



**NEC's 1 Mbps HIGH CMR
ANALOG OUTPUT TYPE 8-PIN
SOP HIGH-SPEED PHOTOCOUPLER**

**PS8802-1
PS8802-2**

FEATURES

- **HIGH ISOLATION VOLTAGE**
BV: 2500 V_{r.m.s.}
- **HIGH COMMON MODE TRANSIENT IMMUNITY**
CMH, CML = ±10 kV/μs MIN
- **HIGH SUPPLY VOLTAGE**
V_{CC} = 35 V
- **HIGH-SPEED RESPONSE**
t_{PHL} = 0.8 μs MAX, t_{PLH} = 1.2 μs MAX

DESCRIPTION

NEC's PS8802-1 and PS8802-2 is an optically coupled isolator containing a GaAlAs LED on the light emitting side (input side) and a PIN photodiode and a high-speed amplifier transistor on the output side on one chip.

This is a plastic S08 type for high density applications.

APPLICATIONS

- **COMPUTERS AND PERIPHERALS**
- **GENERAL PURPOSE INVERTER**
- **SUBSTITUTIONS FOR RELAYS AND PULSE TRANSFORMERS**
- **POWER SUPPLY**
- **FACTORY AUTOMATION**
- **SERIAL BUS ISOLATION**

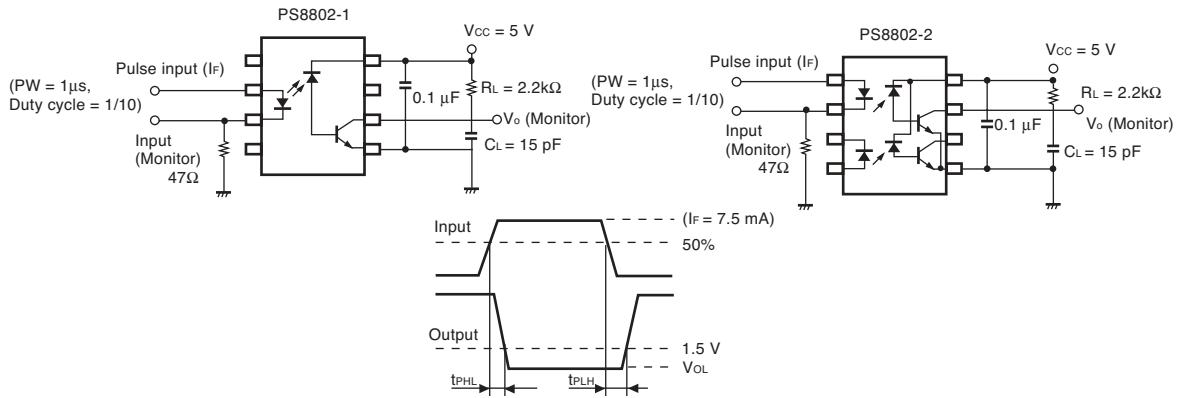
ELECTRICAL CHARACTERISTICS (T_A = 25°C)

		PART NUMBER	PS8802-1, PS8802-2			
	SYMBOLS	PARAMETERS	UNITS	MIN	TYP	MAX
Diode	V _F	Forward Voltage, I _F = 16 mA	V		1.7	2.2
	I _R	Reverse Current, V _R = 3 V	μA			10
	ΔV _F /ΔT	Forward Voltage Temperature Coefficient, I _F = 16 mA	mV/°C		-2.1	
	C _t	Terminal Capacitance, V = 0, f = 1 MHz	pF		30	
Detector	I _{OH} (1)	High Level Output Current, I _F = 0 mA, V _{CC} = V _O = 5.5 V	nA		3	500
	I _{OH} (2)	High Level Output Current, I _F = 0 mA, V _{CC} = V _O = 30 V	μA			100
	V _{OL}	Low Level Output Voltage, I _F = 16 mA, V _{CC} = 4.5 V, I _O = 1.2 mA	V		0.1	0.4
	I _{CCL}	Low Level Supply Current, I _F = 16 mA, V _O = open, V _{CC} = 30 V	μA		50	
	I _{CCH}	High Level Supply Current, I _F = 0 mA, V _O = open, V _{CC} = 30 V			0.01	2
Coupled	CTR	Current Transfer Ratio (I _C /I _F), I _F = 16 mA, V _{CC} = 30 V, V _O = 0.4 V	%	15	20	35
	R _{I-O}	Isolation Resistance, V _{I-O} = 1 kV _{DC} , R _H = 40 to 60 %	Ω	10 ¹¹		
	C _{I-O}	Isolation Capacitance, C _{I-O} = V = 0, f = 1 MHz	pF		0.4	
	t _{PHL}	Propagation Delay Time (H→L) ¹ , I _F = 16 mA, V _{CC} = 30 V, R _L = 2.2 kΩ, C _L = 15 pF	μs		0.5	0.8
	t _{PLH}	Propagation Delay Time (L→H) ¹ , I _F = 16 mA, V _{CC} = 30 V, R _L = 2.2 kΩ, C _L = 15 pF			0.6	1.2
	CMH	Common Mode Transient Immunity at High Level Output, I _F = 0 mA, V _{CC} = 5 V, R _L = 2.2 kΩ, V _{CM} = 1.5 kV	kV/μs		10	
	CML	Common Mode Transient Immunity at Low Level Output, I _F = 16 mA, V _{CC} = 5 V, R _L = 4.1 kΩ, V _{CM} = 1.5 kV			-10	

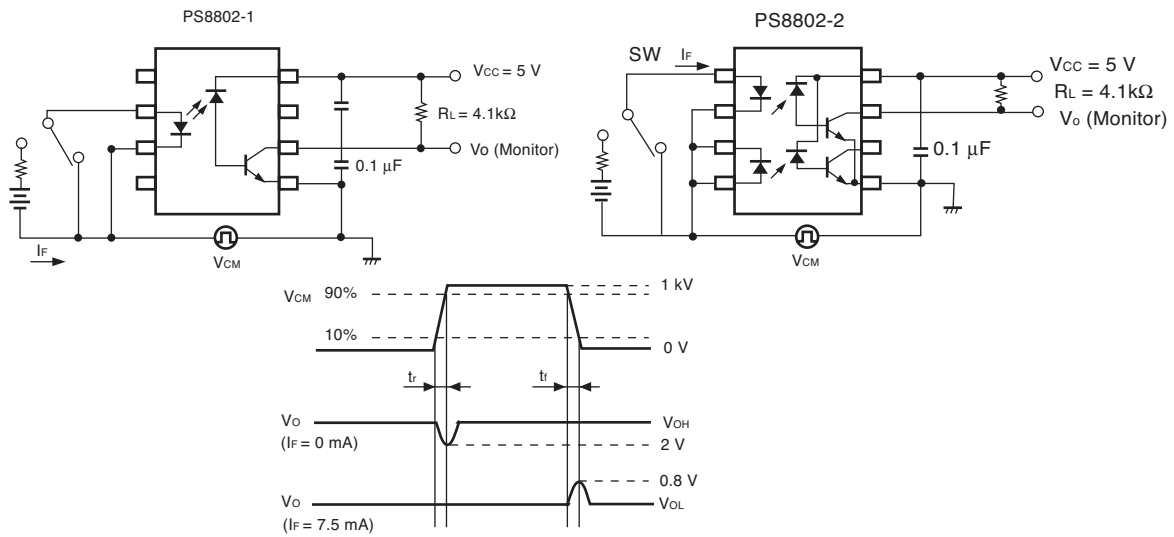
(See notes on next page)

Notes:

1. Test circuit for propagation delay time



2. Test circuit for common mode transient immunity.



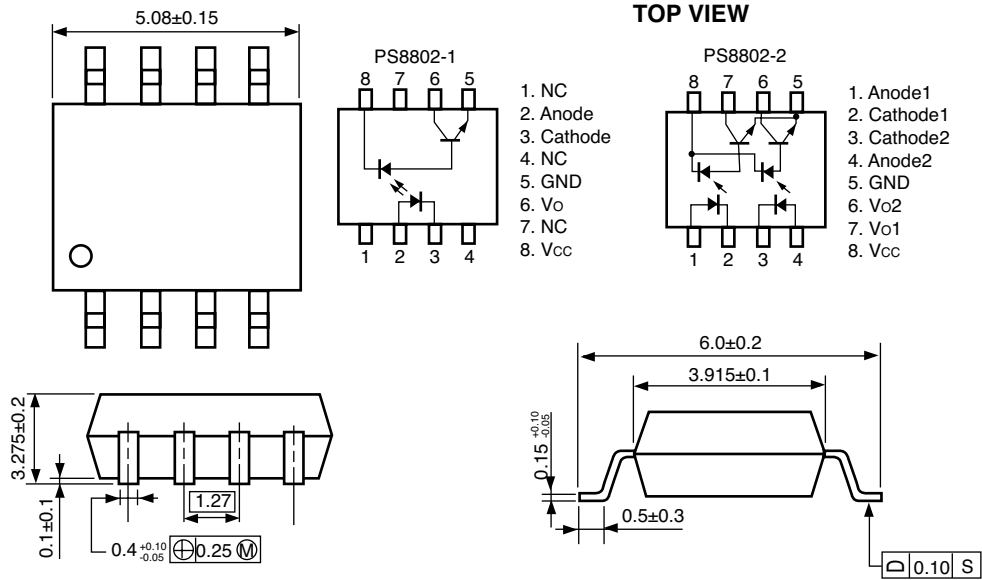
ABSOLUTE MAXIMUM RATINGS¹ (TA = 25°C)

SYMBOLS	PARAMETERS	UNITS	RATINGS PS8802-1,-2
Diode			
IF	Forward Current (DC)	mA	25
VR	Reverse Voltage	V	5.0
PD	Power Dissipation	mW	45
Detector			
VCC	Supply Voltage	V	35
VO	Output Voltage	V	35
IO	Output Current	mA	8.0
PC	Power Dissipation	mW	100
Coupled			
BV	Isolation Voltage ²	V _{r.m.s.}	2500
T _{STG}	Storage Temperature	°C	-55 to +150
TA	Operating Ambient Temperature	°C	-55 to +100

Notes:

1. Operation in excess of any one of these parameters may result in permanent damage.
2. Reduced to 1.00 mw/°C at TA = 25°C or more.
3. AC voltage for 1 minute at TA = 25 °C, RH = 60 % between input and output.

OUTLINE DIMENSIONS (Units in mm)



Life Support Applications

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