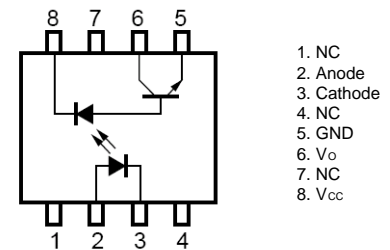
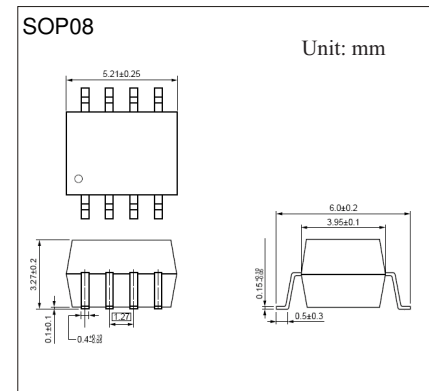


# 1 Mbps High CMR Analog Output Type 8-Pin SOP High-Speed Photocoupler

## PS8802-1

### Features

- HIGH ISOLATION VOLTAGE
- HIGH COMMON MODE TRANSIENT IMMUNIT
- HIGH SUPPLY VOLTAGE
- HIGH-SPEED RESPONSE



### Absolute Maximum Ratings Ta = 25°C

Parameter		Symbol	Rating	Unit
Diode	Forward Current (DC)	IF	25	mA
	Reverse Voltage	VR	5	V
	Power Dissipation	PD	45	mW
Detector	Supply Voltage	Vcc	35	V
	Output Voltage	Vo	35	V
	Output Current	Io	8	mA
	Power Dissipation	Pc	100	mW
Isolation voltage (Note 1)		BV	2500	Vrms
Operating Ambient temperature		Topr	-55 to +100	°C
Storage temperature		Tstg	-55 to +150	°C

Note 1: Reduced to 1.00 mW/°C at TA = 25°C or more.

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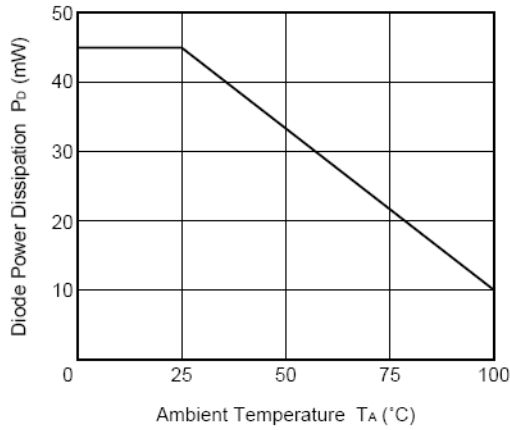
Electrical Characteristics (Ta = 25°C, unless otherwise specified)

Characteristics	Symbol	Test conditons	Min	Typ	Max	Unit
Forward voltage	V <sub>F</sub>	I <sub>F</sub> = 5mA		1.7	2.2	V
Temperature coefficient of forward voltage	ΔV <sub>F</sub> /ΔTa	I <sub>F</sub> = 16 mA		-2.1		mV/°C
Reverse current	I <sub>R</sub>	V <sub>R</sub> = 3V			10	μ A
Input capacitance	C <sub>i</sub>	V = 0, f = 1MHz		30		pF
High Level Output Current	I <sub>OPH1</sub>	I <sub>F</sub> = 0 mA, V <sub>CC</sub> = V <sub>O</sub> = 5.5 V		3	500	nA
	I <sub>OPH2</sub>	I <sub>F</sub> = 0 mA, V <sub>CC</sub> = V <sub>O</sub> = 30 V			100	μ A
Low Level Output Voltage	V <sub>OL</sub>	V <sub>CC</sub> = 4.5 V, I <sub>O</sub> = 1.2 mA, I <sub>F</sub> = 16 mA		0.1	0.4	V
Low Level Supply Current	I <sub>CCL</sub>	I <sub>F</sub> = 16 mA, V <sub>O</sub> = open, V <sub>CC</sub> = 30 V		50		μ A
High Level Supply Current	I <sub>CCH</sub>	I <sub>F</sub> = 0 mA, V <sub>O</sub> = open, V <sub>CC</sub> = 30 V		0.01	2	μ A
Current Transfer Ratio (I <sub>C</sub> /I <sub>F</sub> )	CTR	I <sub>F</sub> = 16 mA, V <sub>CC</sub> = 30 V, V <sub>O</sub> = 0.4 V	15	20	35	%
Isolation Resistance	R <sub>I-O</sub>	V <sub>I-O</sub> = 1 kVDC, R <sub>H</sub> = 40 to 60 %	10 <sup>11</sup>			Ω
Isolation Capacitance	C <sub>I-O</sub>	C <sub>I-O</sub> = V = 0, f = 1 MHz		0.4		pF
Propagation Delay Time, (High → Low)	t <sub>PHL</sub>	I <sub>F</sub> = 16 mA, V <sub>CC</sub> = 30 V, R <sub>L</sub> = 2.2 kΩ, C <sub>L</sub> = 15 pF		0.5	0.8	μs
Propagation Delay Time, (Low → High)	t <sub>PLH</sub>	I <sub>F</sub> = 16 mA, V <sub>CC</sub> = 30 V, R <sub>L</sub> = 2.2 kΩ, C <sub>L</sub> = 15 pF		0.6	1.2	μs
Common mode transient immunity at HIGH level output	C <sub>MH</sub>	I <sub>F</sub> = 0 mA, V <sub>CC</sub> = 5 V, R <sub>L</sub> = 2.2 kΩ, V <sub>CM</sub> = 1.5 kV	10			KV/μs
Common mode transient immunity Common mode transient immunity	C <sub>M</sub>	I <sub>F</sub> = 16 mA, V <sub>CC</sub> = 5 V, R <sub>L</sub> = 4.1 kΩ, V <sub>CM</sub> = 1.5 kV	-10			

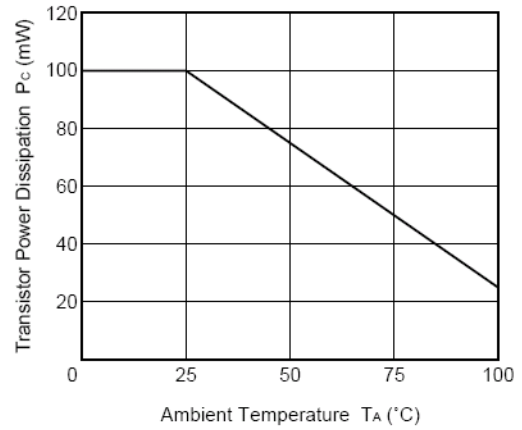
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## Typical Characteristics

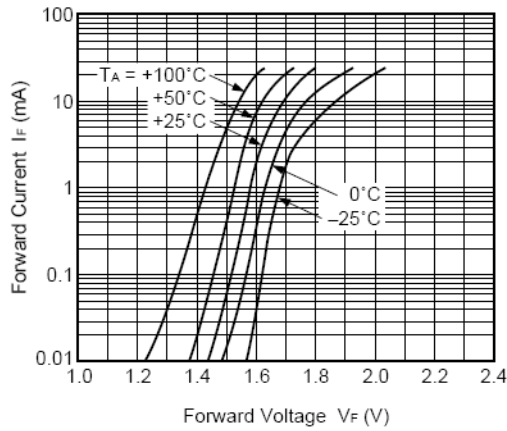
DIODE POWER DISSIPATION vs. AMBIENT TEMPERATURE



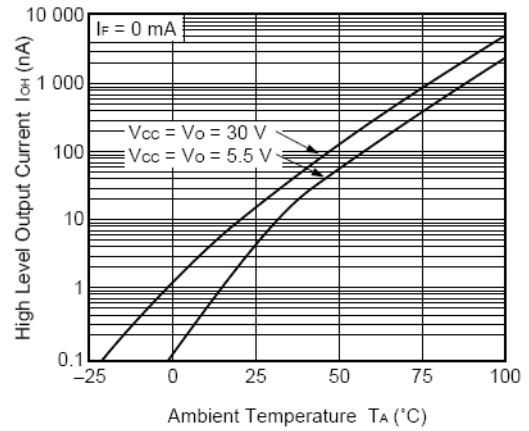
TRANSISTOR POWER DISSIPATION vs. AMBIENT TEMPERATURE



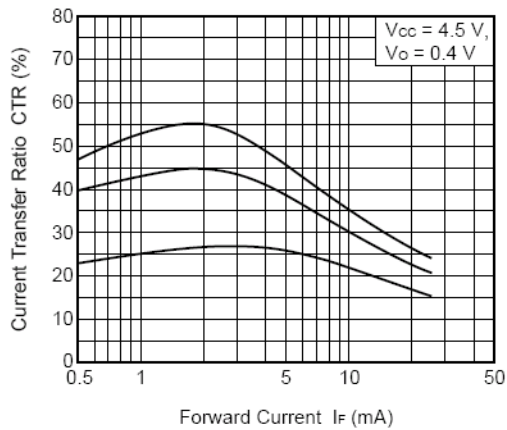
FORWARD CURRENT vs. FORWARD VOLTAGE



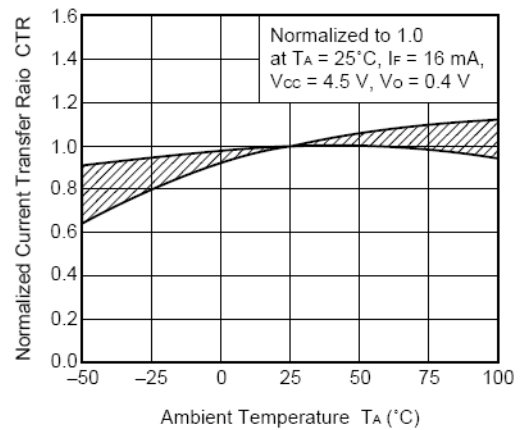
HIGH LEVEL OUTPUT CURRENT vs. AMBIENT TEMPERATURE



CURRENT TRANSFER RATIO vs. FORWARD CURRENT

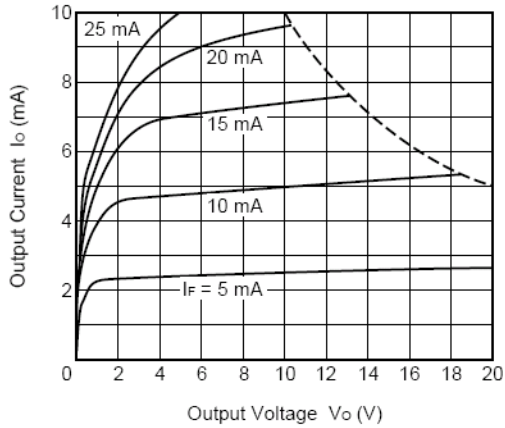


NORMALIZED CURRENT TRANSFER RATIO vs. AMBIENT TEMPERATURE

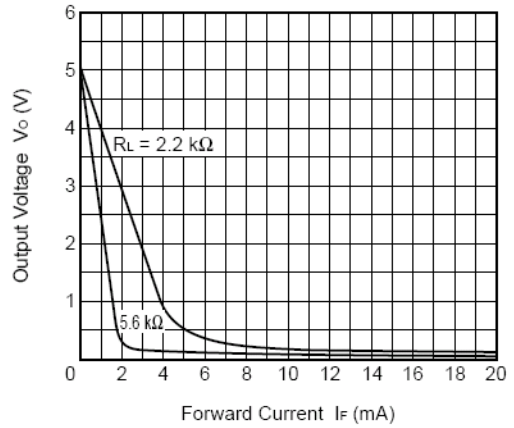


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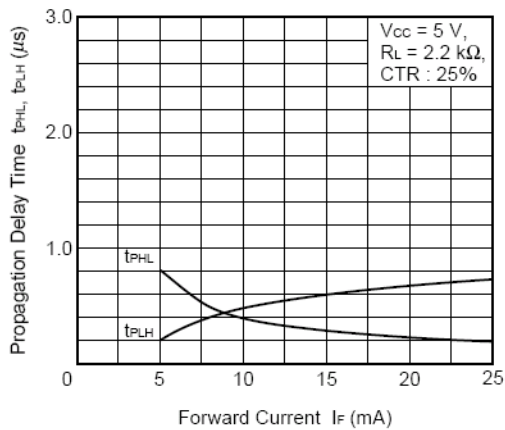
OUTPUT CURRENT vs. OUTPUT VOLTAGE



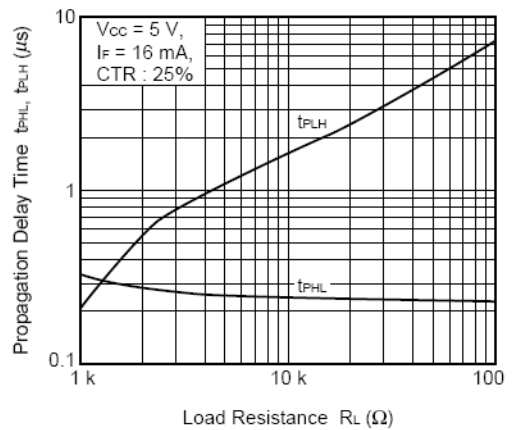
OUTPUT VOLTAGE vs. FORWARD CURRENT



PROPAGATION DELAY TIME vs. FORWARD CURRENT



PROPAGATION DELAY TIME vs. LOAD RESISTANCE



NORMALIZED PROPAGATION DELAY TIME vs. AMBIENT TEMPERATURE

