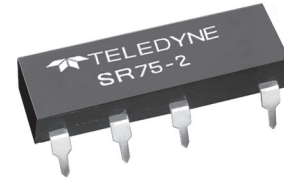


Part Number*	Relay Description
SR75-2	Solid-State Relay with Terminals for Through-Hole Mount
SR75-2S	Solid-State Relay with Terminals for Surface Mount

\* A 'W' or 'T' suffix denoting the S Teledyne reliability screening level, must be added to the part number.



### ELECTRICAL SPECIFICATIONS

(-55°C TO 105°C, Ambient Temperature Unless Otherwise Specified)

#### INPUT (CONTROL) SPECIFICATIONS

	Min	Max	Units
Control Voltage Range (See Note 6)	3.8	32.0	Vdc
Input Current @ 5 Vdc (See Figure 1)		11.0	mA
Must Turn-On Voltage (See Note 7)	3.8		Vdc
Must Turn-Off Voltage		1.5	Vdc
Reverse Voltage Protection		-32.0	Vdc

#### OUTPUT (LOAD) SPECIFICATION

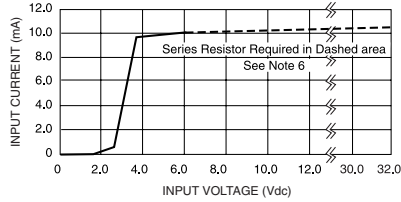
	Min	Max	Units
Load Voltage Rating		300	Vdc
Transient Blocking Voltage		320	Vdc
Output Current Rating (See Figure 2)		0.75	Adc
On Resistance (See Figure 3)		2.0	Ohm
Leakage Current at Rated Voltage		100	µA
Turn-On Time		4.5	ms
Turn-Off Time		0.5	ms
dV/dt @ 60V (See Note 8)		100	V/µs
Electrical System Spike (See Note 8)		± 600	Vpk
Output Capacitance @ 100 KHz, 25 Vdc (See Note 8)	250		pF
Input to Output Capacitance at 1 KHz (See Note 8)		5	pF
Dielectric Strength (See Note 8)	1000		Vrms
Insulation Resistance (See Note 8)	10 <sup>8</sup>		Ohm
Junction Temperature		130	°C
Thermal Resistance (Junction to Ambient)		90	°C/W
Solderability (10 sec)		260	°C

### FEATURES/BENEFITS

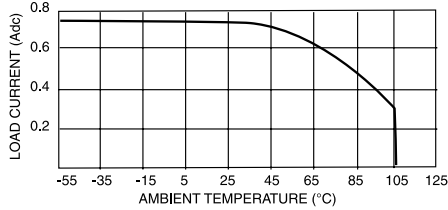
- Short-Circuit Protected: Prevents damage to system components, assemblies and system wiring. Can be connected to protect AC or DC loads (AC with diode bridge)
- Optical Isolation: Isolates control circuits from load transients  
Eliminates ground loops and signal ground noise
- Low Off-State Leakage: For high off-state impedance
- Switches High Voltages: To 300 Vdc
- Switches High Currents: To 0.75 Adc
- High Noise Immunity: Control signals isolated from switching noise
- High Dielectric Strength: For safety and for protection of control and signal level circuits

### DESCRIPTION

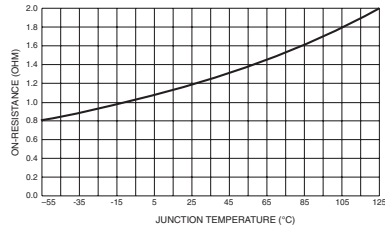
The SR75-2 solid-state relay utilizes a power FET switch that is protected against overload and short-circuit currents. The short-circuit protection feature not only provides protection should a short or overload occur while the relay is on, but will also provide protection should the relay be switched into a short. Once the protection trips the relay, it will remain off until reset by cycling the input control line. Using the SR75-2 to switch power sources and loads can prevent fires, damage to system assemblies and system wiring. The power FET output offers low "ON" resistance and can switch loads in either the high or the low side of the power line. The SR75-2 is packaged in a 16-pin DIP package with either surface-mount or through-hole mounting available.



**CONTROL CURRENT VS VOLTAGE**  
**FIGURE 1**

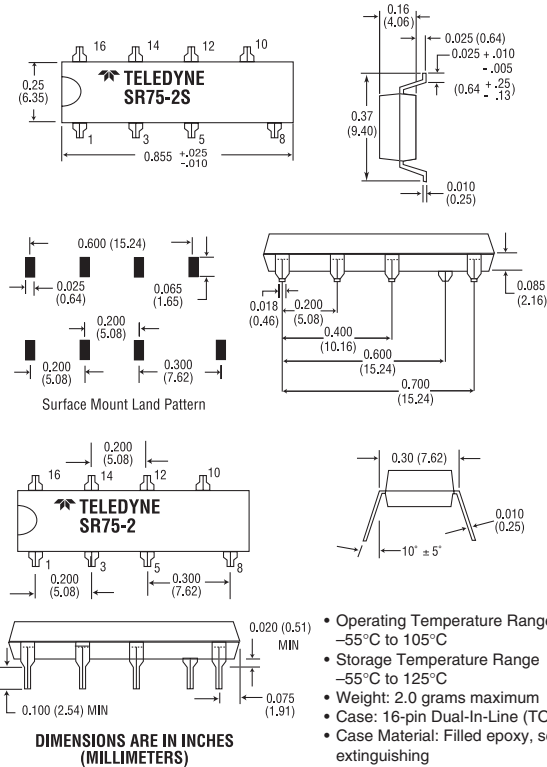


**LOAD CURRENT DERATING CURVE**  
**FIGURE 2 (SEE NOTE 5)**

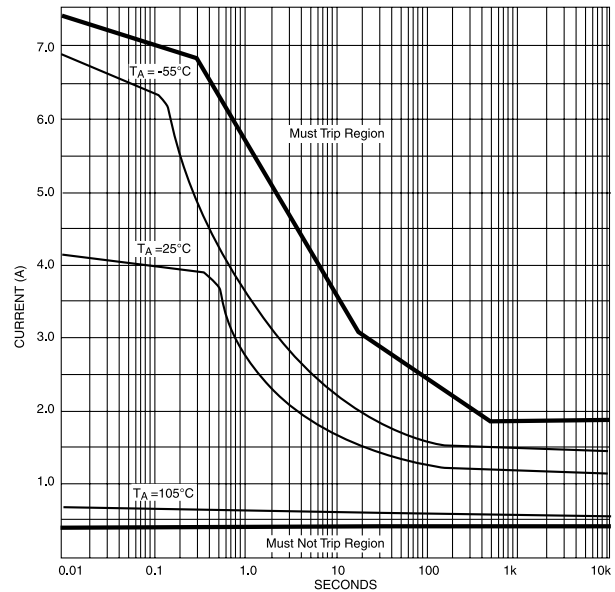


**TYPICAL ON RESISTANCE VS T<sub>J</sub>**  
**FIGURE 3**

**MECHANICAL SPECIFICATIONS**

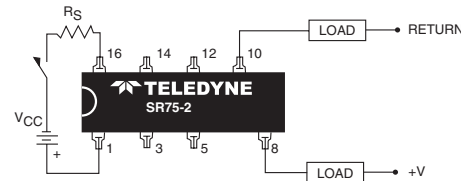


- Operating Temperature Range -55°C to 105°C
- Storage Temperature Range -55°C to 125°C
- Weight: 2.0 grams maximum
- Case: 16-pin Dual-In-Line (TO-116)
- Case Material: Filled epoxy, self-extinguishing

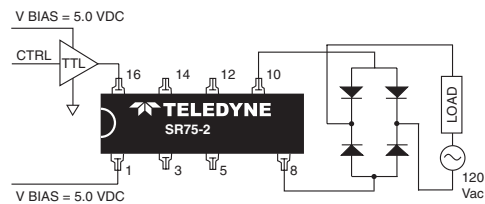


**TRIP CURRENT VS TIME**  
**FIGURE 4**

**WIRING CONFIGURATIONS**



**SHORT-CIRCUIT PROTECTED DC LOADS**  
**(SEE NOTES 3, 4 AND 6, FIGURE 3 AND 4)**



**SHORT-CIRCUIT PROTECTED AC LOADS**  
**(SEE NOTE 6)**

**NOTES:**

1. The input voltage is 5.0 Vdc for all tests unless otherwise specified.
2. Reversing the output polarity when the relay is in overload or is sustaining a short circuit may cause permanent damage.
3. Inductive loads must be diode suppressed.
4. Loads may be switched in either the high side or the low side of the power source.
5. Continuous load current rating is determined with relay mounted on a printed circuit card.
6. For input voltage greater than 6.0 Vdc a series resistor must be used to limit the power dissipation on the input of the relay. The resistor value should be selected using the following equation:  
 $R = (V_{BIAS} - 6 \text{ volts})/11\text{mA}$
7. Input transitions are to be less than 1 msec.
8. Tested at 25°C ambient.

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