

HIGH SENSITIVITY PHOTO TRIAC OUTPUT TYPE 5 PIN PHOTOCOUPLER

PS3601
PS3601L
PS3602
PS3602L

FEATURES

- **LOW INPUT TRIGGER CURRENT**
IFT: 5 mA MAX
- **HIGH CRITICAL RATE OF RISE OF OFF-STATE VOLTAGE**
dV/dt: 500 V/μs TYP
- **HIGH REPETITIVE PEAK OFF-STATE VOLTAGE**
PS3601, PS3601L: V_{DRM}: 600 V MIN
PS3602, PS3602L: V_{DRM}: 400 V MIN
- **HIGH ISOLATION VOLTAGE**
BV: 5000 V_{r.m.s.} MIN
- **TAPING PRODUCT NAME**
PS3601L-E3, PS3602L-E3

DESCRIPTION

PS3601, PS3601L, PS3602 and PS3601L are optically coupled isolators containing a GaAs light emitting diode and photo triac. PS3601 and PS3602 are in a plastic DIP (Dual In-Line Package) and PS3601L and PS3602L is lead bending type (Gull-wing) for surface mounting.

APPLICATIONS

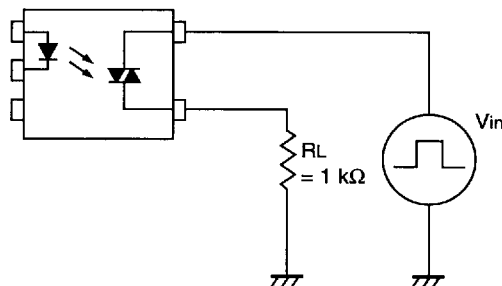
- **SSR**
- **PROGRAMMABLE CONTROLLER**
- **ELECTRIC HOME APPLIANCE**
- **FAN HEATER**

ELECTRICAL CHARACTERISTICS (T_A = 25°C)

PART NUMBER				PS3601, PS3601L, PS3602, PS3602L		
	SYMBOLS	PARAMETERS	UNITS	MIN	TYP	MAX
Diode	V _F	Forward Voltage, I _F = 10 mA	V		1.1	1.4
	I _R	Reverse Current, V _R = 5 V	μA			5
	C _i	Capacitance, V = 0, f = 1 MHz	pF		30	
Photo triac	I _{DRM}	Peak Off-State Current, V _{DRM} = Rated	nA			100
	V _{TM}	Peak On-State Voltage, I _{TM} = ± Rated	V		2.3	3
	I _H	Holding Current	mA		0.4	
	dV/dt	Critical Rate of Rise of Off-State Voltage, V _{in} = ± 1/√2 Rated	V/μs	200	500	
Coupled	I _{FT}	Trigger Input Current, V = ± 6 V	mA		3	5
	R ₁₋₂	Isolation Resistance, V _{in-out} = 1 k Vdc	Ω	10 ¹¹		
	C ₁₋₂	Isolation High Capacitance, V = 0, f = 1 MHz	pF		0.4	

Notes:

1. Test Circuit for Critical Rate of Rise of Off-State Voltage



ABSOLUTE MAXIMUM RATINGS¹ ($T_A = 25^\circ\text{C}$)

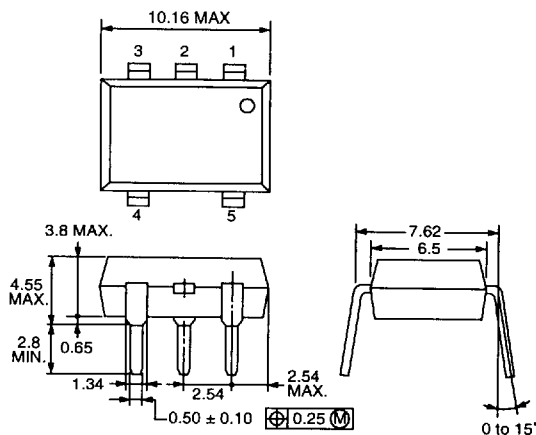
SYMBOLS	PARAMETERS	UNITS	RATINGS	
			PS3601 PS3601L	PS3602 PS3602L
Diode				
VR	Reverse Voltage	V	6	6
IF	Forward Current	mA	80	80
ΔPd/°C	Power Dissipation Derating	mW/°C	1.5	1.5
PD	Power Dissipation	mW	150	150
IFP	Peak Forward Current PW = 100 μs, Duty Cycle 1%	A	1	1
Photo triac				
VDRM	Repetitive Peak Off-State Voltage	V	600	400
IT(RMS)	RMS On State Current	mA	100	100
ITSM	Peak 1 Cycle Surge on Current ²	A	0.5	0.5
ΔPc/°C	Power Dissipation Derating	mW/°C	1.5	1.5
PC	Power Dissipation	mW	150	150
Coupled				
BV	Isolation Voltage ³	V _{r.m.s.}	5000	
TSTG	Storage Temperature	°C	-55 to +125	
TOP	Operating Temperature	°C	-40 to +100	

Notes:

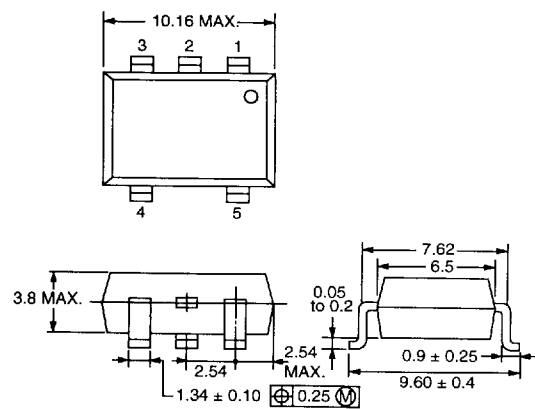
- Operation in excess of any one of these parameters may result in permanent damage.
- Sine Wave $f = 50\text{ Hz}$
- AC voltage for 1 minute at $T_A = 25^\circ\text{C}$, RH = 60 % between input (pin No. 1, 2, 3 Common) and output (pin No. 4, 5 Common).

OUTLINE DIMENSIONS (Units in mm)

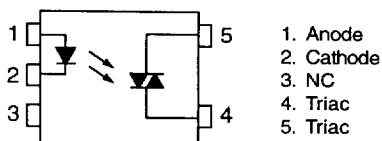
PS3601, PS3602



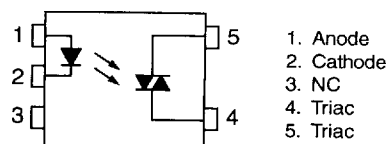
PS3601L, PS3602L

**PIN CONNECTIONS** (Top View)

PS3601, PS3602

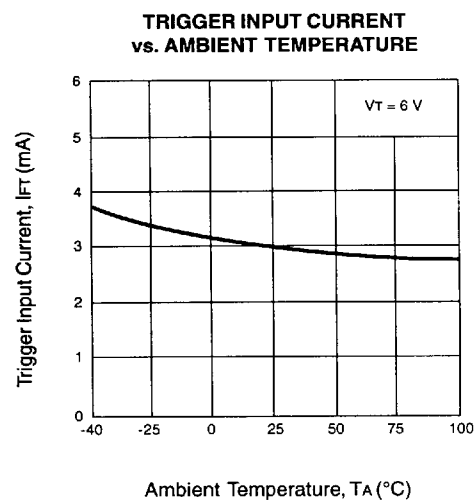
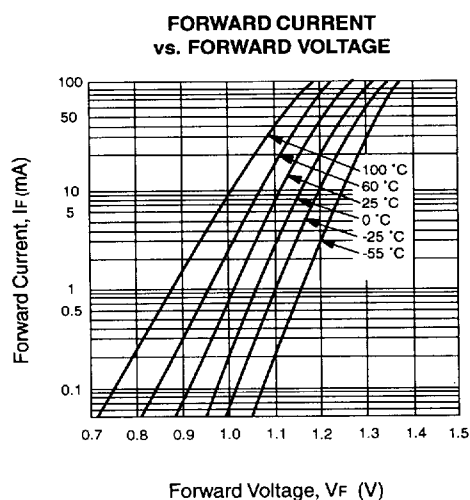
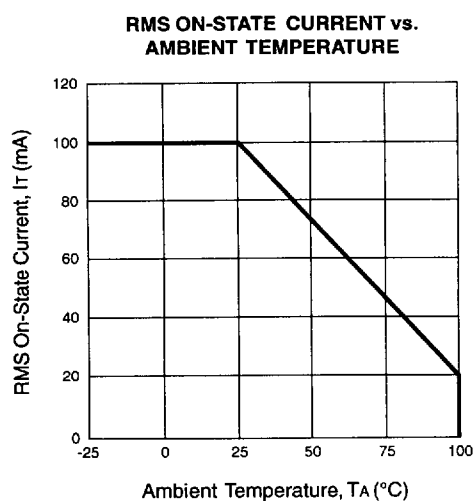
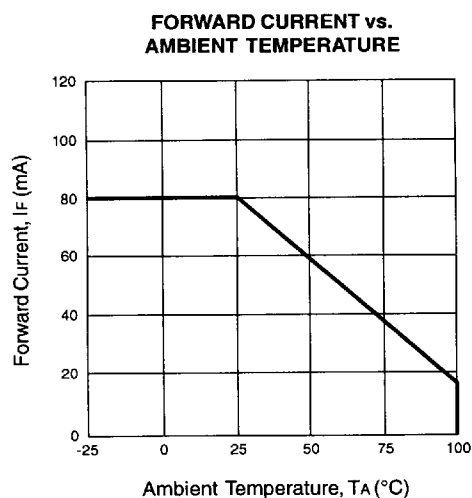


PS3601L, PS3602L



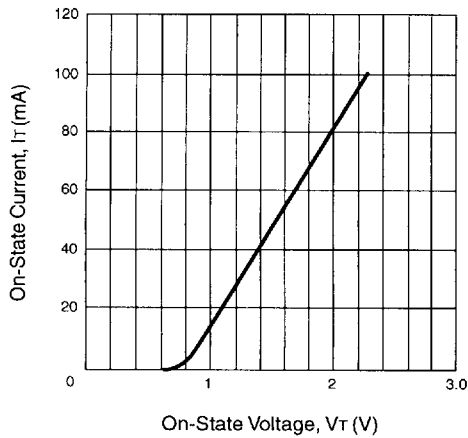
RECOMMENDED OPERATING CONDITIONS

PART NUMBER			PS3601, -L, PS3602, -L		
SYMBOL	PARAMETERS	UNITS	MIN	TYP	MAX
V _{AC}	Supply Voltage	V _{AC}			240
	PS3601				120
I _F	Forward Current	mA	10	15	20
T _{OP}	Operating Temperature	°C	-25		+85

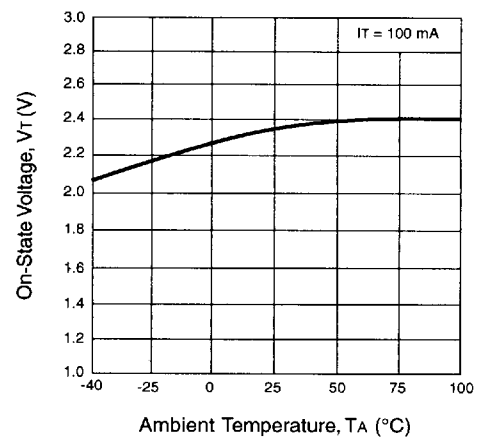
TYPICAL PERFORMANCE CURVES (T_A = 25 °C)

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

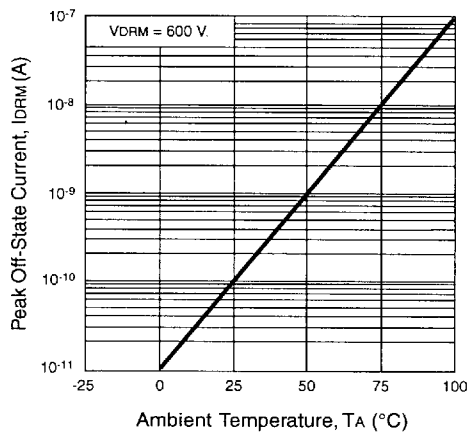
ON-STATE CURRENT vs. ON-STATE VOLTAGE



ON-STATE VOLTAGE vs. AMBIENT TEMPERATURE



PEAK OFF-STATE CURRENT vs. AMBIENT TEMPERATURE



TURN-ON TIME vs. FORWARD CURRENT

