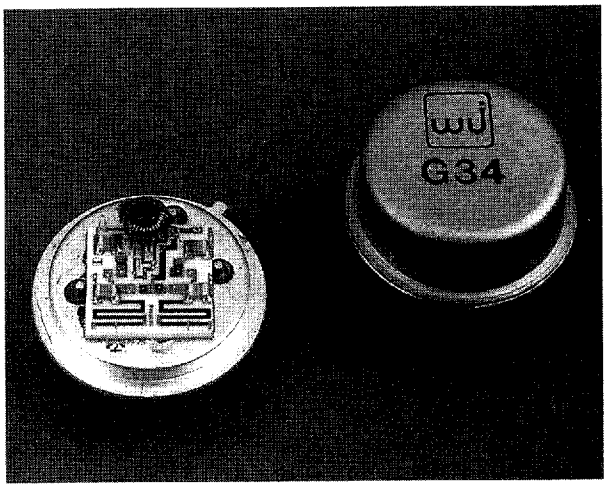
WJ-G34/SMG34



500 TO 2400 MHz TO-8 VOLTAGE-CONTROLLED ATTENUATOR MODULE

- ◆ AVAILABLE IN SURFACE MOUNT
- ◆ FAST SWITCHING: < 500 nsec; 10 TO 90% (TYP.); < 2.0 µsec; 0 TO 100% (TYP.)
- ◆ HIGH DYNAMIC RANGE: 30 dB TO 2400 MHz (TYP.)
- ◆ LOW VSWR: 1.3:1 (TYP.)
- ◆ EXCELLENT FLATNESS OVER FREQUENCY: ± 0.5 dB (TYP.)

Specifications*

Characteristics	Typical	Guaranteed
Frequency Range (Min.)	200 - 2600 MHz	500 - 2400 MHz
Maximum Attenuation Available (Min.)		
500 - 1000 MHz	>40dB	35 dB
1000 - 2000 MHz	>35dB	30 dB
2000 - 2400 MHz	>30dB	25 dB
Insertion Loss (Max.)		
500 - 1000 MHz	2.5dB	3.0 dB
1000 - 2000 MHz	3.0dB	3.5 dB
2000 - 2400 MHz	3.3dB	4.0 dB
VSWR (Max.)		
500 - 2000 MHz	< 1.3:1	1.8:1
2000 - 2400 MHz	< 1.5:1	2.0:1
Flatness Over Frequency (Max.)		
(Attenuation = min. to 25db, 500 - 2400 MHz)	± 0.5dB	±1.0 dB
Switching Speed (Max.)		
10 to 90%	< 500 nsec	800 nsec
0 to 100%	< 2.0 µsec	4.0 µsec
Bias Voltage		+15 V
Bias Current (Max.)	6.5 mA	10 mA
Control Voltage		0 V to +15 V
Control Current (Max.)		10 mA

*Measured in a 50 - ohm system, guaranteed at 25°C at +15 Vdc Nominal.

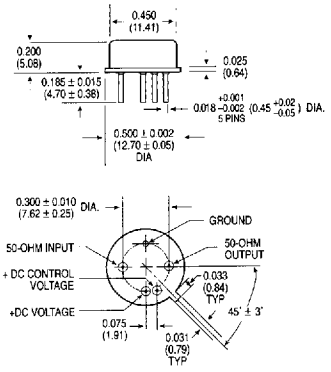
Absolute Maximum Ratings

Storage Temperature .....-62°C to +125°C
Maximum Case Temperature .....125°C
Maximum DC Voltage .....+18 volts
Maximum Continuous RF Input Power .....+20 dBm
Maximum Short Term RF Input Power (1 Minute Max.).....200 Milliwatts
Maximum Peak Power .....1 Watt (3 µsec Max.)
"S" Series Burn-In Temperature (Case) .....125°C

Weight approximately 2.0 grams (0.07 oz.)

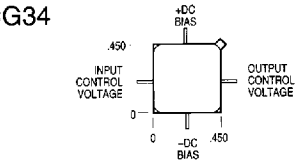
Outline Drawing

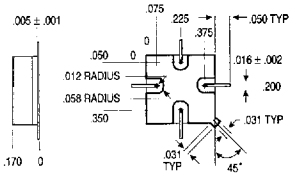
G34



DIMENSIONS ARE IN INCHES (MILLIMETERS)
± .005 (.13) UNLESS OTHERWISE SPECIFIED

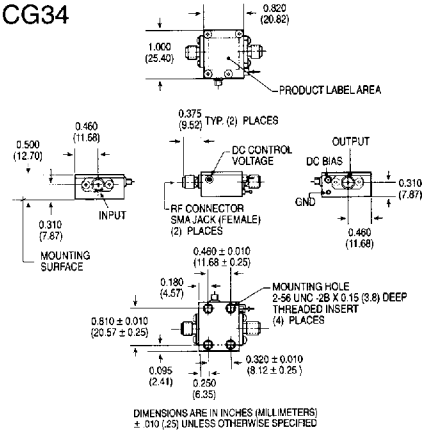
SMG34





DIMENSIONS ARE IN INCHES (MILLIMETERS)
± .010 (.25) UNLESS OTHERWISE SPECIFIED

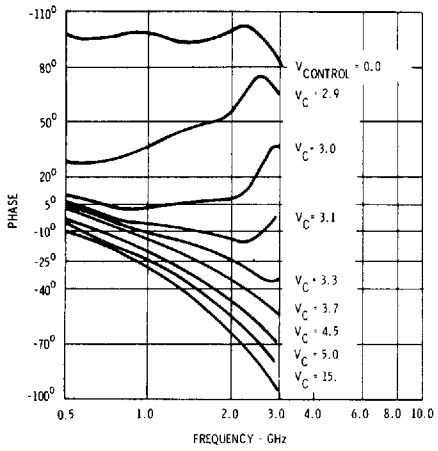
CG34



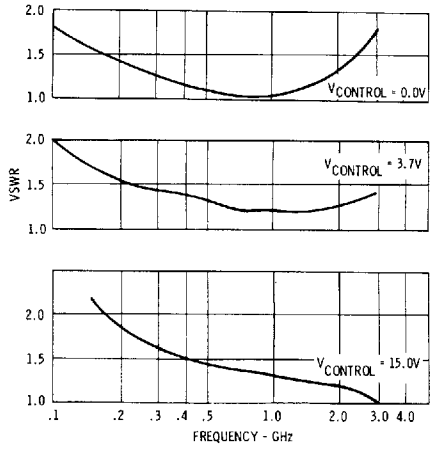
DIMENSIONS ARE IN INCHES (MILLIMETERS)
± .010 (.25) UNLESS OTHERWISE SPECIFIED

Typical Performance at 25°C

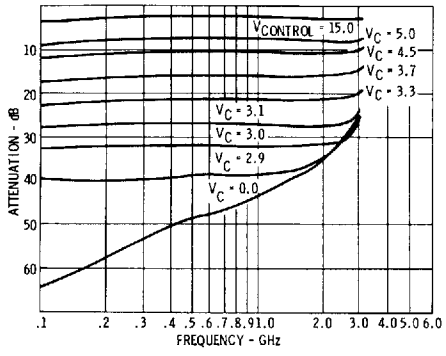
Phase vs. Frequency vs. Attenuation



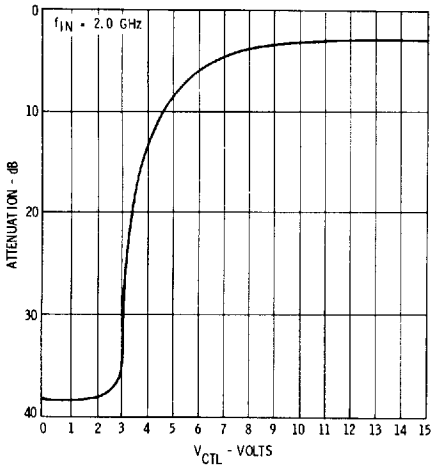
VSWR (In/Out) vs. Frequency



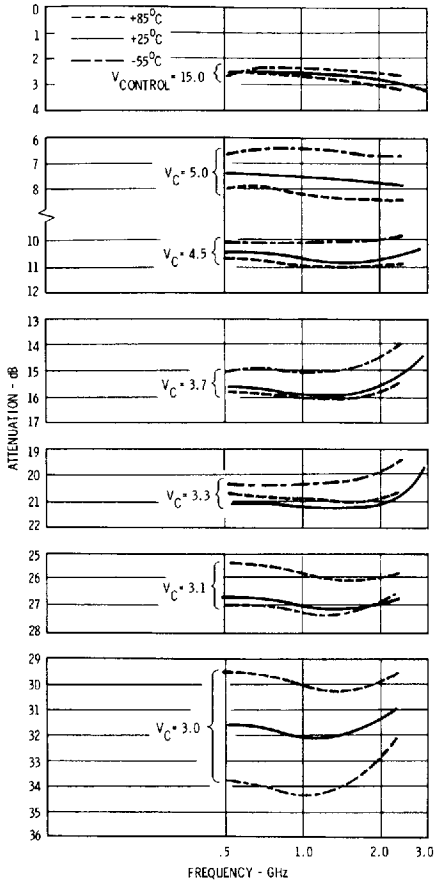
Attenuation vs. $V_{CONTROL}$ vs. Frequency



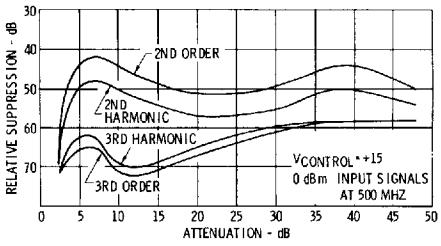
Attenuation vs. $V_{CONTROL}$



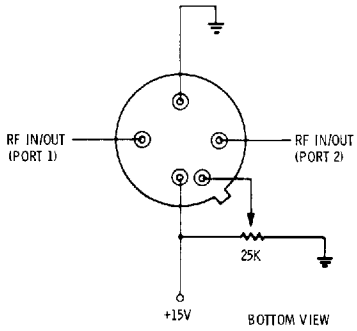
Attenuation vs. $V_{CONTROL}$ vs. Frequency



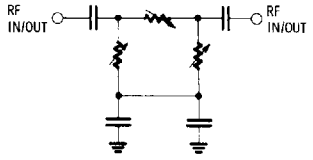
Distortion Products vs. Frequency



Typical Test Circuit



Functional Block Diagram



2

Typical Switching Performance at 25°C

The switching speed of the WJ-G34 is shown in Figure 2 with the horizontal scale set at 2 μsec/div. The very high speed of this attenuator is apparent, and offers even quicker switching than the WJ-G30 attenuator shown in Figure 1. The G30 takes approximately 3 μsec to settle while the G34 switching is less than 1 μsec. An expanded scale is shown in Figure 3 for the G34 with the horizontal scale set at 500 μsec/div.

The input level for Figures 1 through 3 was +7 dBm. These figures are representative of the switching characteristics. The switching speed can change to some degree as a function of attenuation and input levels.

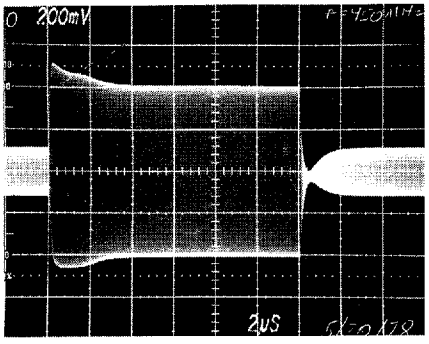


Fig. 1

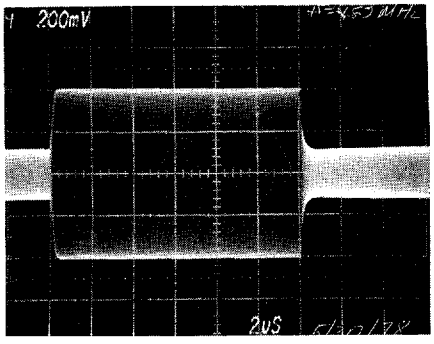


Fig. 2

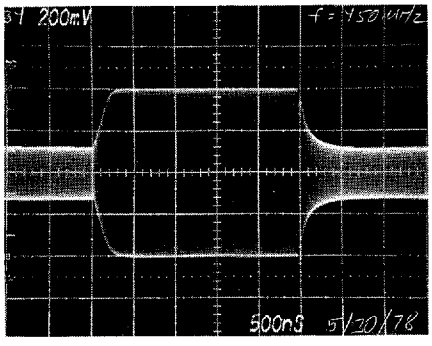


Fig. 3