

# Silicon Transistors

**2N4983,6**

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 TO-18 hermetic package.

**Applications Include:**

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

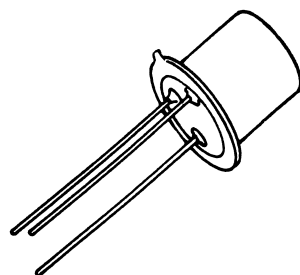
absolute maximum ratings:  
(25°C free air) (unless otherwise specified)

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 <sub>A</sub> = 100°C)	1.0	Amp
Peak Non-Recurrent Forward Current (10 μsec pulse width, T <sub>A</sub> = 25°C)	5.0	Amps

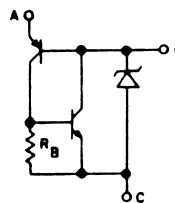
\*Derate linearly to zero at 125°C.

†This rating applicable only in OFF state.

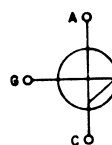
Maximum gate current in conducting state limited by maximum power rating.



**EQUIVALENT CIRCUIT**

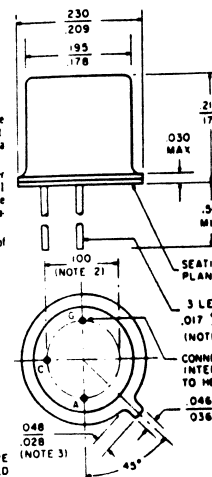


**CIRCUIT SYMBOL**



DIMENSIONS WITHIN JEDEC OUTLINE TO-18

NOTE 1: Lead diameter is controlled in the zone between .250 and .250 from the seating plane. Between .250 and end of lead a max of .021 is held.  
NOTE 2: Leads having maximum diameter (.013) measured in seating plane .054 ± .001 — .030 below the seating plane of the device shall be within .007 of true position relative to a maximum width tab.  
NOTE 3: Measured from max diameter of the actual device.



ALL DIMEN IN INCHES AND ARE REFERENCE UNLESS TOLERANCED

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

		2N4983			2N4986			
		Min.	Typ.	Max.	Min.	Typ.	Max.	
<b>STATIC</b>								
Forward Switching Voltage	V <sub>S</sub>	6.0		10.0	7.0		9.0	Volts
Forward Switching Current	I <sub>S</sub>			500			200	μA
Holding Current	I <sub>H</sub>			1.5			.75	mA
Reverse Current	I <sub>R</sub>			0.1			0.1	μA
(V <sub>R</sub> = -30V, T <sub>A</sub> = 25°C)	I <sub>R</sub>			10.0			10.0	μA
(V <sub>R</sub> = -30V, T <sub>A</sub> = 100°C)								
Forward Current (off state)	I <sub>B</sub>			1.0			0.1	μA
(V <sub>F</sub> = 5V, T <sub>A</sub> = 25°C)	I <sub>B</sub>			10.0			10.0	μA
(V <sub>F</sub> = 5V, T <sub>A</sub> = 100°C)								
Forward Voltage Drop (on state)	V <sub>F</sub>			1.5			1.5	Volts
(I <sub>F</sub> = 175 mA)								
Temperature Coefficient of Switching Voltage (T <sub>A</sub> = -55°C to +100°C)	T <sub>C</sub>		±.02			±.02		%/°C
<b>DYNAMIC</b>								
Turn-on Time (See Circuit 1)	t <sub>on</sub>			1.0			1.0	μsec
Turn-off Time (See Circuit 2)	t <sub>off</sub>			25.0			25.0	μsec
Peak Pulse Voltage (See Circuit 3)	V <sub>O</sub>	3.5			3.5			Volts
			2.5			2.5		pF