

Part Number	Relay Description
<b>C60-X0</b>	Solid State Relay, Terminals for Through Hole Mount
<b>SC60-X0</b>	Solid State Relay, Terminals for Surface Mount

Add suffix 01 to denote 60Sn/40Pb Pre-Tinned Leads

### ELECTRICAL SPECIFICATIONS (25°C UNLESS OTHERWISE SPECIFIED)

#### INPUT (CONTROL) SPECIFICATIONS (SEE NOTE 1)

Parameters	Min	Typ	Max	Units
Input Voltage Drop (See Fig 1)	1.1		1.5	Vdc
Input Current (See Fig 1 and Notes 1, 7)		10	50	mA
Input Current (Guaranteed On), (See Fig 4 and Note 7)	10			mA
Input Current (Guaranteed Off)			100	µA
Reverse Voltage Protection			-6	Vdc

#### OUTPUT (LOAD) SPECIFICATIONS

Parameter	Part Number	DC		Bi-Directional		Units
		Min	Max	Min	Max	
Output Voltage Rating	C60-10	60		±60		Vdc
	C60-20	100		±100		Vdc
	C60-30	200		±200		Vdc
	C60-40	400		±400		Vdc
Output Current Rating	C60-10	2.5		±1.25		Adc
	C60-20	1.5		±0.75		Adc
	C60-30	1.0		±0.5		Adc
	C60-40	0.5		±0.25		Adc
On Resistance (See Note 6)	C60-10	0.07		0.28		Ohm
	C60-20	0.2		0.7		Ohm
	C60-30	0.45		1.8		Ohm
	C60-40	1.0		4.0		Ohm
Leakage Current at Rated Voltage		2.0		1.0		µAdc
Turn-On Time @ 10mA	C60-10	4.0		4.0		ms
	C60-20, -30, -40	3.0		3.0		ms
Turn-Off Time	C60-10	4.0		4.0		ms
	C60-20, -30, -40	3.0		3.0		ms
Output Capacitance	C60-10	1000		500		pf
	C60-20	500		250		pf
	C60-30	400		200		pf
	C60-40	400		200		pf
Isolation (Input to Output)		10 <sup>9</sup>		10 <sup>9</sup>		Ohms
Dielectric Strength		1500		1500		Vrms
Capacitance (Input to Output)		3.0		3.0		pf
Junction Temperature (T <sub>j</sub> )		125		125		°C
Junction to Case Thermal Resistance				25		°C
Case to Ambient Thermal Resistance				75		°C/W

**Moisture Sensitivity Level (MSL)** **6**



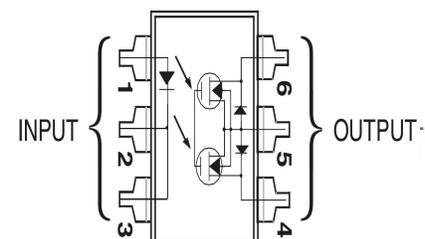
#### FEATURES/BENEFITS

- Power FET Output with Very Low On Resistance: Virtually no offset with very low leakage and voltage drop.
- Optical Isolation: Isolates control elements from load transients. Eliminates ground loops and signal ground noise.
- Three Terminal Output: Output FETs can be paralleled externally to change current load rating.
- Floating Output: Allows for high and low side switching.
- Switches High Voltages and Currents: Voltages to 400 Vdc. Current to 2.5 Adc. Bi-directional, DC or AC.
- High Noise Immunity: Control circuit cannot be triggered by output switching noise.
- 6-Pin Mini-DIP Package: Standard or surface mount available.

#### DESCRIPTION

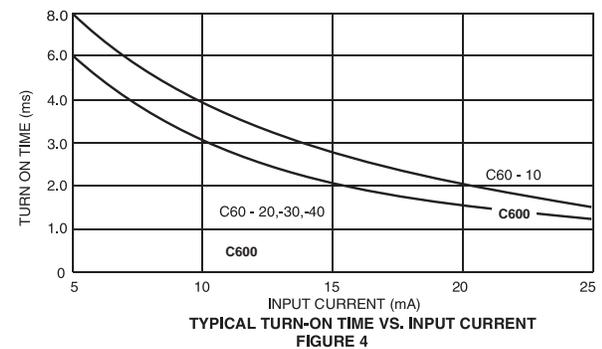
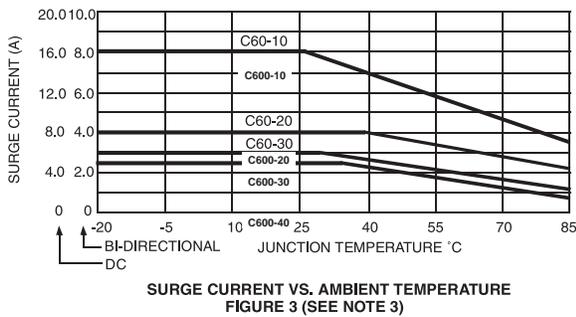
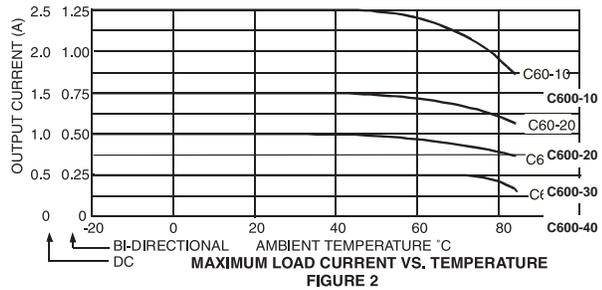
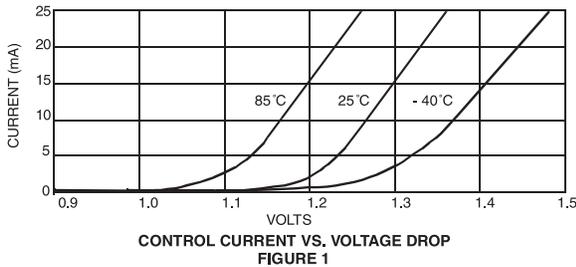
The Series C600 solid-state relay is an advanced design capable of switching very heavy loads in a physically small 6-pin mini DIP package. These relays have a power FET output that ensures low On resistance, no offset voltage and low leakage current. They are versatile and can be used to switch AC, Bi-directional or DC loads. Optical isolation ensures complete protection of signal lines, power and ground bus and control circuits from switching noise and EMI.

#### SCHEMATIC

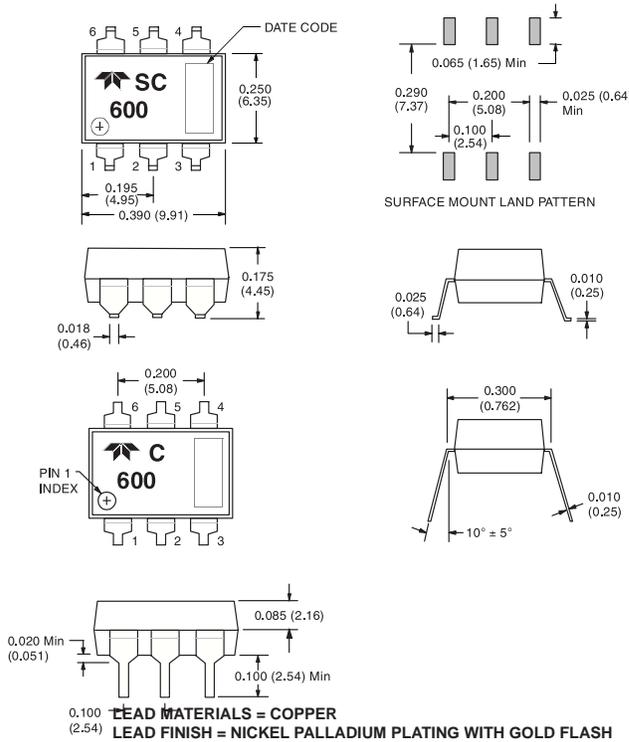




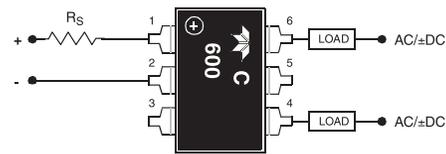
**CHARACTERISTIC CURVES**



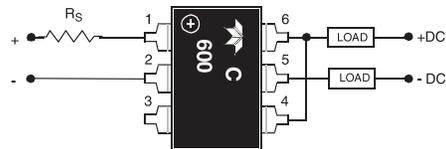
**MECHANICAL SPECIFICATION**



**WIRING CONFIGURATION**



A) BI-DIRECTIONAL/AC CONFIGURATION (SEE NOTE 4)



B) DC CONFIGURATION (SEE NOTE 4)

**NOTES:**

- Series resistor is required to limit input current to 50 mA maximum.
- The input current is 10 mA for all tests unless otherwise specified.
- The surge current is non-repetitive for a maximum duration of 20 ms (See Figure 3).
- Loads may be connected to positive or negative referenced power supplies. Inductive loads must be diode suppressed.
- Continuous load current is rated under the conditions of still air and mounted on a printed circuit board.
- To calculate ON Resistance for a given junction temperature calculate the new R<sub>ON</sub> using the equation shown below:  
 $R_{ON} = R(25^{\circ}C) \times e^{0.006(TJ - 25^{\circ}C)}$
- Turn on Time can be controlled with input control current. Calculate a new turn-on time:  $t_{ON} = (t_{Specification Limit} \times I_{in}) / 10mA$
- Load voltage rating should be derated 10% at -40°C
- Pin 3 is internally connected to pin 2.
- Part does not contain pure tin