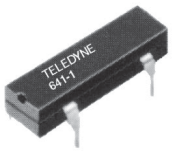
ELECTRICAL SPECIFICATIONS
25°C UNLESS OTHERWISE SPECIFIED)

INPUT (CONTROL) SPECIFICATIONS

Parameter	Min	Max	Units
Control Voltage Range (See Figure 1)	4.0	10	Vdc
Input Current at 5V Control Voltage		16	mAdc
Must Turn-On Voltage	4.0		Vdc
Must Turn-Off Voltage		0.5	Vdc

OUTPUT (LOAD) SPECIFICATIONS

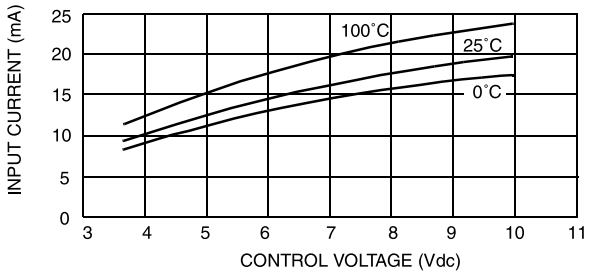
Parameter	Part	Min	Max	Units
Load Voltage Rating	641-1	0	140	Vrms
	641-2	0	250	
Output Current Rating (See Figure 3, Note 1)		0.005	0.5	Arms
Frequency range		0.1	70	Hz
Over Voltage Rating	641-1		200	Vpeak
	641-2		400	Vpeak
On-State Voltage Drop at Rated Voltage			1.5	Vrms
Surge Current Rating (Non-repetitive 16 ms mac. See Figure 2, Note 2)			5.0	A
Turn-On Time (60 Hz)			20	μs
Turn-Off Time (60 Hz)			8.3	ms
Leakage Current (Rated Voltage at 100°C)			1.0	mArms
Off-State dV/dt (Without RC Snubber, Typical)			50	V/μs
Insulation Resistance (Input to Output at 500 Vdc)			10^9	Ohms
Dielectric Strength (Input to Output)		2500		Vac
Capacitance (Input to Output)			5	pF
Junction Temperature (T_J)			100	°C



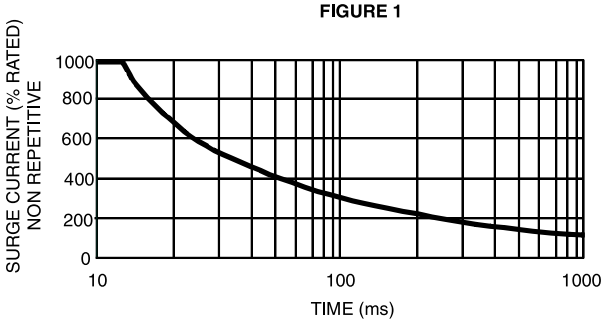
FEATURES/BENEFITS
- Fast Switching Speed: Where speed is important
- Floating Output: Eliminates ground loops and signal ground noise
- Random Turn On: For pulse width modulation
- Low Off State Leakage: For high off-state impedance
- Switches High Voltages: To 250 Vrms
- Switches High Currents: To 0.5 Arms
- 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 Series 641 features random turn-on for controlling AC loads with a triac output rated at 0.5 amp up to 50°C ambient without a heat sink. A high frequency input oscillator with isolation transformer coupled directly to the triac gate provides the added capability of driving very low current AC loads down to 5 mA. Internal design employs a unique patented lead frame construction molded in a 14-pin DIP package.

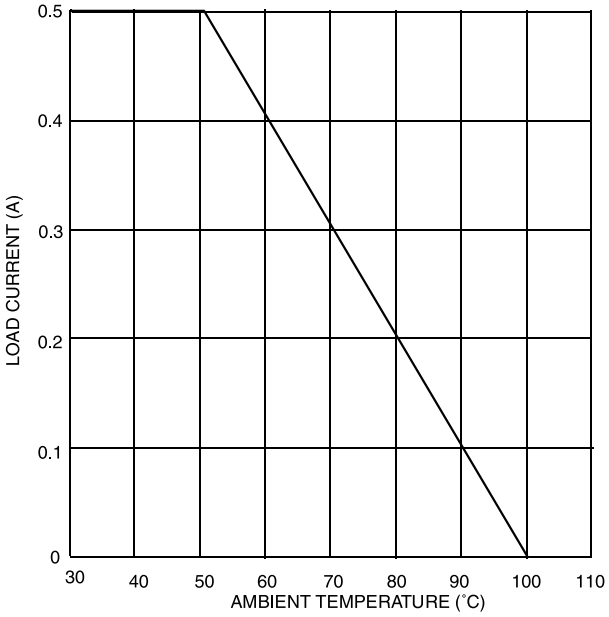
CHARACTERISTIC CURVES



INPUT CURRENT VS CONTROL VOLTAGE
FIGURE 1

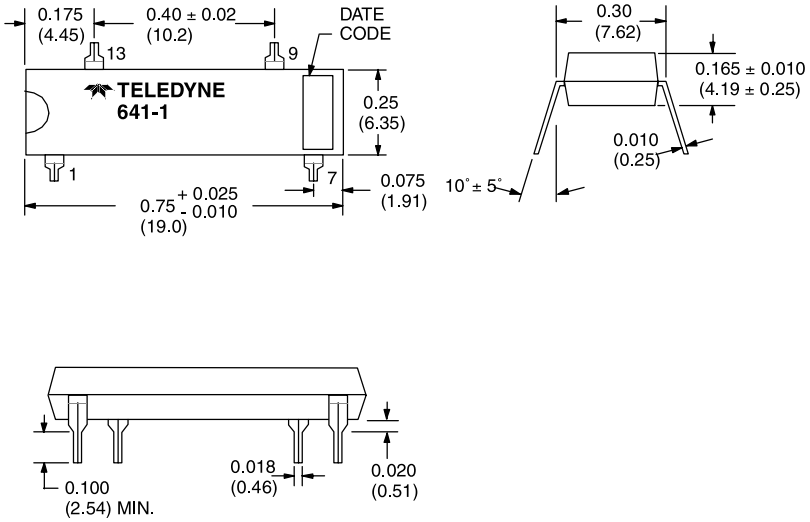


PEAK SURGE CURRENT VS TIME
FIGURE 2



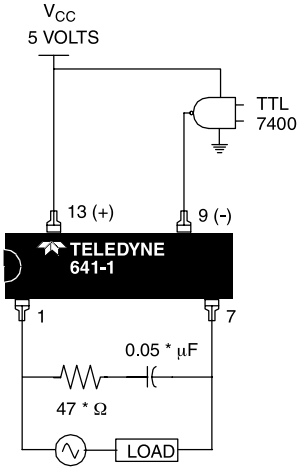
MAXIMUM LOAD CURRENT VS TEMPERATURE
FIGURE 3

MECHANICAL SPECIFCATIONS



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

TYPICAL 641 INTERFACE



* OPTIONAL SNUBBER NETWORK

NOTES:

1. UL rated at 0.5 Arms for motor starting and incandescent lamp control.
2. Triac may lose blocking capability during and after surge until T_J falls below 125°C maximum.