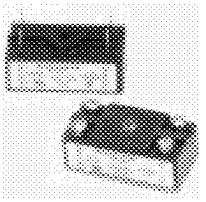
Solid State AC Relay

TELEDYNE RELAYS
Commercial DIP Solid State Relays

601 Series
OPTICALLY ISOLATED 5 AND 10A/280 VAC

Input Control Voltage Rating	Output Voltage Rating		Output Load Current Part Numbers*	
	Continuous (RMS)	Transient (PEAK)	5A	10A
3-32 Vdc	280 Vac	500	601-1	601-2
		600	601-1H	601-2H

*See Note 1



ELECTRICAL SPECIFICATIONS

(25°C UNLESS OTHERWISE SPECIFIED)

INPUT (CONTROL) SPECIFICATIONS

Parameter	Min	Max	Units
Control Voltage Range	3.0	32.0	Vdc
Input Current (-40°C to 85°C, See Figure 3)		12.0	mA
Must Turn-On Voltage (-40°C to 85°C)	3.0		Vdc
Must Turn-Off Voltage (-40°C to 85°C)		1.0	Vdc
Reverse Voltage Protection		-32	Vdc

OUTPUT (LOAD) SPECIFICATIONS

Parameter	Part Number	Min	Max	Units
Load Voltage Rating		25	280	Vrms
Output Current Rating (See Figure 1 or 2)	601-1	0.25	5.0	Arms
	601-2	0.25	10.0	
Frequency Range		47	70.0	Hz
Over Voltage Range	601-1,-2	500		Vpeak
	601-1H,-2H	600		
On-State Voltage Drop At Rated Current (See Note 4)			1.5	Vrms
Surge Current Rating (16 ms) (See Figure 4 and Note 2)			1000	%
Turn-On Time (60 Hz)			0.5	Cycle
Turn-Off Time (60 Hz)			1.0	Cycle
Off-State Leakage @ Rated Load Voltage			9.0	mArms
Off-State dV/dt (See Note 1)		200		V/µs
Isolation (Input to Output, Input to Case & Output to Case)		10^9		Ohms
Dielectric Strength (Input to Output, Input to Case & Output to Case)		1500		Vac
Capacitance (Input to Output)			15.0	pF
Junction Temperature (TJ)			125	°C
Thermal Resistance	(θ_{JA}) 601-1		19.0	°C/W
	(θ_{JC}) 601-2		4.8	

FEATURES/BENEFITS

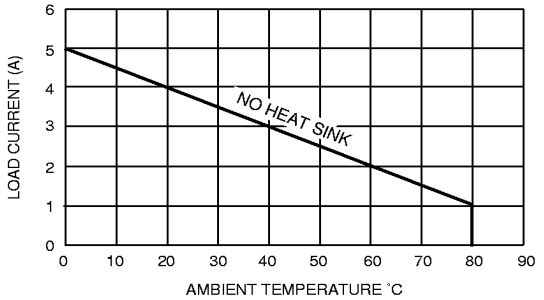
- Optical Isolation - Isolates Control Elements From Load Transients
- Switches High & Low Voltages and Currents - Voltages from 25 to 280 Vrms. Currents from 0.25 to 5 and 10 Arms.
- Floating Output - Eliminates ground loops and signal level ground noise.
- Zero Voltage Turn-On - Reduces switching transient noise
- Low Off-State Leakage Current -High off state impedance.
- High Dielectric Strength - For safety and protection of signal level circuits.
- Broad Operating Temperature Range - -40˚C to 85˚C
- UL and CUL registered. File Number E55197

DESCRIPTION

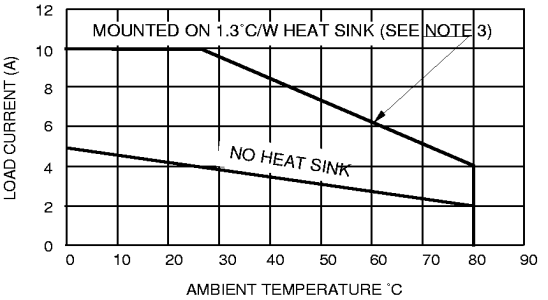
This series of AC SSRs has been designed to incorporate custom integrated circuits to replace conventional discrete circuitry. The result is a relay with low component count, high performance, reliability, and low cost. Optical coupling between control and load provides a minimum of 1500 Vrms input/output isolation. The output circuitry includes built-in snubber protection to guarantee high immunity from false triggering and reliable switching of low power factor loads.These relays are available in three terminal styles for optimum mounting flexibility. Pin terminals mount directly on a printed circuit board, screw terminals or quick disconnect terminals are for chassis or heat sink mounting.

SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE.

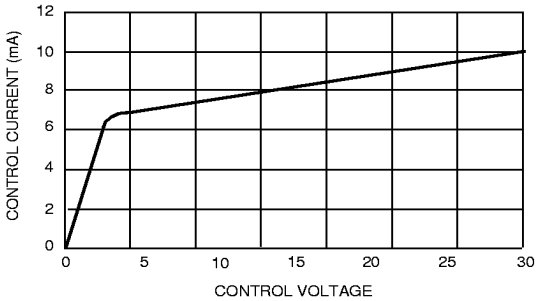
CHARACTERISTIC CURVES



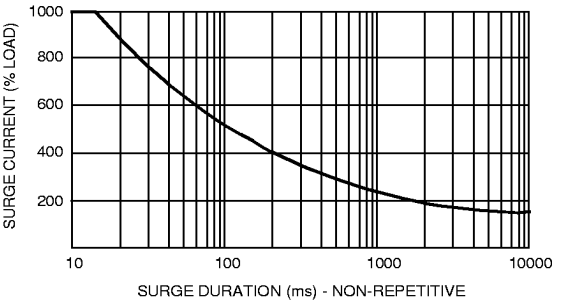
MAXIMUM LOAD CURRENT DERATING VS AMBIENT TEMPERATURE 601-1
FIGURE 1



MAXIMUM LOAD CURRENT VS AMBIENT TEMPERATURE 601-2
FIGURE 2

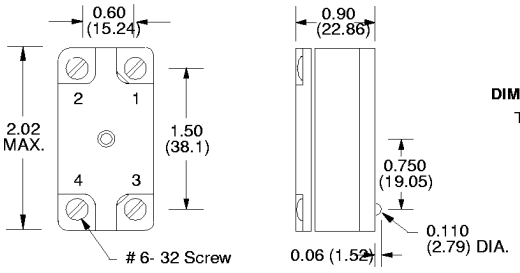


INPUT CURRENT VS CONTROL VOLTAGE
FIGURE 3



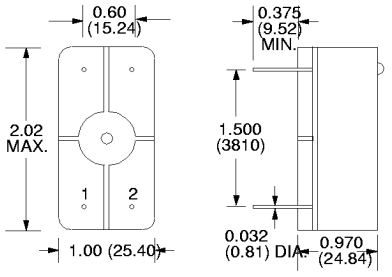
MAXIMUM SURGE AS FUNCTION OF LOAD VOLTAGE
FIGURE 4

MECHANICAL SPECIFCATIONS



601-2

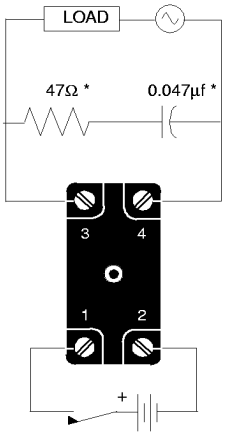
DIMENSIONS ARE SHOWN IN INCHES (MILLIMETERS)
Tolerances ± 0.015 (0.38) unless otherwise specified



601-1

- Operating Temperature -40°C to +85°C
- Storage Temperature -40°C to +100°C
- Weight: 3.0 grams maximum
- Terminals & Pins: Brass, Tin Plated
- Case Material: Epoxy, self extinguishing Aluminum Base plate

WIRING DIAGRAM



* Optional Snubber Network

NOTES:

1. The basic part number provides for screw terminals for 601-2 and pins for 601-1. For quick disconnect terminals add suffix "Q" or "QQ" for double quick disconnects on 601-2.
2. Triac may lose blocking capability during or after a large surge until T_J falls below maximum.
3. Relays mounted on heat sink with silicon grease.
4. On-State Voltage excludes commutating spikes.