

## HIGH ISOLATION VOLTAGE AC INPUT LARGE FORWARD AC INPUT TYPE 6 PIN PHOTOCOUPLER

PS2625  
PS2625L  
PS2626  
PS2626L

### FEATURES

- **HIGH ISOLATION VOLTAGE**  
BV: 5 k V<sub>r.m.s.</sub> MIN
- **AC INPUT RESPONSE**
- **LARGE FORWARD INPUT (current)**  
I<sub>F</sub>: ±150 mA MAX
- **HIGH COLLECTOR TO EMITTER VOLTAGE**  
V<sub>CEO</sub>: 80 V MIN
- **HIGH SPEED SWITCHING**  
t<sub>r</sub> = 3 μs, t<sub>f</sub> = 5 μs TYP

### DESCRIPTION

PS2625, PS2626, PS2625L and PS2626L are optically coupled isolators containing a GaAs light emitting diode and a NPN silicon phototransistor. PS2625 and PS2626 are in a plastic DIP (Dual In-line Package). PS2625L and PS2626L are lead bending type (Gull-wing) for surface mount. PS2625 and PS2625L have a base pin. PS2626 and PS2626L have no base pin.

### APPLICATIONS

Interface circuit for various instrumentations and control equipments.

- **AC LINE / DIGITAL LOGIC**
- **DIGITAL LOGIC / DIGITAL LOGIC**
- **TWISTED PAIR LINE RECEIVER**
- **TELEPHONE / TELEGRAPH LINE RECEIVER**
- **HIGH FREQUENCY POWER SUPPLY  
FEEDBACK CONTROL**

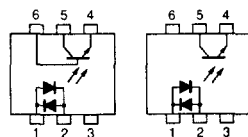
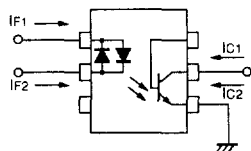
### ELECTRICAL CHARACTERISTICS (T<sub>A</sub> = 25°C)

PART NUMBER			PS2625, PS2625L, PS2626, PS2626L		
SYMBOLS	PARAMETERS	UNITS	MIN	TYP	MAX
Diode	V <sub>F</sub>	Forward Voltage, I <sub>F</sub> = ±100 mA	V	1.3	1.7
	C	Junction Capacitance, V = 0, f = 1.0 MHz	pF	140	
Transistor	I <sub>CEO</sub>	Collector to Emitter Dark Current, V <sub>CE</sub> = 80 V, I <sub>F</sub> = 0	nA		100
	BV <sub>CEO</sub>	Collector to Emitter Breakdown Voltage, I <sub>C</sub> = 1 mA, I <sub>B</sub> = 0	V	80	
	BV <sub>ECO</sub>	Emitter to Collector Breakdown Voltage, I <sub>E</sub> = 100 μA, I <sub>B</sub> = 0	V	7	
Coupled	CTR	Current Transfer Ratio, I <sub>F</sub> = ±100 mA, V <sub>CE</sub> = 3 V	%	20	50
	CTR <sub>1</sub> /CTR <sub>2</sub>	CTR Ratio <sup>1</sup> , I <sub>F</sub> = ±100 mA, V <sub>CE</sub> = 3 V		0.3	3.0
	V <sub>CE(sat)</sub>	Collector Saturation Voltage, I <sub>F</sub> = ±100 mA, I <sub>C</sub> = 4 mA	V		0.3
	R <sub>1-2</sub>	Isolation Resistance, V <sub>IN-OUT</sub> = 1.0 kV	Ω	10 <sup>11</sup>	
	C <sub>1-2</sub>	Isolation Capacitance, V = 0, f = 1.0 MHz	pF		0.6
	t <sub>r</sub>	Rise Time <sup>2</sup> , V <sub>CC</sub> = 5 V, I <sub>C</sub> = 2 mA	μs		3
	t <sub>f</sub>	Fall Time <sup>2</sup> , V <sub>CC</sub> = 5 V, I <sub>C</sub> = 2 mA	μs		5

Notes:

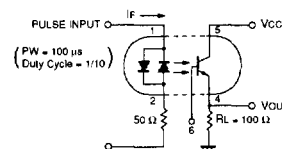
$$1. CTR_1 = \frac{I_{C1}}{I_{F1}}, CTR_2 = \frac{I_{C2}}{I_{F2}}$$

2. Test Circuit for Switching Time

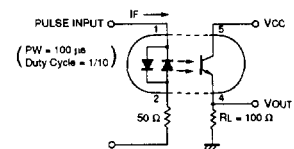


PS2625

PS2626



PS2625



PS2626

**ABSOLUTE MAXIMUM RATINGS<sup>1</sup>** (T<sub>A</sub> = 25°C)

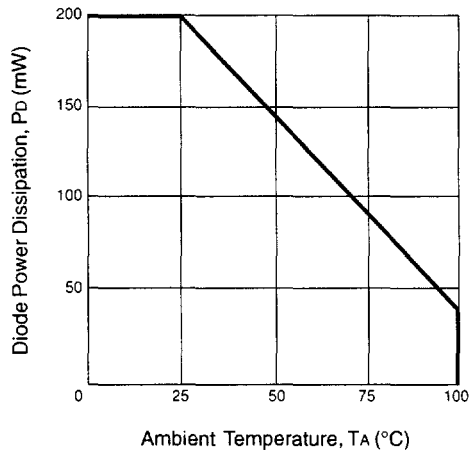
SYMBOLS	PARAMETERS	UNITS	RATINGS
Diode			
I <sub>F</sub>	Forward Current (DC)	mA	±150
P <sub>D</sub>	Power Dissipation	mW	200
I <sub>F</sub> (PEAK)	Peak Forward Current (PW = 100 μs, Duty Cycle 1%)	A	±1
Transistor			
V <sub>CEO</sub>	Collector to Emitter Voltage	V	80
V <sub>ECO</sub>	Emitter to Collector Voltage	V	7
I <sub>C</sub>	Collector Current	mA	50
P <sub>C</sub>	Power Dissipation	mW	150
Coupled			
BV	Isolation Voltage <sup>2</sup>	V <sub>r.m.s.</sub>	5000
T <sub>STG</sub>	Storage Temperature	°C	-55 to +150
T <sub>OP</sub>	Operating Temperature	°C	-55 to +100

Notes:

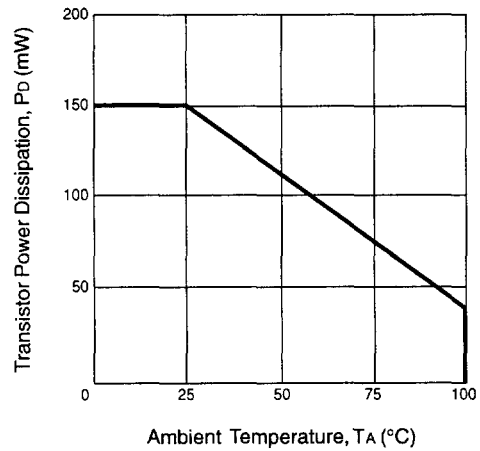
1. Operation in excess of any one of these parameters may result in permanent damage.
2. AC voltage for 1 minute at T<sub>A</sub> = 25° C, RH = 60% between input (Pin No. 1, 2, 3 Common) and output (Pin No. 4, 5, 6 Common).

**TYPICAL PERFORMANCE CURVES** (T<sub>A</sub> = 25°C)

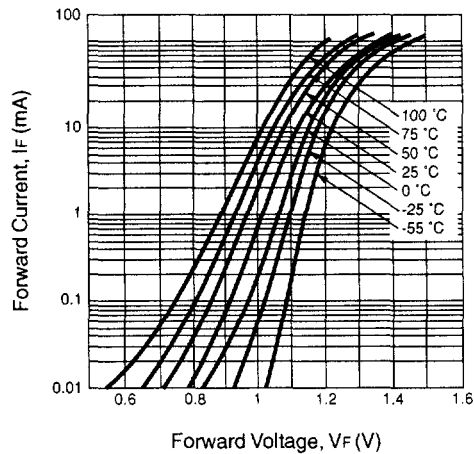
**DIODE POWER DISSIPATION vs. AMBIENT TEMPERATURE**



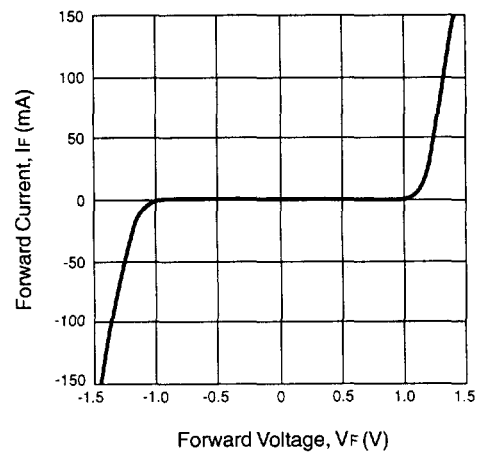
**TRANSISTOR POWER DISSIPATION vs. AMBIENT TEMPERATURE**



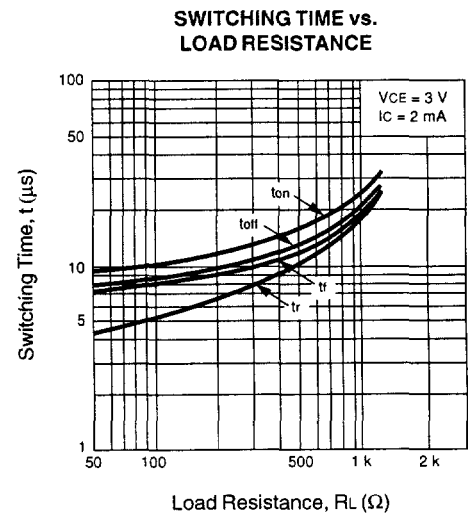
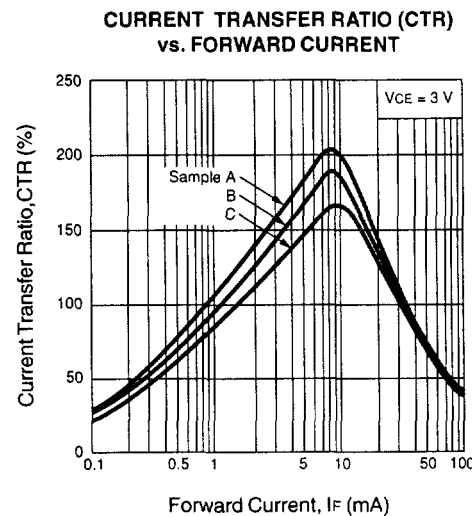
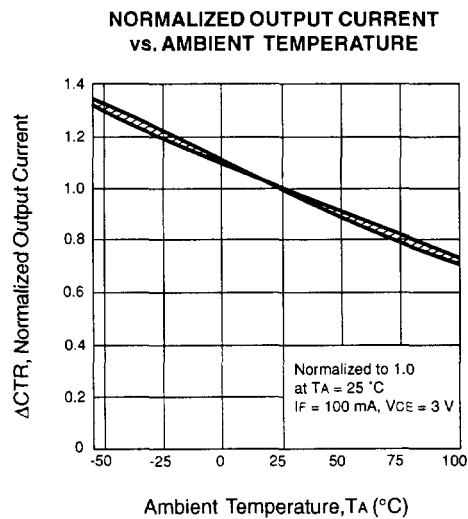
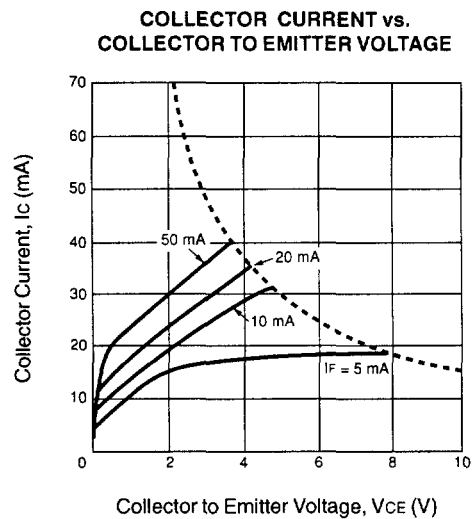
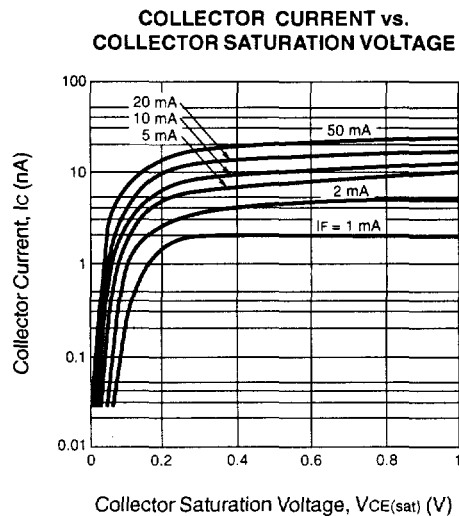
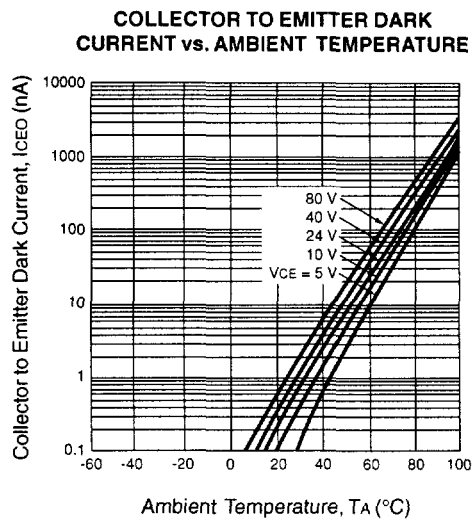
**FORWARD CURRENT vs. FORWARD VOLTAGE**



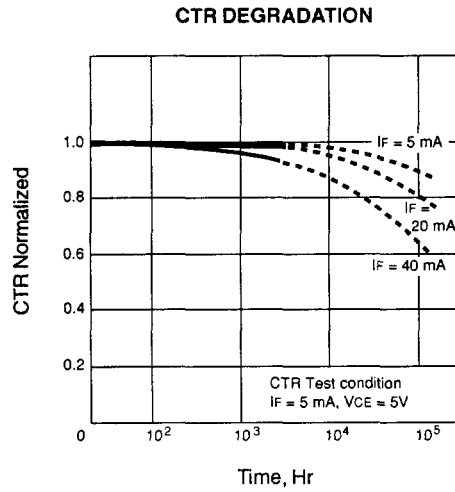
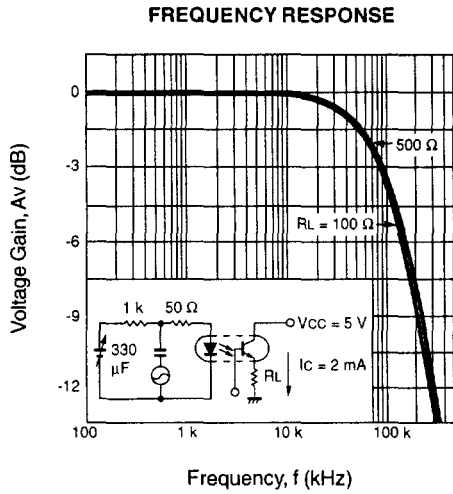
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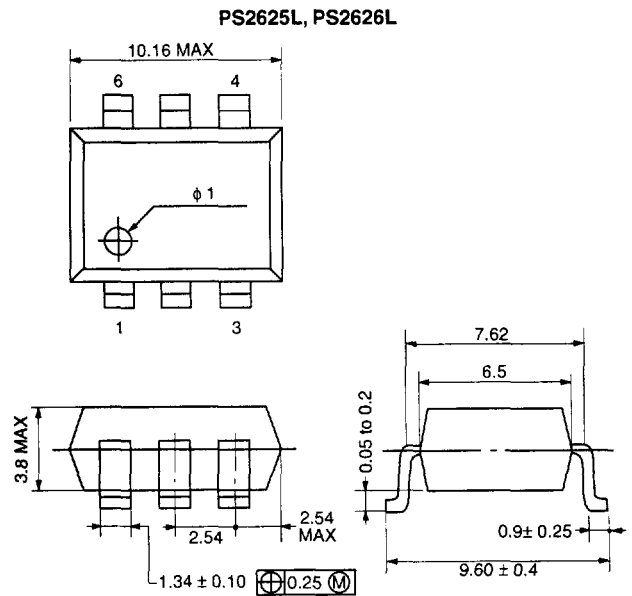
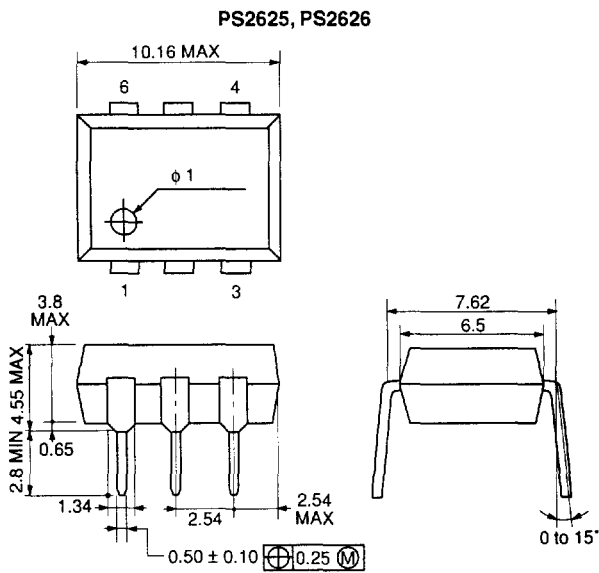
TYPICAL PERFORMANCE CURVES (TA = 25°C)



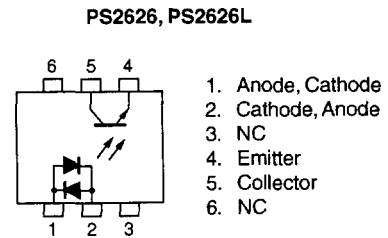
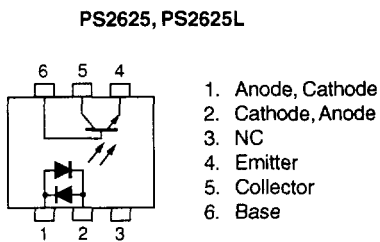
**TYPICAL PERFORMANCE CURVES** ( $T_A = 25^\circ\text{C}$ )



**OUTLINE DIMENSIONS** (Units in mm)



**PIN CONNECTIONS** (Units in mm)



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