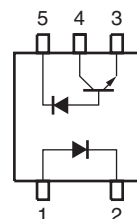
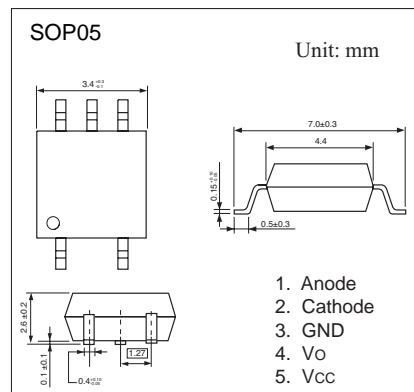


High Speed(200 kbps) Analog Output Type 5-Pin SOP Photocoupler

PS8103

■ Features

- Wide operating Vcc range
- High isolation voltage
- High-speed response



■ Absolute Maximum Ratings Ta = 25°C

Parameter		Symbol	Rating	Unit
Diode	Forward Current (DC)	IF	50	mA
	Reverse Voltage	VR	5	V
	Power Dissipation *1	PD	50	mW
Detector	Supply Voltage	Vcc	-0.5 to +15	V
	Output Voltage	Vo	-0.5 to +15	V
	Output Current	Io	8	mA
	Power dissipation *2	Pc	80	mW
Isolation voltage *3		BV	3750	Vrms
Operating Ambient temperature		Topr	-40 to +100	°C
Storage temperature		Tstg	-55 to +125	°C

*1 Reduced to 0.5 mW/°C at TA = 25°C or more.

*2 Applies to output pin Vo. Reduced to 0.8 mW/°C at TA = 25°C or more.

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

PS8103

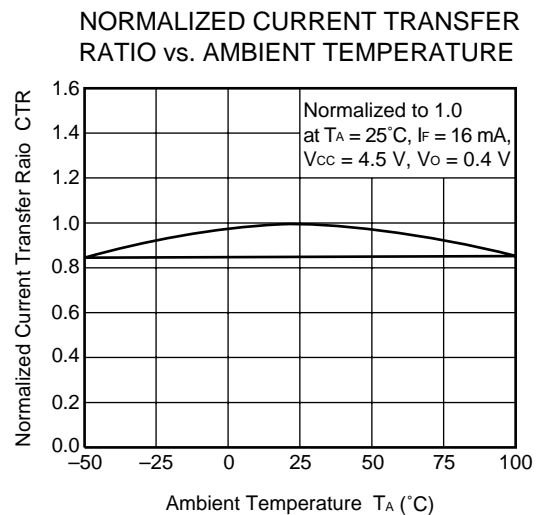
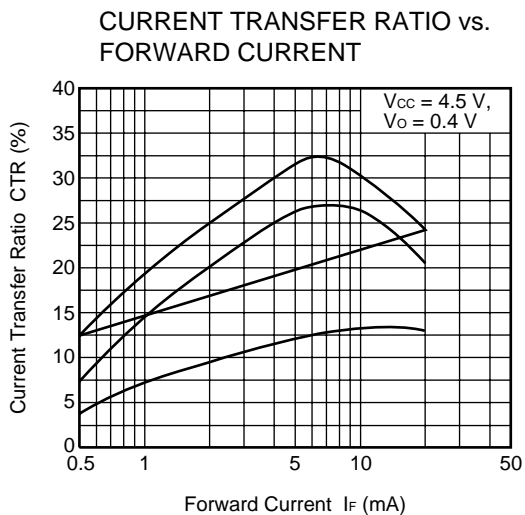
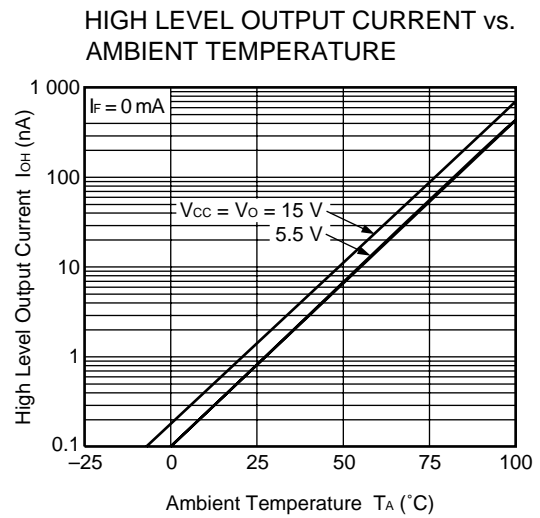
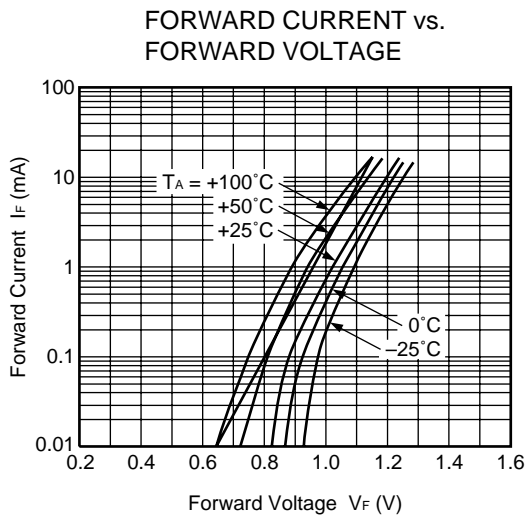
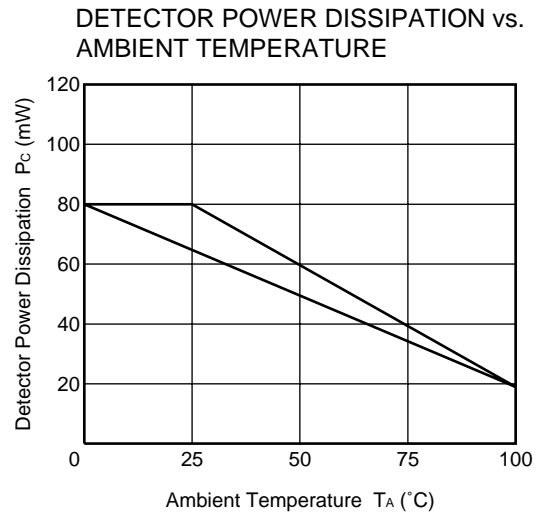
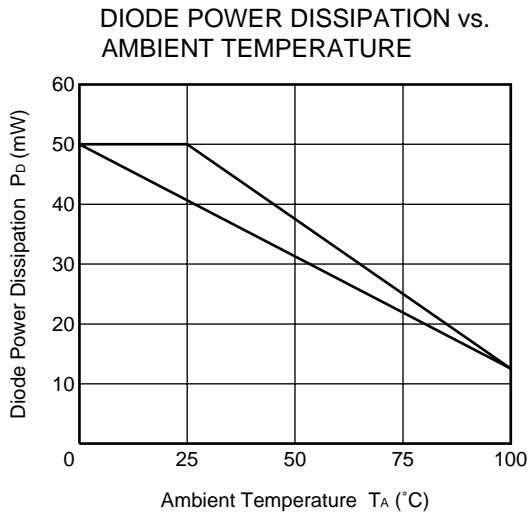
■ Electrical Characteristics Ta = 25°C

Parameter		Symbol	Test conditons	Min	Typ	Max	Unit
Diode	Forward voltage	V _F	I _F = 16mA		1.2	1.5	V
	Reverse current	I _R	V _R = 3V			10	μA
	Terminal capacitance	C _t	V = 0, f = 1MHz		30		pF
Detector	High Level Output Current	I _{OH(1)}	I _F = 0 mA, V _{CC} = V _O = 5.5 V		7	500	nA
	High Level Output Current	I _{OH(2)}	I _F = 0 mA, V _{CC} = V _O = 15 V			100	μA
	Low Level Output Voltage	V _{OL}	I _F = 16 mA, V _{CC} = 4.5 V, I _{OL} = 1.1 mA		0.1	0.4	V
	Low Level Supply Current	I _{CCL}	I _F = 16 mA, V _O = Open, V _{CC} = 15 V		150	800	μA
	High Level Supply Current	I _{CCH}	I _F = 0 mA, V _O = Open, V _{CC} = 15 V		0.01	1	μA
Coupled	Current Transfer Ratio * 3	CTR	I _F = 16 mA, V _{CC} = 4.5 V, V _O = 0.4 V	10	23	30	%
	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 = 4.1 k Ω, C _L = 15pF		1	5	μs
	Propagation Delay Time, (Low → High)	t _{PLH}	I _F = 16 mA, V _{CC} = 5 V, R _L = 4.1 k Ω, C _L = 15pF		2	5	μs
	Propagation Delay Time, (High → Low)	t _{PHL}	I _F = 16 mA, V _{CC} = 5 V, R _L = 20 k Ω, C _L = 15pF		1	15	μs
	Propagation Delay Time, (Low → High)	t _{PLH}	I _F = 16 mA, V _{CC} = 5 V, R _L = 20 k Ω, C _L = 15pF		7	15	μs

* 3 CTR rank : K: 15 to 30 (%), N: 10 to 30 (%).

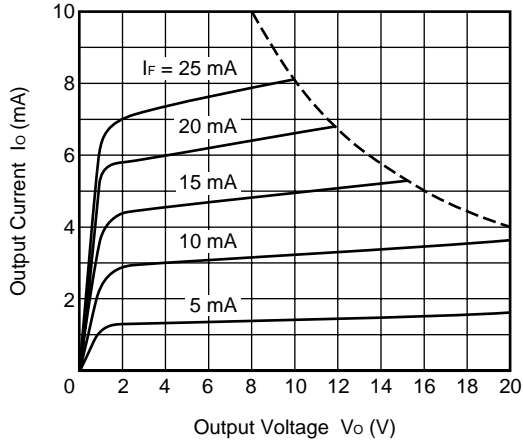
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Typical Characteristics

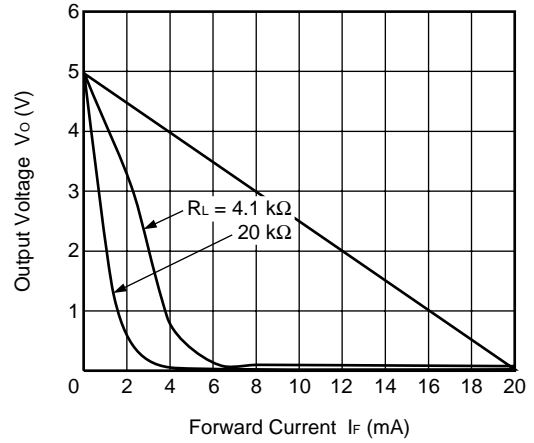


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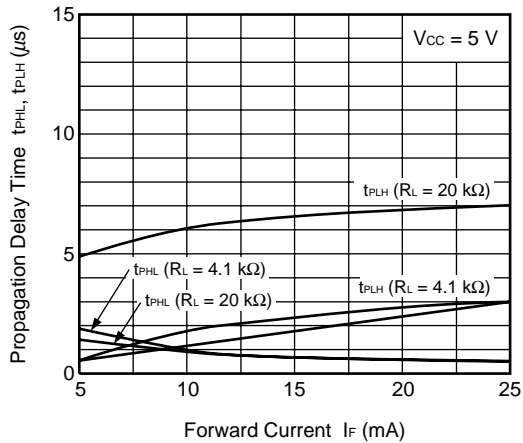
OUTPUT CURRENT vs. OUTPUT VOLTAGE



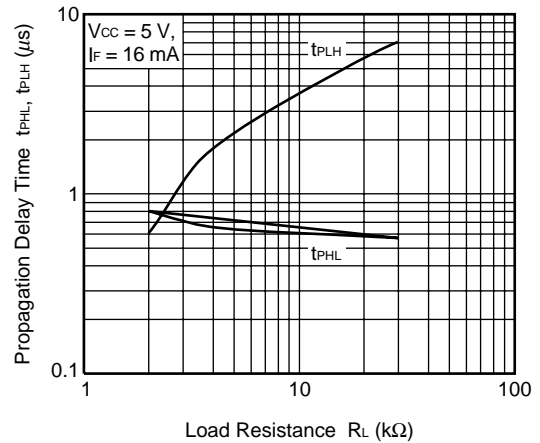
OUTPUT VOLTAGE vs. FORWARD CURRENT



PROPAGATION DELAY TIME vs. FORWARD CURRENT



PROPAGATION DELAY TIME vs. LOAD RESISTANCE



NORMALIZED PROPAGATION DELAY TIME vs. AMBIENT TEMPERATURE

