Collector Dark Current vs. Ambient Temperature

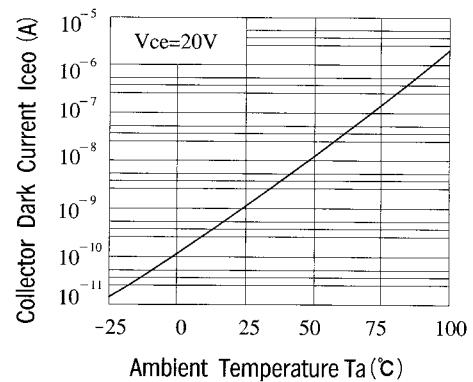


Fig. 5 Forward Current vs. Forward Voltage

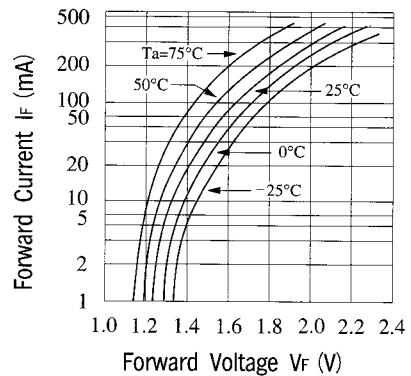


Fig. 7 Relative Current Transfer Ratio vs. Ambient Temperature

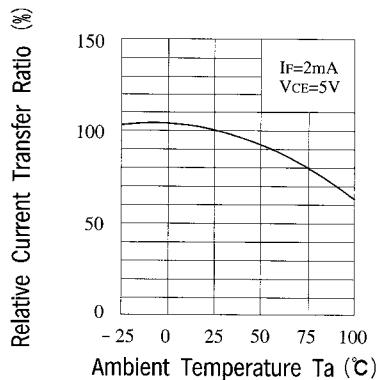


Fig. 8 Collector-emitter Saturation Voltage vs. Ambient Temperature

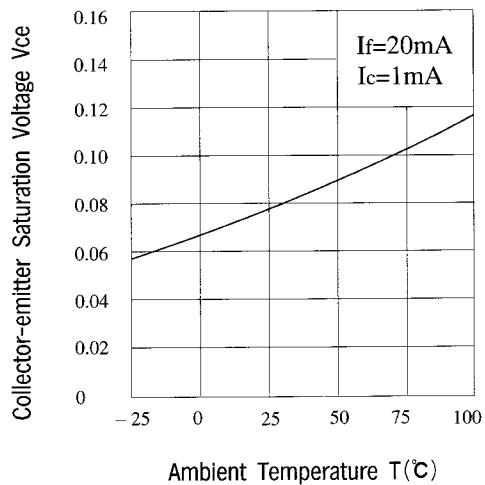


Fig. 9 Collector-emitter Saturation Voltage vs. Forward Current

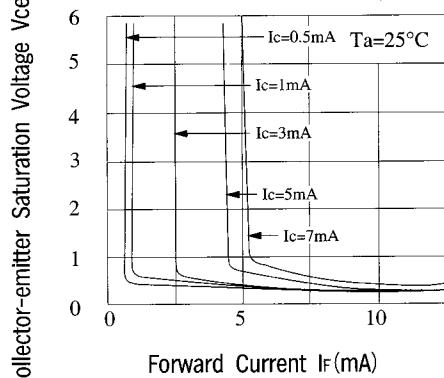


Fig. 10 Response Time vs. Load Resistance

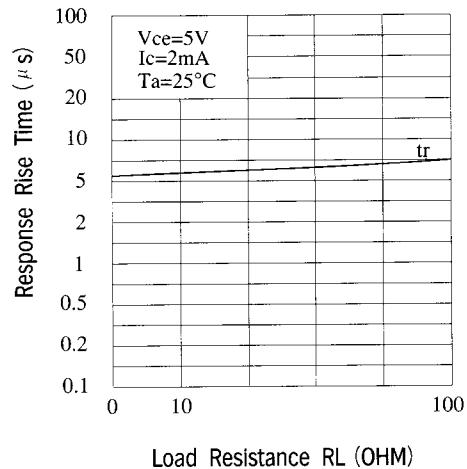


Fig. 11 Response Time vs. Load Resistance

