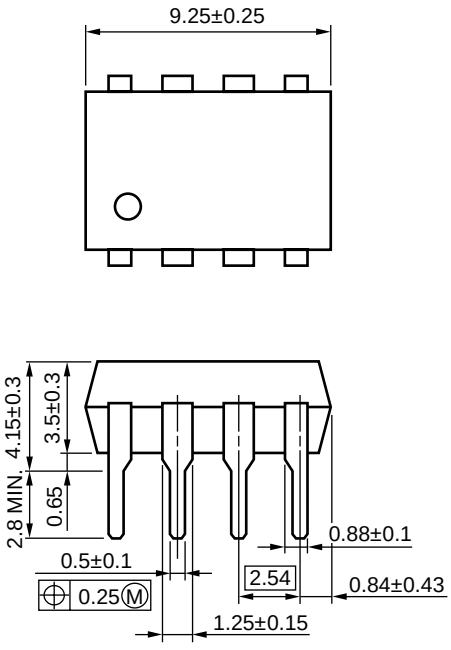
High Speed Analog Output Type
8-Pin Photocoupler
PS8601

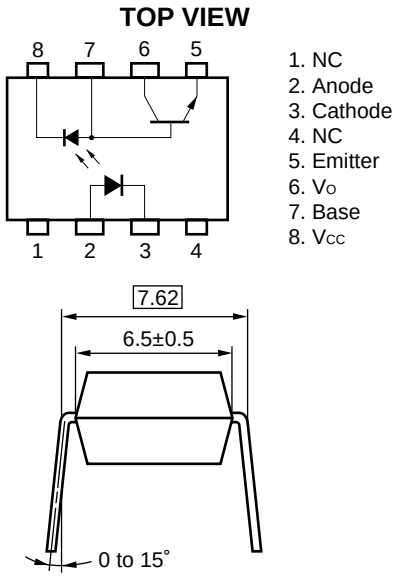
■ Features

- High supply voltage (V_{CC} = 35 V MAX.)
- High speed response (t_{PHL}, t_{PLH} = 0.8 μs MAX.)
- High isolation voltage (B_V = 5 000 Vr.m.s.)
- TTL, CMOS compatible with a resistor
- For Infrared reflow soldering

■ Package Dimensions (In millimeters)

DIP Type





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■ Absolute Maximum Ratings Ta = 25℃

Parameter		Symbol	Ratings	Unit
Diode	Forward Current	I_F	25	mA
	Reverse Voltage	V_R	5	V
	Power Dissipation	P_D	45	mW
Detector	Supply Voltage	V_{CC}	35	V
	Output Voltage	V_O	35	V
	Output Current	I_O	8	mA
	Power Dissipation	P_C	100	mW
Isolation Voltage*1		BV	5 000	Vr.m.s.
Operating Ambient Temperature		T_A	–55 to +100	°C
Storage Temperature		T_{stg}	–55 to +100	°C

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

■ Electrical Characteristics Ta = 25℃

Parameter		Symbol	Conditions	MIN.	TYP.*1	MAX.	Unit
Diode	Forward Voltage	V_F	I_F = 16 mA		1.7	2.2	V
	Reverse Current	I_R	V_R = 5 V			10	μA
	Forward Voltage Temperature Coefficent	$\Delta V_F/\Delta T$	I_F = 16 mA		–1.6		mV/°C
	Terminal Capacitance	C_t	V = 0 V, f = 1 MHz		60		pF
Detector	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 = 35 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} = 35 V		50		μA
	High Level Supply Current	I_{CCH}	I_F = 0 mA, V_O = Open, V_{CC} = 35 V		0.01	1	μA
	DC Current Gain	h_{FE}	V_O = 5 V, I_O = 3 mA		100		
Coupled	Current Transfer Ratio	CTR	I_F = 16 mA, V_{CC} = 4.5 V, V_O = 0.4 V	15			%
	Isolation Resistance	R_{I-O}	V_{I-O} = 1 kV_{DC}	10^{11}			Ω
	Isolation Capacitance	C_{I-O}	V = 0 V, f = 1 MHz		0.7		pF
	Propagation Delay Time (H → L)*2	t_{PHL}	I_F = 16 mA, V_{CC} = 5 V, R_L = 1.9 kΩ		0.5	0.8	μs
	Propagation Delay Time (L → H)*2	t_{PLH}	I_F = 16 mA, V_{CC} = 5 V, R_L = 1.9 kΩ		0.3	0.8	μs

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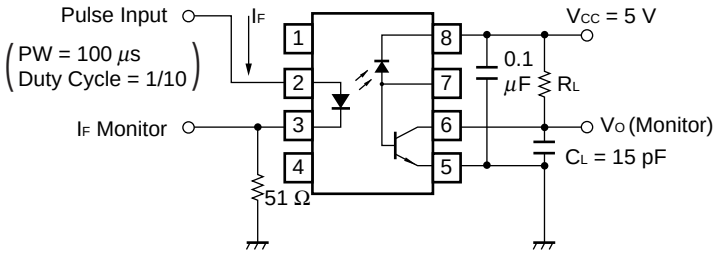
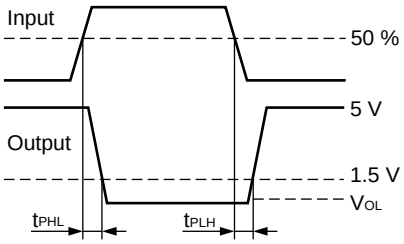
***1** Typical values at T_A = 25 °C

***2** Test circuit for propagation delay time





C_L includes probe and stray wiring capacitance

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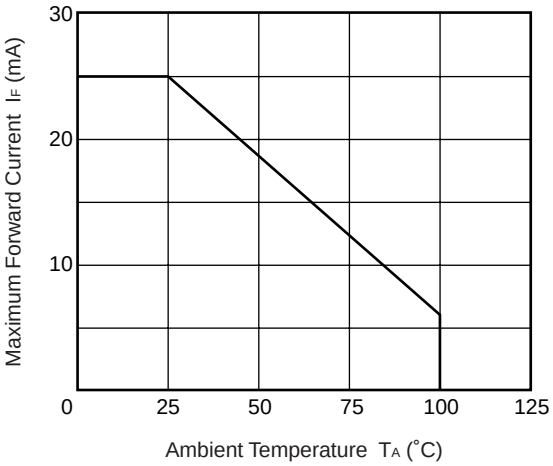
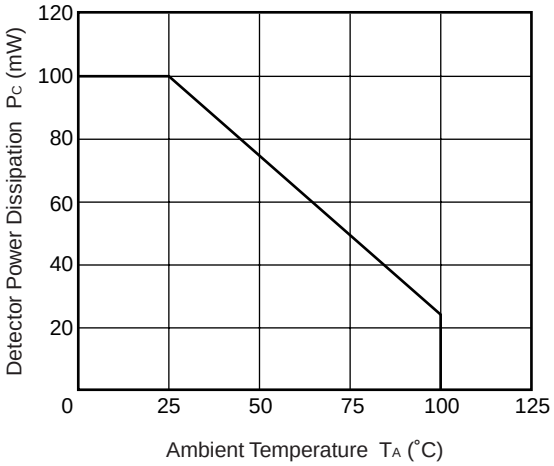
■ Typical Characteristics (TA=25℃,unles otherwise specified)

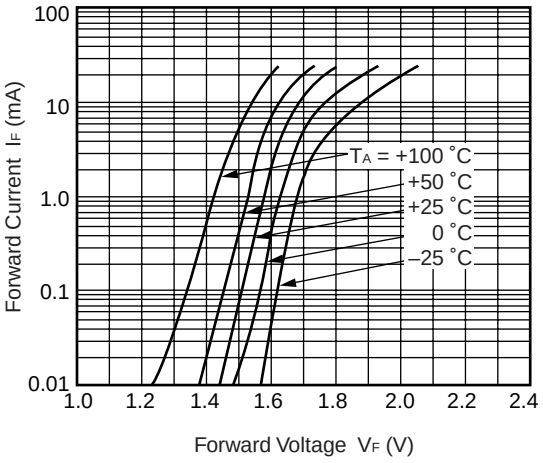
MAXIMUM FORWARD CURRENT vs. AMBIENT TEMPERATURE



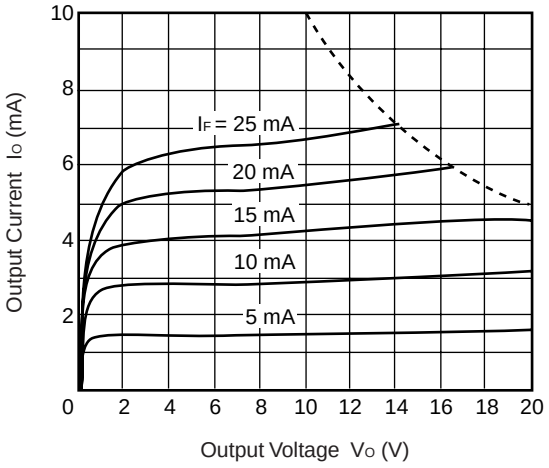
DETECTOR POWER DISSIPATION vs. AMBIENT TEMPERATURE



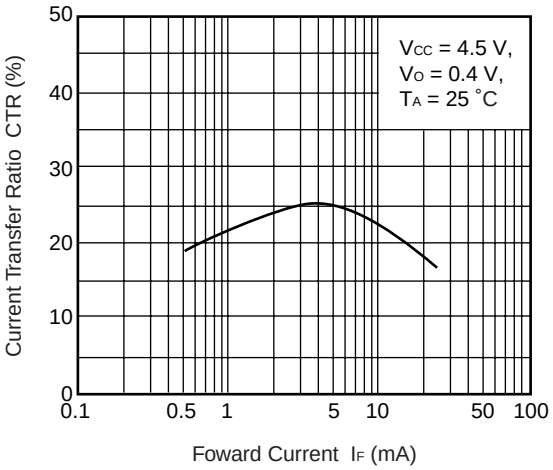
FORWARD CURRENT vs. FORWARD VOLTAGE



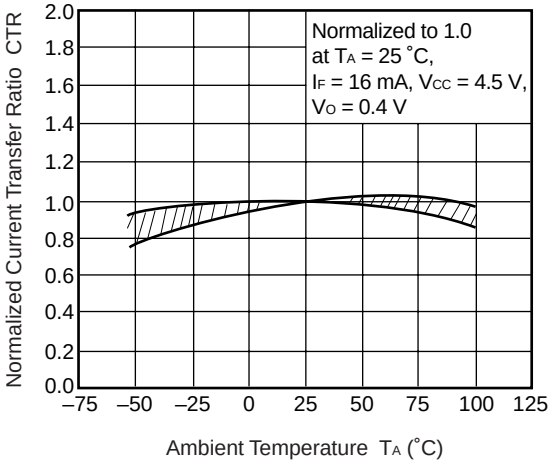
OUTPUT CURRENT vs. OUTPUT VOLTAGE



CURRENT TRANSFER RATIO vs. FOWARD CURRENT



NORMALIZED CURRENT TRANSFER RATIO vs. AMBIENT TEMPERATURE



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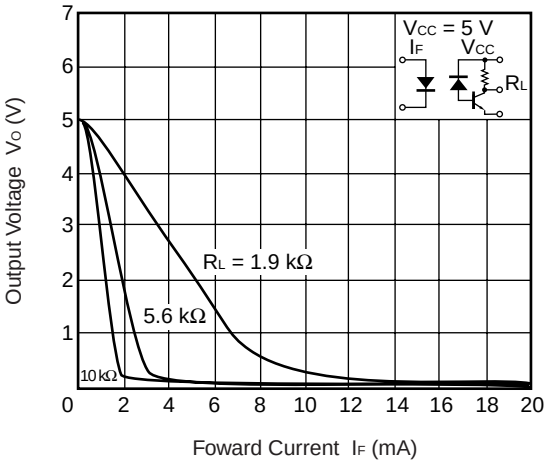
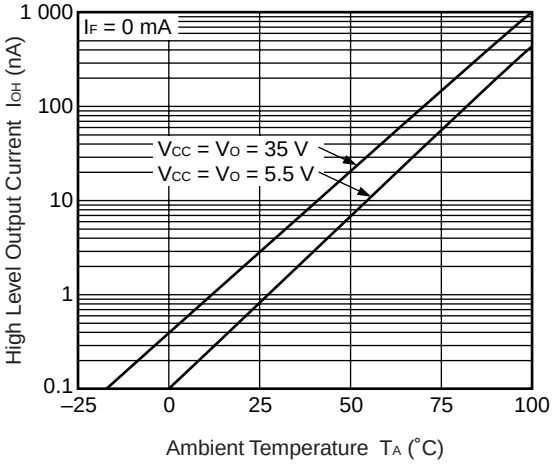
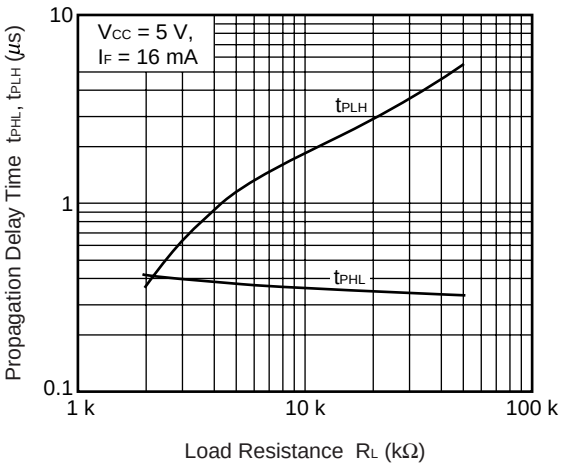
OUTPUT VOLTAGE vs.
FOWARD CURRENT



HIGH LEVEL OUTPUT CURRENT
vs. AMBIENT TEMPERATURE



PROPAGATION DELAY TIME,
vs. LORD RESISTANCE



PROPAGATION DELAY TIME,
vs. AMBIENT TEMPERATURE