

FEATURES

- **HIGH ISOLATION VOLTAGE**
BV: 5 k Vr.m.s. MIN
- **AC INPUT RESPONSE**
- **HIGH SPEED SWITCHING**
 $t_r, t_f = 100 \mu s$ TYP
- **ULTRA HIGH CURRENT TRANSFER RATIO**
CTR: 2000% TYP

DESCRIPTION

PS2607, PS2607L, PS2608, and PS2608L are optically coupled isolators containing a GaAs light emitting diode and an NPN silicon Darlington-connected phototransistor. PS2607, PS2608 are in a plastic DIP (Dual In-Line Package). PS2607L, PS2608L are lead bending type (Gull-wing) for surface mount. PS2607 and PS2607L have a base pin and PS2608 and PS2608L have no base pin.

APPLICATIONS

Interface circuit for various instrumentations, and control equipment.

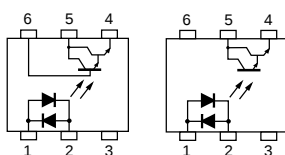
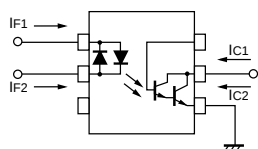
- **AC LINE/DIGITAL LOGIC**
- **DIGITAL LOGIC/DIGITAL LOGIC**
- **TWISTED PAIR LINE RECEIVER**
- **TELEPHONE/TELEGRAPH LINE RECEIVER**
- **HIGH FREQUENCY POWER SUPPLY FEEDBACK CONTROL**

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ C$)

PART NUMBER			PS2607, PS2607L, PS2608, PS2608L		
SYMBOLS	PARAMETERS	UNITS	MIN	TYP	MAX
Diode	V_F	Forward Voltage, $I_F = \pm 10$ mA	V	1.1	1.4
	C	Junction Capacitance, $V = 0$, $f = 1.0$ MHz	pF	60	
Transistor	I_{CEO}	Collector to Emitter Dark Current, $V_{CE} = 40$ V, $I_F = 0$	nA		400
	BV_{CEO}	Collector to Emitter Breakdown Voltage, $I_C = 1$ mA, $I_B = 0$	V	40	
	BV_{ECO}	Emitter to Collector Breakdown Voltage, $I_E = 100 \mu A$, $I_B = 0$	V	6	
Coupled	CTR	Current Transfer Ratio, $I_F = \pm 1$ mA, $V_{CE} = 2$ V	%	200	2000
	CTR1/CTR2	CTR (Ratio) ¹ , $I_F = \pm 1$ mA, $V_{CE} = 2$ V		0.3	1.0 3.0
	$V_{CE(sat)}$	Collector Saturation Voltage, $I_F = \pm 1$ mA, $I_C = 2$ mA	V		1.0
	R1-2	Isolation Resistance, $V_{in-out} = 1.0$ k V	Ω	10	
	C1-2	Isolation Capacitance, $V = 0$, $f = 1.0$ MHz	pF		0.6
	t_r	Rise Time ² , $V_{CC} = 10$ V, $I_C = 10$ mA	μs		100
	t_f	Fall Time ² , $V_{CC} = 10$ V, $I_C = 10$ mA	μs		100

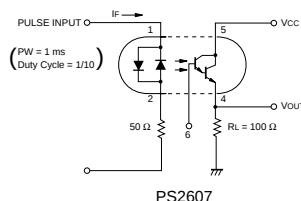
1. $CTR_1 = \frac{I_{C1}}{I_{F1}}$ $CTR_2 = \frac{I_{C2}}{I_{F2}}$

2. Test Circuit for Switching Time

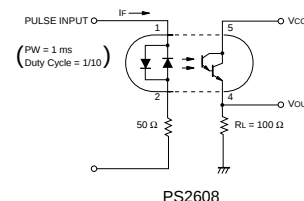


PS2607

PS2608



PS2607



PS2608

ABSOLUTE MAXIMUM RATINGS¹ (T_A = 25°C)

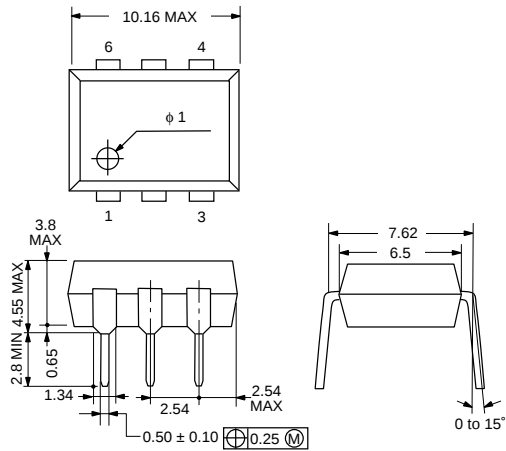
SYMBOLS	PARAMETERS	UNITS	RATINGS
Diode			
I _F	Forward Current (DC)	mA	80
P _D	Power Dissipation	mW	150
I _F (Peak)	Peak Forward Current PW = 100 μs, Duty Cycle 1%	A	1
Transistor			
V _{CEO}	Collector to Emitter Voltage	V	40
V _{ECO}	Emitter to Collector Voltage	V	6
I _C	Collector Current	mA	200
P _C	Power Dissipation	mW	200
Coupled			
BV	Isolation Voltage ²	V _{r.m.s.}	5000
T _{STG}	Storage Temperature	°C	-55 to +150
T _{OP}	Operating Temperature	°C	-55 to +100

Notes:

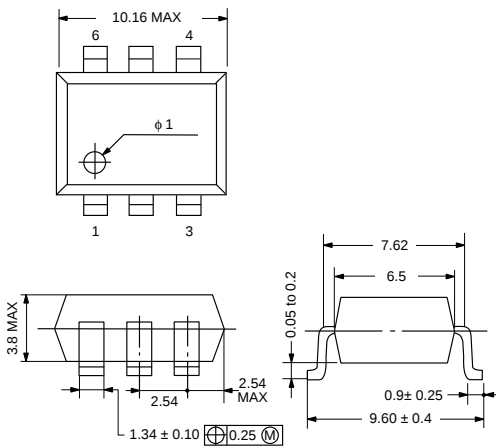
1. Operation in excess of any one of these parameters may result in permanent damage.
2. AC voltage for 1 minute at T_A = 25 °C, RH = 60 % between input (Pins No. 1, 2, 3 Common) and output (Pins No. 4, 5, 6 Common).

OUTLINE DIMENSIONS (Units in mm)

PS2607, PS2608

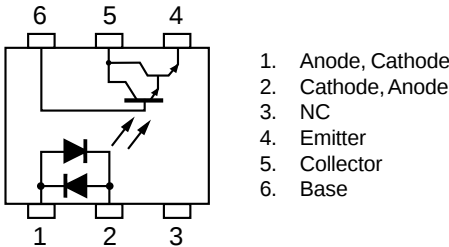


PS2607L, PS2608L

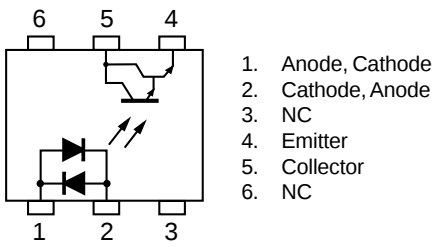


PIN CONNECTIONS (Top View)

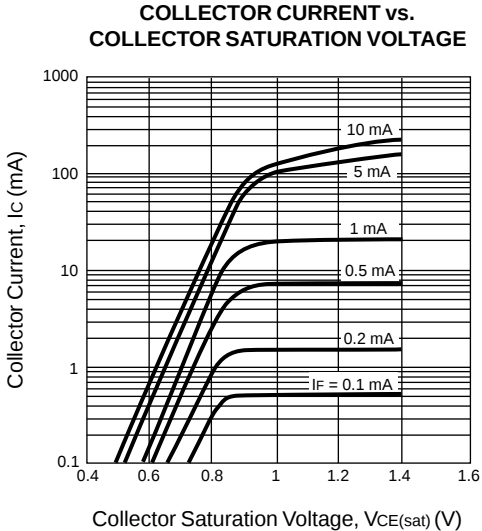
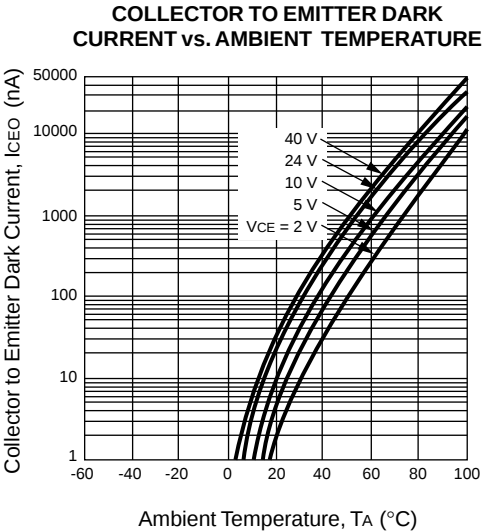
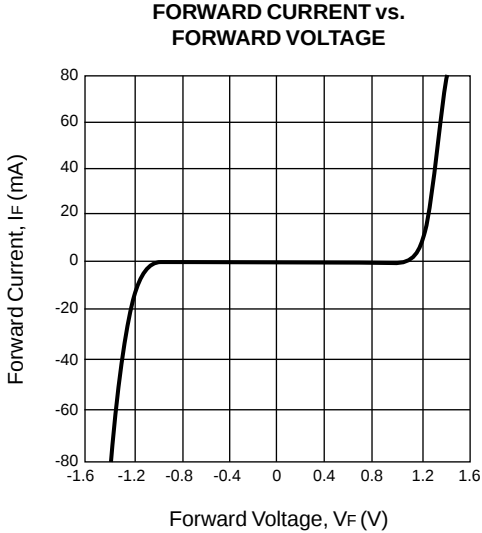
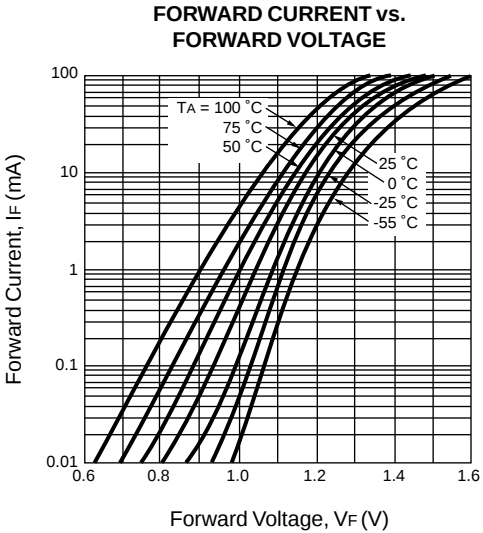
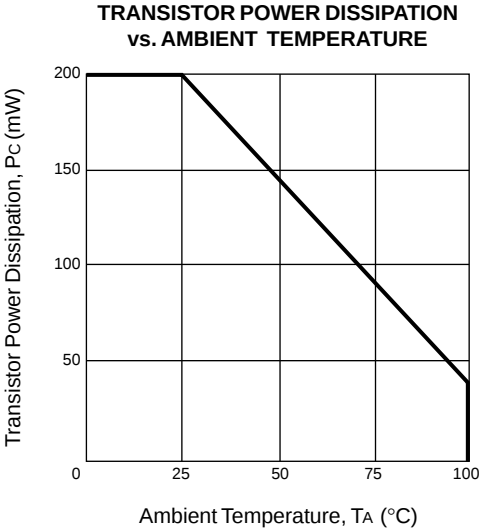
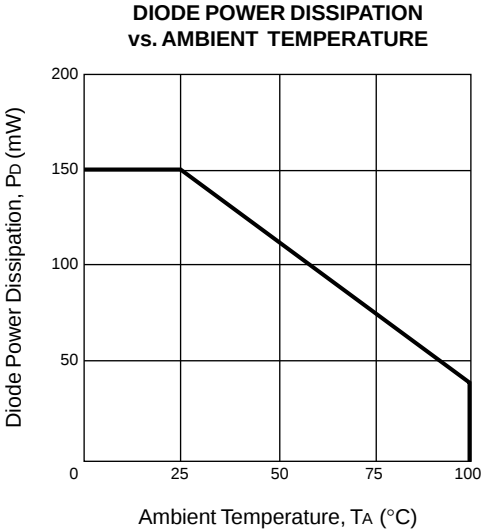
PS2607, PS2607L



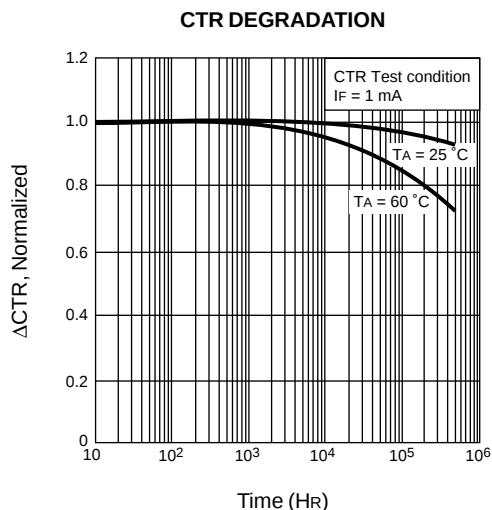
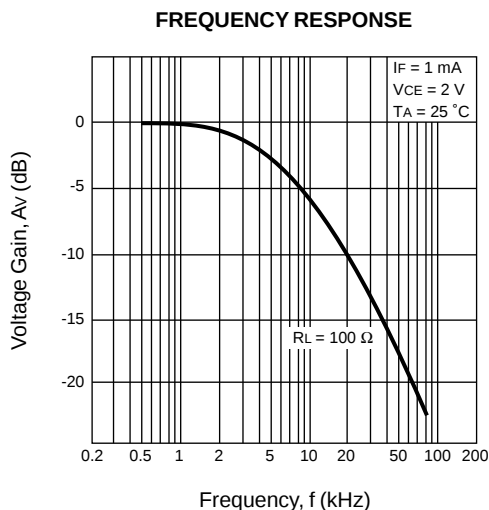
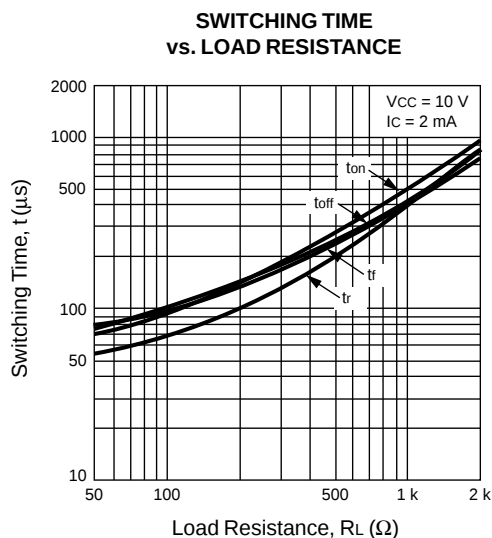
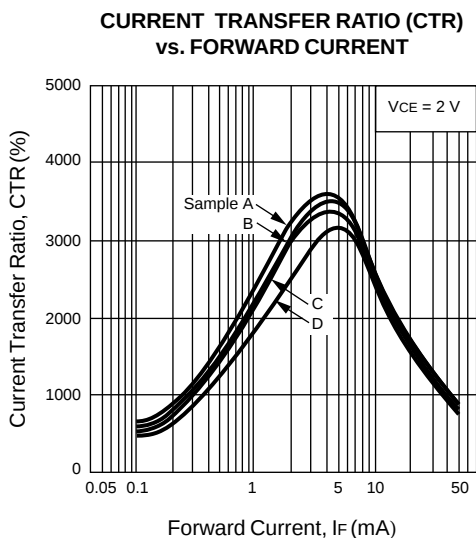
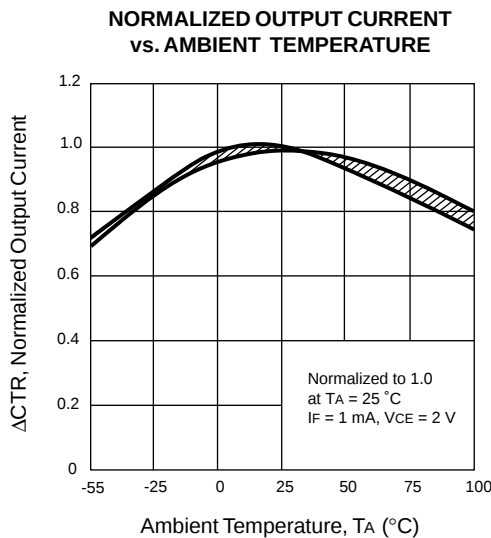
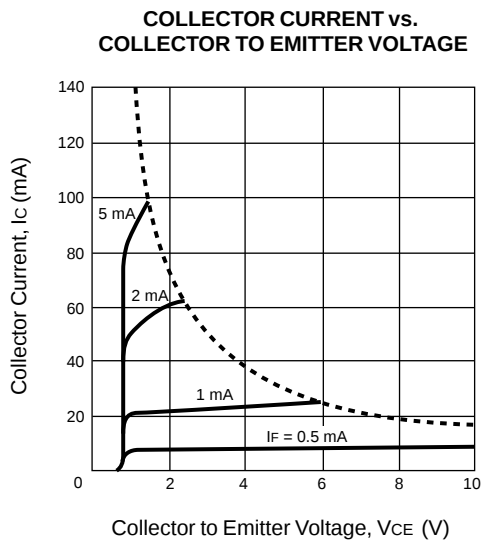
PS2608, PS2608L



TYPICAL PERFORMANCE CURVES (T_A = 25 °C)



TYPICAL PERFORMANCE CURVES (T_A = 25 °C)



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