

PHOTO COUPLER
INDUSTRIAL USE

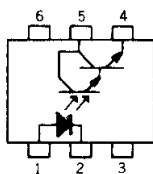
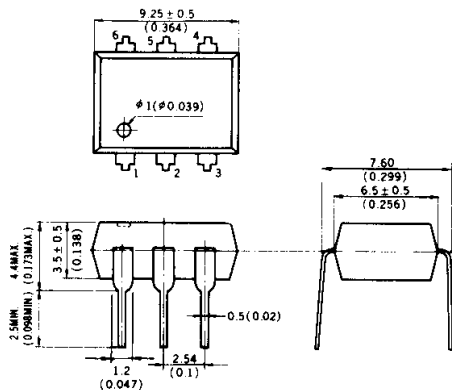
— NEPOC SERIES —

DESCRIPTION

The PS2002B is an optically coupled isolator containing a GaAsP light emitting diode and an NPN silicon darlington- connected phototransistor.

PACKAGE DIMENSIONS

in millimeters (inches)



(Top view)

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

FEATURES

- High Voltage Isolation 2500V_{DC} MIN.
- High Transfer Ratio 100% MIN.
- Economical, Compact, Plastic Dual In-Line Package

APPLICATIONS

- ECR
- Automat
- Replacement of pulse transformer.
- Other replacement of mechanical relay and reed relays.

ABSOLUTE MAXIMUM RATINGS (T_a = 25°C)

Diode

Reverse Voltage	V _R	7.0	V
Forward Current	I _F	50	mA
Power Dissipation	P _D	100	mW

Transistor

Collector to Emitter Voltage	V _{CEO}	40	V
Collector Current	I _C	50	mA
Power Dissipation	P _C	100	mW
Isolation Voltage* 1	BV	2500	V _{DC}
Storage Temperature	T _{stg}	-55 to +125	°C
Operating Temperature	T _{opt}	-55 to +100	°C

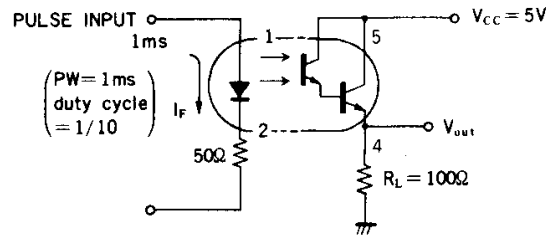
ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Diode	Forward Voltage	V _F			1.9	V	I _F = 5.0 mA
	Reverse Current	I _R			2.0	μA	V _R = 4.0 V
	Junction Capacitance	C		100		pF	V = 0, f = 1.0 MHz
Transistor	Collector to Emitter Dark Current	I _{CEO}			400	nA	V _{CE} = 10 V, I _F = 0
	DC Current Gain	h _{FE}		5000			I _C = 4.0 mA, V _{CE} = 2.0 V
Coupled	Current Transfer Ratio	CTR(I _C /I _F)	100			%	I _F = 5.0 mA, V _{CE} = 2.0 V
	Collector Saturation Voltage	V _{CE (sat)}			1.2	V	I _F = 5.0 mA, I _C = 2.0 mA
	Isolation Resistance	R ₁₋₂	10 ¹¹			Ω	V _{in-out} = 1.0 kV
	Isolation Capacitance	C ₁₋₂		0.8		pF	V = 0, f = 1.0 MHz
	Rise Time	t _r		100		μs	V _{CC} = 5.0 V, I _F = 10 mA, R _L = 100 Ω*2
Fall Time	t _f		120		μs	V _{CC} = 5.0 V, I _F = 10 mA, R _L = 100 Ω*2	

* 1 Measuring Condition

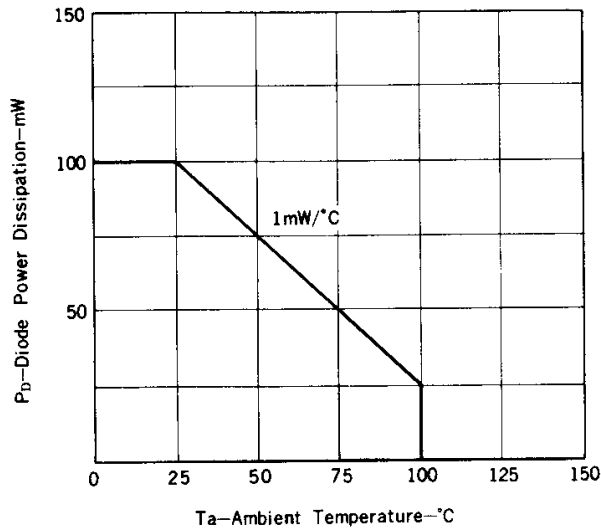
DC or AC voltage for 1 minute at Ta = 25°C,
RH = 60%
Between input (pin No. 1, 2 and No. 3 Common)
and output (pin No. 4, 5 and No. 6 Common)

* 2 Test Circuit for Switching Time



TYPICAL CHARACTERISTICS (Ta = 25°C)

DIODE POWER DISSIPATION vs. AMBIENT TEMPERATURE



TRANSISTOR POWER DISSIPATION vs. AMBIENT TEMPERATURE

