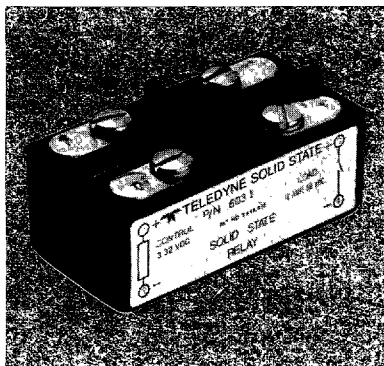




TELEDYNE SOLID STATE

SOLID STATE DC RELAY

OPTICALLY ISOLATED

2 & 5 A/50 Vdc

(AC OR DC INPUT CONTROL)

FEATURES

- TTL compatible inputs
- Optional controlled rise & fall times
- Terminal options: Screws, quick disconnects, or PC Board solder pins

DESCRIPTION

These optically coupled DC SSRs are rated at 2 and 5 A respectively, at 50 Vdc, and are available with either TTL compatible DC inputs or AC line voltage inputs. Optional controlled output rise and fall times provide the following added advantages:

- limit in-rush currents for capacitive and lamp loads
- limit turn-off transients with inductive loads
- minimize EMI and switching transients

The adaptive package design offers a choice of screw or quick disconnect terminals for chassis, panel, or heat sink mounting, or solder pins for direct mounting on PC boards.

ELECTRICAL SPECIFICATIONS

(25°C UNLESS OTHERWISE SPECIFIED)

INPUT (CONTROL) SPECIFICATIONS		MIN.	TYP.	MAX.	UNITS	NOTES
DC INPUT MODELS	Control Voltage Range (-30°C to +80°C)	3		32	Vdc	Note 4
	Input Current at 5V (-30°C to +80°C)			5.5	mA	Fig 3
	Input Current at 32V (-30°C to +80°C)		32	36	mA	Fig 3
	Must Turn-On Voltage	3			Vdc	
	Must Turn-Off Voltage (-30°C to +80°C)			0.8	Vdc	
AC INPUT MODELS	Control Voltage Range (-30°C to +80°C)	90		250	Vac	
	Input Current at Max. Control Voltage			25	mA	Fig 3
	Turn-On Voltage (-30°C to +80°C)	90			Vac	
	Turn-Off Voltage (-30°C to +80°C)			20	Vac	
	Control Voltage Frequency	47		70	Hz	
Isolation (Input to Output, Input to Case, Output to Case)		10 ⁹			OHMS	
Capacitance (Input to Output)			10	20	pF	
Dielectric Strength (Input to Output, Input to Case, Output to Case)		1500			Vrms	60 Hz Sine Wave
Reverse Voltage Protection (DC Control)				32	Vdc	
OUTPUT (LOAD) SPECIFICATIONS		MIN.	TYP.	MAX.	UNITS	NOTES
Output Current Rating (Resistive)	603-1, -11, -21			2	A	Fig 1 & 2
	603-2, -12, -22			5	A	
Load Voltage Rating		3		50	Vdc	
Voltage Drop at Max. Current			1	1.5	Vdc	
Surge Current (% of Rating)						Fig 4
DC INPUT MODELS	Turn On Time Delay (T _{d(on)})	603-1, -2	15	25	μs	Fig 5 6, 7
	5V _{in} / 50V _{load}	603-21, -22	25	100	μs	
	Rise Time (T _r)	603-1, -2	50	75	μs	
	5V _{in} / 50V _{load}	603-21, -22	0.5	1	ms	
	Turn Off Time Delay (T _{d(off)})	603-1, -2		100	μs	
	5V _{in} / 50V _{load}	603-21, -22	1	2	ms	
	Fall Time (T _f)	603-1, -2	100	200	μs	
	5V _{in} / 50V _{load}	603-21, -22	65	100	145	μs
AC INPUT MODELS	Turn-On Time (time delay (T _d) + risetime (T _r))	120V _{in} / 50V _{load}	15	25	ms	
	Turn-Off Time (time delay (T _d) + falltime (T _f))	120V _{in} / 50V _{load}	15	25	ms	
Output Leakage Current (at 50V, 80°C)		603-1, -11, -21	5	10	mA	
		603-2, -12, -22	5	15	mA	
Power Dissipation Factor (D)				1.5	W/A	
Power Switch Junction Temperature (T _j Max.)				150	°C	

PART NUMBERING (See Note 1)

INPUT CONTROL VOLTAGE RANGE	OUTPUT VOLTAGE RATING	OUTPUT LOAD RATING & PART NUMBERING			
		CONTROLLED RISE AND FALL TIME			
		2 A	5 A	2 A	5 A
3-32 Vdc	50 Vdc	603-1	603-2	603-21	603-22
90-250 Vac		603-11	603-12		

CHARACTERISTIC CURVES

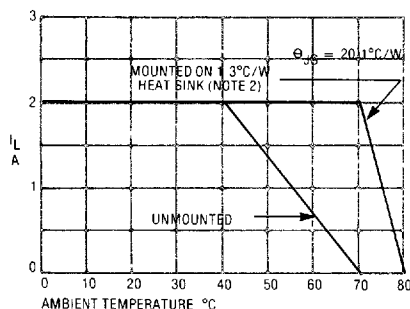


FIGURE 1 - 603-1/603-21 DC RELAY DERATING CURVE

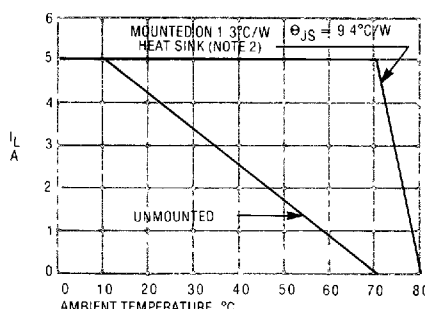


FIGURE 2 - 603-2/603-22 DC RELAY DERATING CURVE

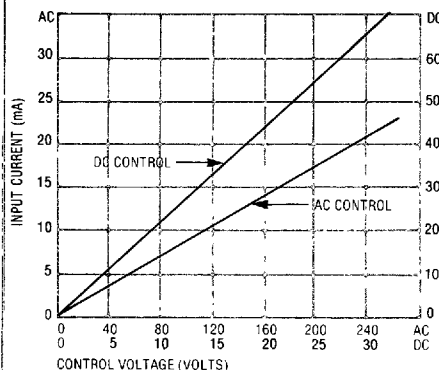


FIGURE 3 - INPUT CURRENT VS. CONTROL VOLTAGE (TYPICAL) ALL UNITS

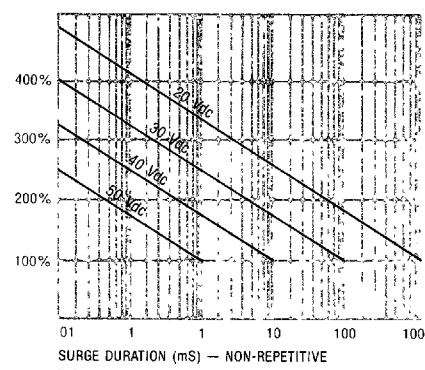


FIGURE 4 - MAXIMUM ALLOWABLE OVERLOADING AS A FUNCTION OF SUPPLY VOLTAGE

RESPONSE CURVES

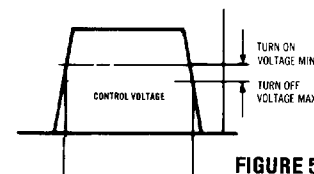


FIGURE 5

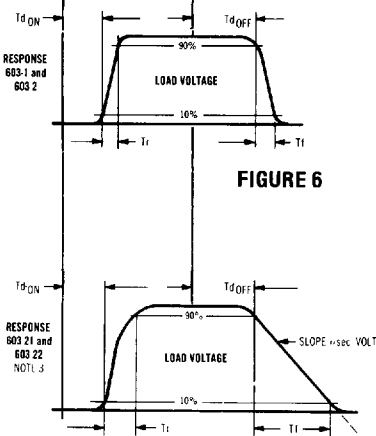


FIGURE 6

FIGURE 7

MECHANICAL SPECIFICATIONS

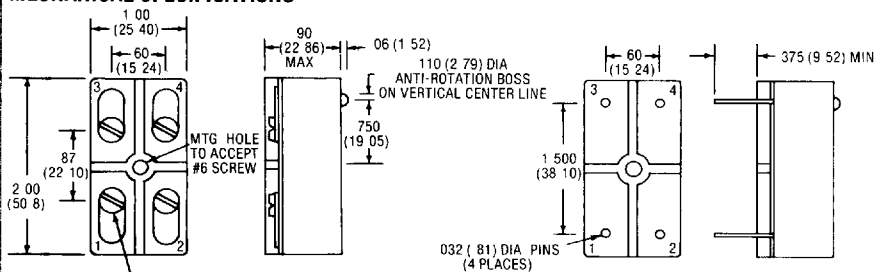


FIGURE 8

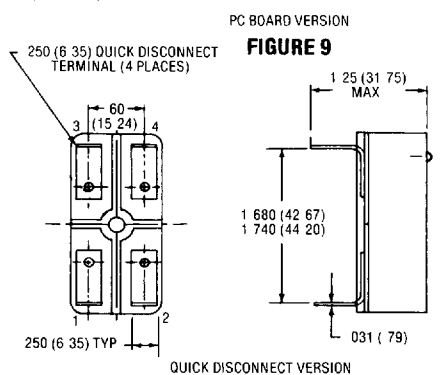


FIGURE 9

FIGURE 10

TERM. SCREW
#6 BINDER HD
SCREW
(4 PLACES)

SCREW TERMINAL VERSION

PC BOARD VERSION

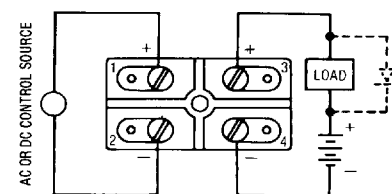
- Ambient Temperature Range:
-30°C to +80°C Operating
-30°C to +80°C Storage
- Weight: 3 oz. max.
- Case Material: Aluminum, black anodized
- Header Material: Phenolic, black
- Epoxy Encapsulated
- Vibration: 30g, 50-500 Hz.

TOLERANCES

.XX ± .01 (.25); .XXX ± .005 (.13)

DIMENSIONS ARE SHOWN IN INCHES (MILLIMETERS)

WIRING DIAGRAM



Input and output polarity must be observed
*Inductive loads must be diode suppressed