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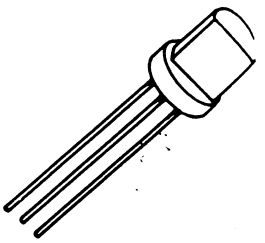
SUS

2N4987,90

The General Electric SUS is a silicon planar, monolithic integrated circuit having thyristor electrical characteristics closely approximating those of an "ideal" four layer diode. The device is designed to switch at 8 volts with a 0.02%/°C temperature coefficient. A gate lead is provided to eliminate rate effect, obtain triggering at lower voltages and to obtain transient free wave forms.

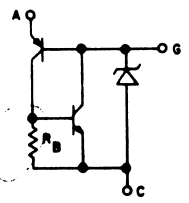


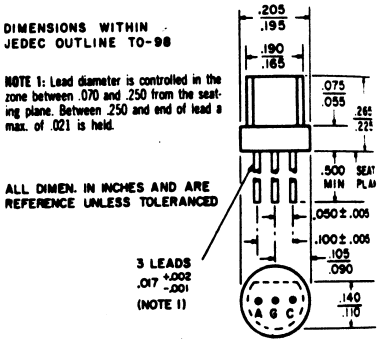
Silicon Unilateral Switches are specifically designed and characterized for use in monostable and bistable applications where low cost is of prime importance. These devices are in the low cost, TO-98 plastic package.

Applications Include:

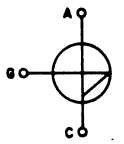
- SCR Triggers
- Frequency Dividers
- Ring Counters
- Cross Point Switching
- Over-Voltage Sensors

EQUIVALENT CIRCUIT





CIRCUIT SYMBOL



absolute maximum ratings: (25°C free air) (unless otherwise specified)

Storage Temperature Range	−65 to +150	°C
Junction Temperature Range	−55 to +125	°C
Power Dissipation*	300	mW
Peak Reverse Voltage	−30	Volts
DC Forward Anode Current*	175	mA
DC Gate Current*†	5	mA
Peak Recurrent Forward Current (1% duty cycle, 10 μsec pulse width, $T_A = 100°C$)	1.0	Amp
Peak Non-Recurrent Forward Current (10 μsec pulse width, $T_A = 25°C$)	5.0	Amps

***Derate linearly to zero at 125°C.**

†This rating applicable only in OFF state.
Maximum gate current in conducting state limited by maximum power rating.

electrical characteristics: (25°C) (unless otherwise specified)

		2N4987			2N4990			
STATIC		Min.	Typ.	Max.	Min.	Typ.	Max.	
Forward Switching Voltage	V_S	6.0		10.0	7.0		9.0	Volts
Forward Switching Current	I_S			500			200	μA
Holding Current	I_H			1.5			.75	mA
Reverse Current								
($V_R = -30V$, $T_A = 25°C$)	I_R			0.1			0.1	μA
($V_R = -30V$, $T_A = 85°C$)	I_R			10.0			10.0	μA
Forward Current (off state)								
($V_F = 5V$, $T_A = 25°C$)	I_B			1.0			0.1	μA
($V_F = 5V$, $T_A = 85°C$)	I_B			10.0			10.0	μA
Forward Voltage Drop (on state) ($I_F = 175$ mA)	V_F			1.5			1.5	Volts
Temperature Coefficient of Switching Voltage ($T_A = -55°C$ to $+85°C$)	T_C		±.02			±.02		%/°C
DYNAMIC								
Turn-on Time (See Circuit 1)	t_{on}			1.0			1.0	μsec
Turn-off Time (See Circuit 2)	t_{off}			25.0			25.0	μsec
Peak Pulse Voltage (See Circuit 3)	V_O	3.5			3.5			Volts
Capacitance (0V., f = 1 MHz)	C		2.5			2.5		pF