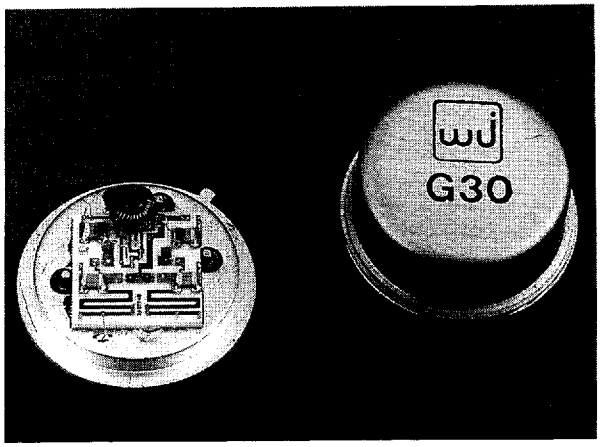
WJ-G30/SMG30



100 TO 2000 MHz TO-8 VOLTAGE-CONTROLLED ATTENUATOR MODULE

- ◆ AVAILABLE IN SURFACE MOUNT
- ◆ FAST SWITCHING: < 200 nsec, 10 TO 90% (TYP.) < 3 µsec; 0 TO 100% (TYP.)
- ◆ HIGH DYNAMIC RANGE: 40 dB TO 1000 MHz (TYP.)
- ◆ LOW VSWR: 1.4:1 (TYP.)

Guaranteed Specifications*

Characteristics	Typical	Guaranteed
Frequency Range (Min,)	50 - 2300 MHz	100 - 2000 MHz
Maximum Attenuation Available (Min.)		
100 - 500 MHz	>45 dB	40 dB
500 - 1000 MHz	>40 dB	35 dB
1000 - 2000 MHz	>30 dB	25 dB
Insertion Loss (Max.)		
100-500 MHz	<2.3 dB	2.8 dB
500-1000 MHz	<2.5 dB	3.0 dB
1000-2000 MHz	<3.0 dB	3.5 dB
VSWR (Max.)		
100 - 1000 MHz	<1.4:1	1.8:1
1000 - 2000 MHz		
0 - 25 dB Attenuation	1.4 :1	2.0:1
> 25 dB Attenuation	<1.7:1	2.2:1
Flatness Over Frequency (Max.)		
(Attenuation = min. to 25db)		
100 - 1000 MHz	± 0.5 dB	±1.0 dB
1000 - 2000 MHz	± 1.0 dB	±1.5 dB
Switching Speed (Max.)		
10 to 90%	<200 nsec	400 nsec
0 to 100%	<3 µsec	6 µsec
Bias Voltage		+15 V
Bias Current (Max.)	6.7 mA	10 mA
Control Voltage		0 v to + 15 V
Control Current (Max.)		10 mA

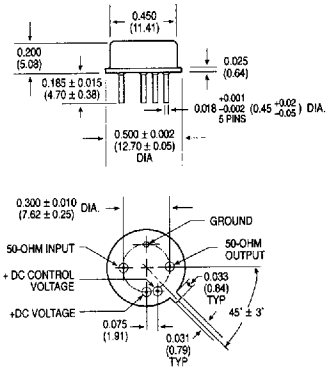
*Measured in a 50-ohm system, guaranteed at 25°C at +15.0 Vdc Nominal.

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 2.27 grams (0.08 oz.) max

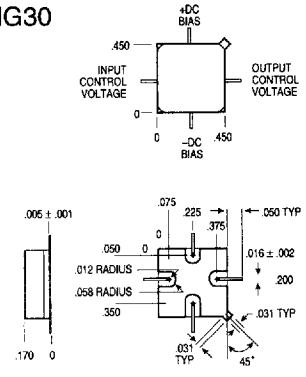
Outline Drawing

G30



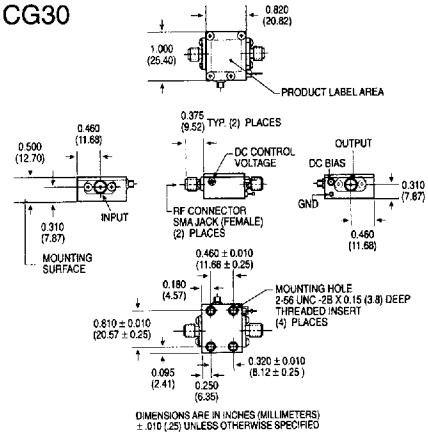
DIMENSIONS ARE IN INCHES (MILLIMETERS)
± .005 (.13) UNLESS OTHERWISE SPECIFIED

SMG30



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

CG30



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

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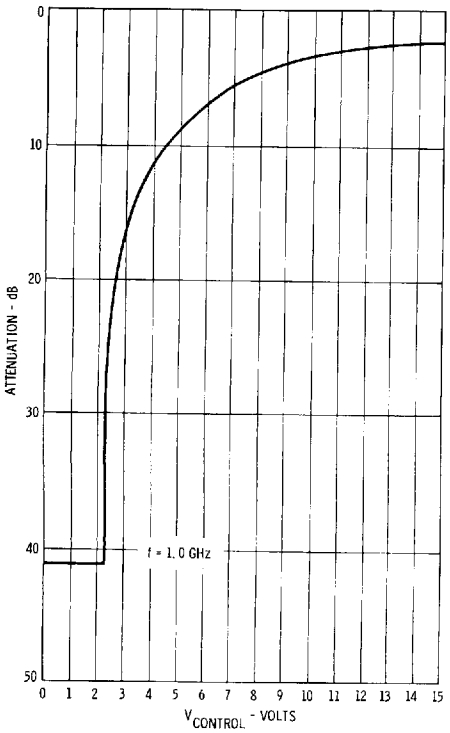
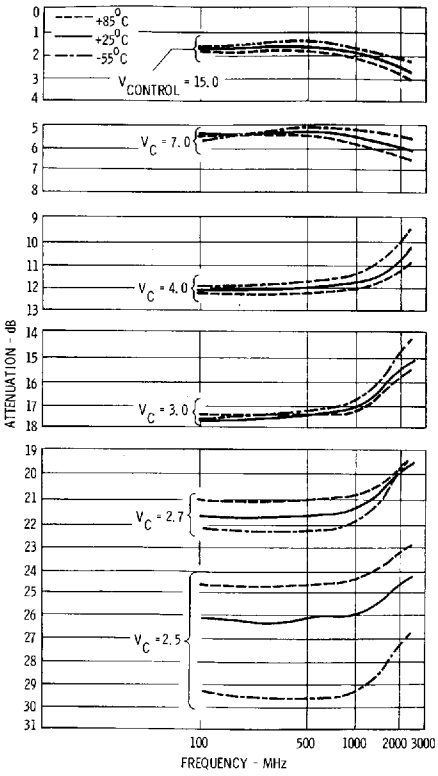
Typical Performance at 25°C

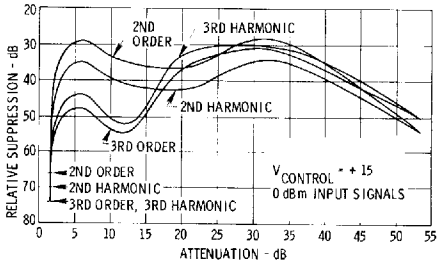
Attenuation vs. Control Voltage



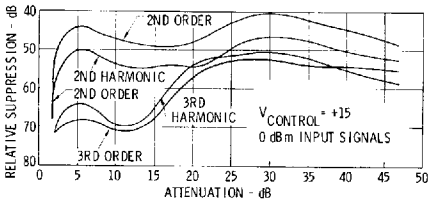
Attenuation vs. $V_{CONTROL}$ vs. Frequency



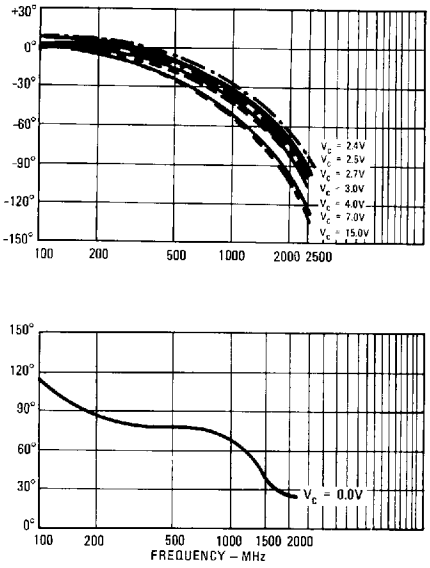
Distortion Products vs. Attenuation at 100 MHz



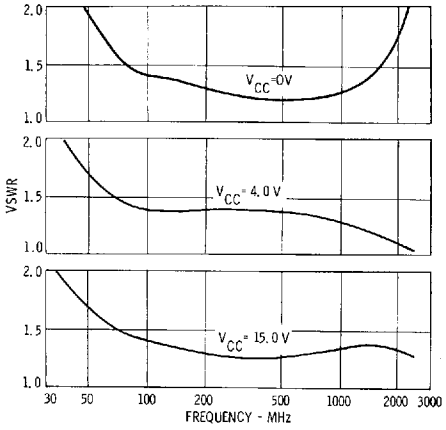
Distortion Products vs. Attenuation at 500 MHz



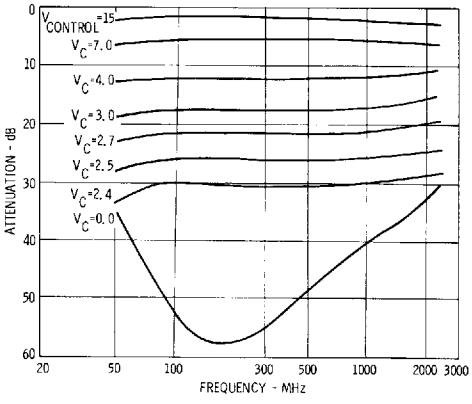
Phase vs. $V_{CONTROL}$ vs. Frequency



VSWR (In/Out) vs. Frequency



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



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Typical Switching Performance at 25°C

The switching speed of the WJ-G30 is shown in Figure 2 with the horizontal scale set at 50 µsec/div. The high speed of this attenuator is apparent, particularly when comparing it to the standard WJ-G1 attenuator shown in Figure 1. The G1 takes approximately 80 µsec to settle while the G30 takes less than 3 µsec. An expanded scale is shown in Figure 3 for the G30 with the horizontal scale set at 2 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.

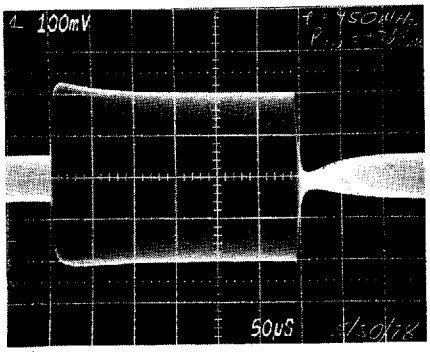


Fig. 1

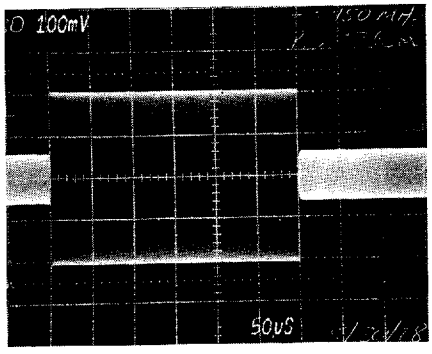


Fig. 2

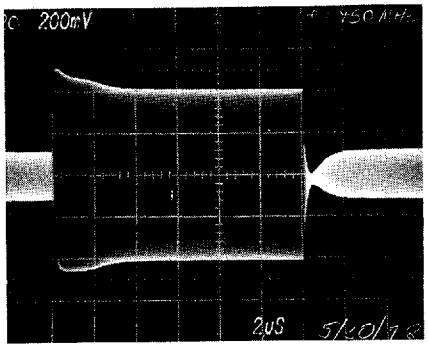
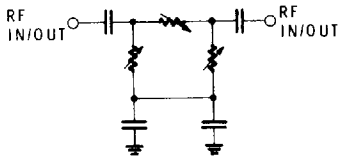


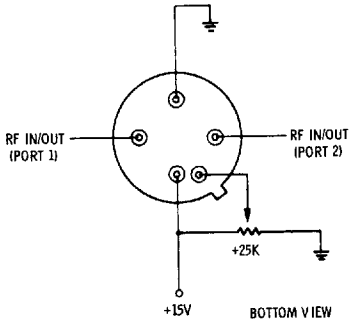
Fig. 3

Functional Block Diagram



π PAD ATTENUATOR

Typical Test Circuit



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