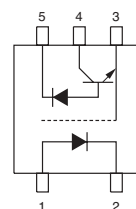
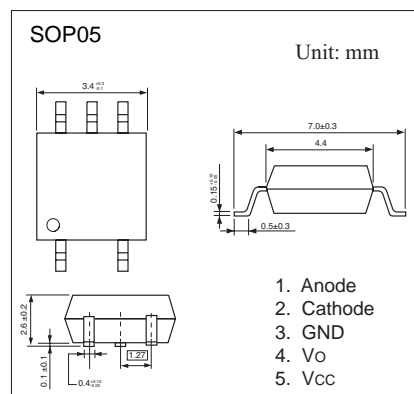


High Noise Reduction High Speed Analog Output 5-Pin SOP Photocoupler

PS8101

■ Features

- High Common Mode Transient Immunity
- High isolation voltage
- 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
	Power Dissipation Derating	$\Delta Pd/^\circ C$	0.8	mW/°C
Detector	Supply Voltage	Vcc	45	V
	Output Voltage	Vo	45	V
	Output Current	Io	8	mA
	Power dissipation	Pc	100	mW
Isolation voltage *2		BV	2500	Vrms
Operating Ambient temperature		T _{opr}	-55 to +100	°C
Storage temperature		T _{stg}	-55 to +125	°C

*1 Operation in excess of any one of these parameters may result in permanent damage.

*2 AC voltage for 1 minute at TA = 25 °C, RH = 60 % between input and output

PS8101

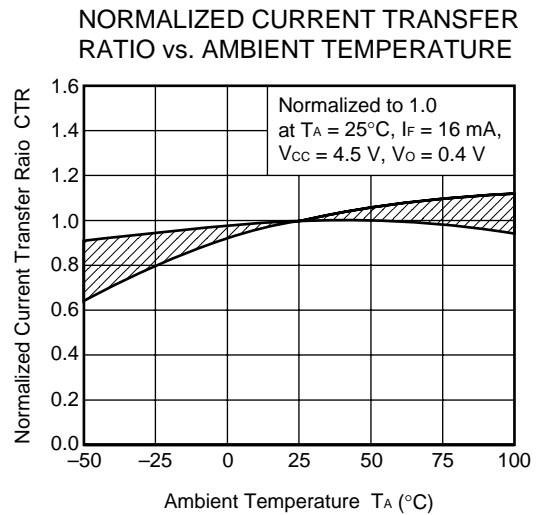
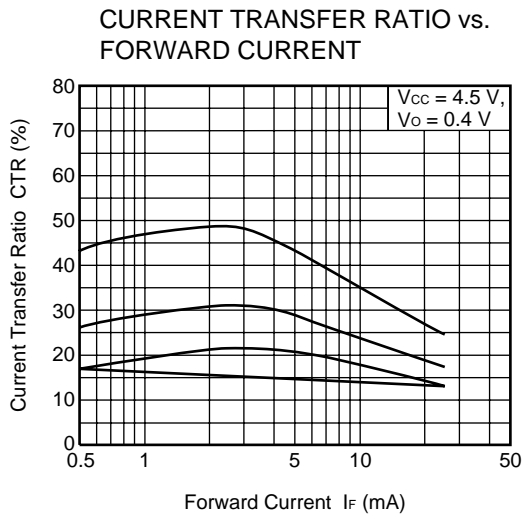
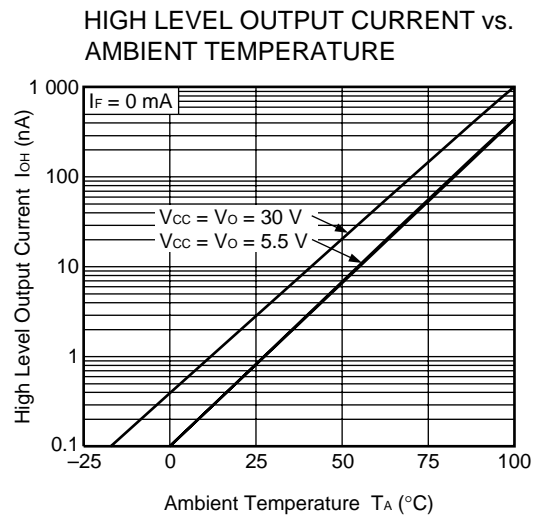
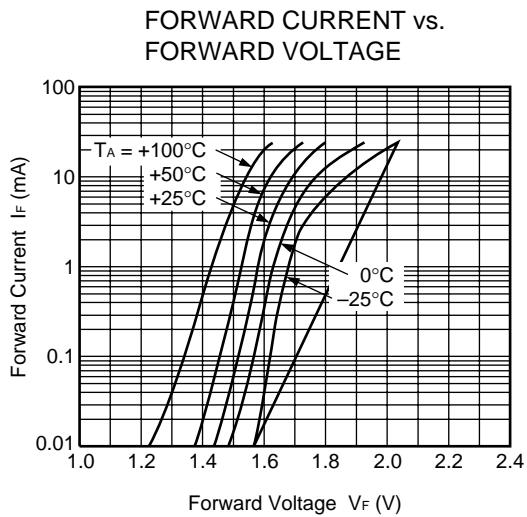
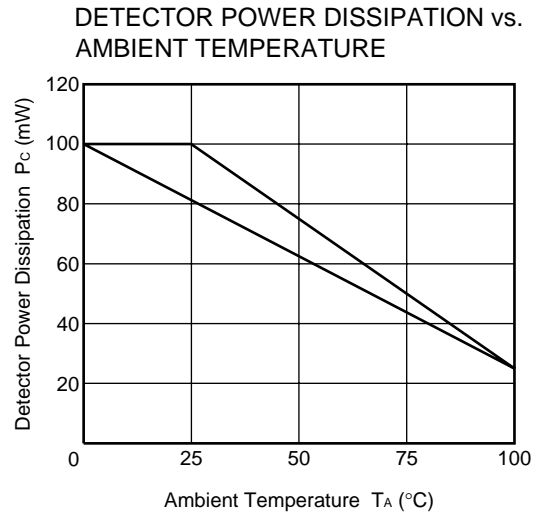
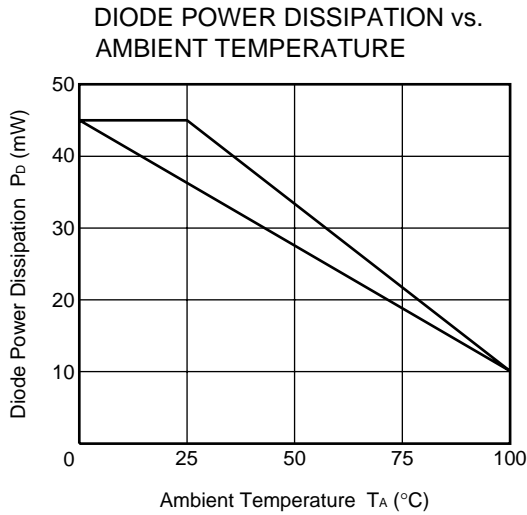
■ Electrical Characteristics Ta = 25°C

Parameter		Symbol	Test conditons	Min	Typ	Max	Unit
Diode	Forward voltage	V _F	I _F = 16mA		1.7	2.2	V
	Reverse current	I _R	V _R = 3V			10	μA
	Forward Voltage Temp. Coefficient	ΔV _F /ΔT	I _F = 16 mA		-1.6		mV/°C
	Terminal capacitance	C _t	V = 0, f = 1MHz		60		pF
Detector	Collector to Emitter Current	I _{CEO}	V _{CE} = 40V, I _F = 0 mA,			100	nA
	High Level Output Current	I _{OH(1)}	I _F = 0 mA, V _{CC} = V _O = 5.5 V		3	500	nA
	High Level Output Current	I _{OH(2)}	I _F = 0 mA, V _{CC} = V _O = 30 V			100	μA
	Low Level Output Voltage	V _{OL}	I _F = 16 mA, V _{CC} = 4.5 V, I _O = 1.2 mA		0.1	0.4	V
	Low Level Supply Current	I _{CCL}	I _F = 16 mA, V _O = Open, V _{CC} = 30 V		50		μA
	High Level Supply Current	I _{CCH}	I _F = 0 mA, V _O = Open, V _{CC} = 30 V		0.01	2	μA
Coupled	Current Transfer Ratio * 3	CTR	I _F = 16 mA, V _{CC} = 4.5 V, V _O = 0.4 V	15	20	35	%
	Isolation Resistance	R _{I-O}	V _{IN-OUT} = 1k VDC, RH = 40 to 60 %	10 ¹¹			Ω
	Isolation Capacitance	C _{I-O}	V = 0, f = 1MHz		0.4		pF
	Propagation Delay Time, (High → Low)	t _{PHL}	I _F = 16 mA, V _{CC} = 5 V, R _L = 2.2 k Ω, C _L = 15pF		0.5	0.8	μs
	Propagation Delay Time, (Low → High)	t _{PLH}	I _F = 16 mA, V _{CC} = 5 V, R _L = 2.2 k Ω, C _L = 15 pF		0.6	1.2	μs
	Common Mode Transient Immunity at High Level Output	CMH	I _F = 0 mA, V _{CC} = 5 V, R _L = 4.1 k Ω, V _{CM} = 1.5 kV	-10			kV/μs
	Common Mode Transient Immunity at Low Level Output	CML	I _F = 16 mA, V _{CC} = 5 V, R _L = 4.1 k Ω, V _{CM} = 1.5 kV	-10			kV/μs

* 3 CTR rank : K: 20 to 35 (%), N: 10 to 35 (%).

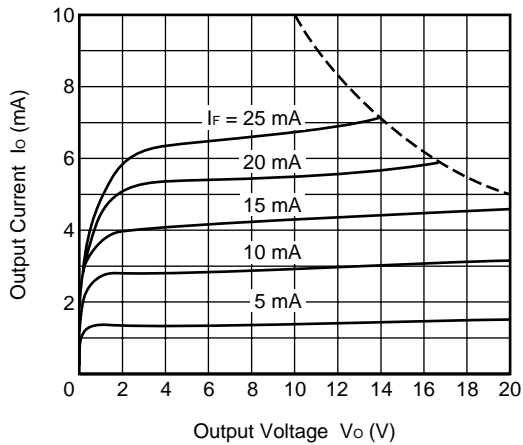
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■ TypIacl Characteristics

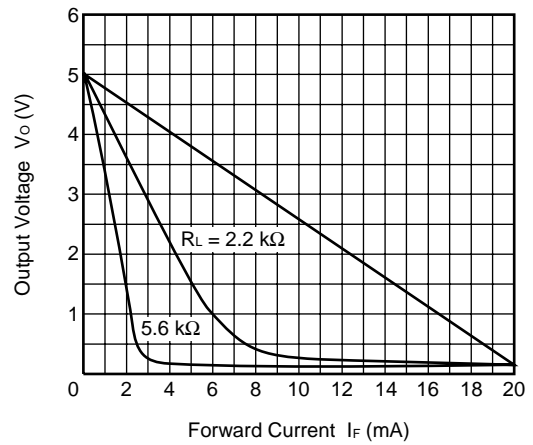


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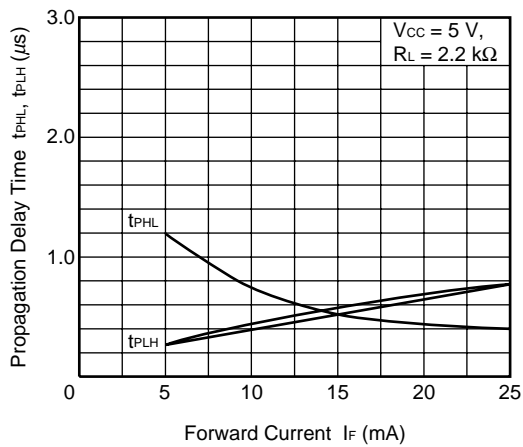
OUTPUT CURRENT vs. OUTPUT VOLTAGE



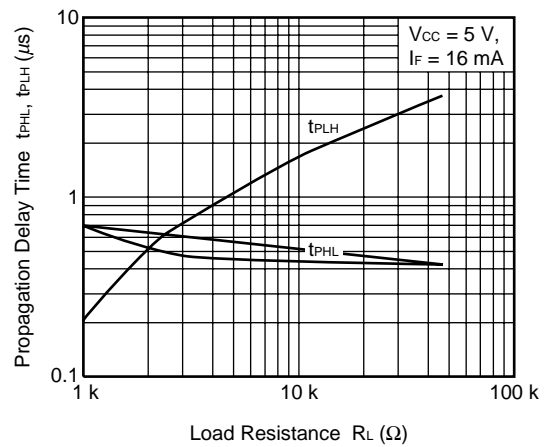
OUTPUT VOLTAGE vs. FORWARD CURRENT



PROPAGATION DELAY TIME vs. FORWARD CURRENT



PROPAGATION DELAY TIME vs. LOAD RESISTANCE



NORMALIZED PROPAGATION DELAY TIME vs. AMBIENT TEMPERATURE

