

WJ-G1/SMG1

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

- ◆ AVAILABLE IN SURFACE MOUNT
- ◆ LOW VSWR: < 1.8:1 (TYP.)
- ◆ LOW INSERTION LOSS:
2.0 dB to 1000 MHz (TYP.)
- ◆ LOW DISTORTION: -25 dBc (TYP.)
AT $V_{\text{CONTROL}} = +15\text{V}$

Specifications*

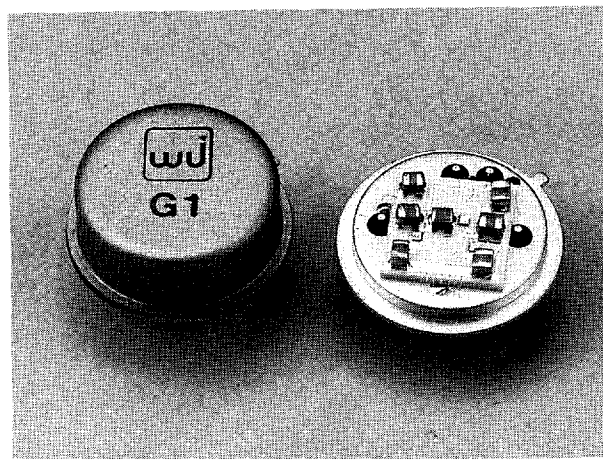
Characteristics	Typical	Guaranteed
Frequency Range	5 to 2200 MHz	5 to 2000 MHz
Maximum Attenuation Available (Min.)		
5 - 500 MHz	36 dB	31 dB
500 - 1000 MHz	30 dB	25 dB
1000 - 2000 MHz	23 dB	18 dB
Insertion Loss ($V_{ctrl} = +15\text{ V}$) (Max.)		
5 - 1000 MHz	2.0 dB	2.5 dB
1000 - 2000 MHz	2.5 dB	3.0 dB
VSWR (Worst case in attenuation range)		
5 - 2000 MHz	$\leq 1.8:1$	2.2:1
Flatness Over Frequency (Max.)		
(Attenuation = min. to 15db, 5 - 1000 MHz)	$\pm 0.5\text{ dB}$	$\pm 1.0\text{ dB}$
Bias Voltage		+15V
Bias Current (Max.)		15 mA
Control Voltage		0 V to + 15V
Control Current (Max.)		7 mA
Switching Speed (Max.)		
10% - 90%	60 μsec	120 μsec
0% - 100%	75 μsec	125 μsec

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

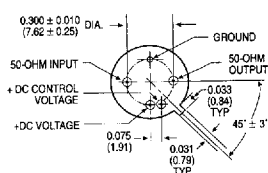
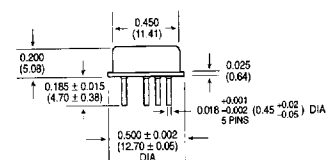
Absolute Maximum Ratings

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.

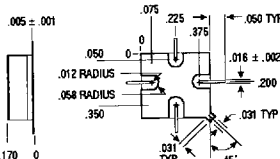
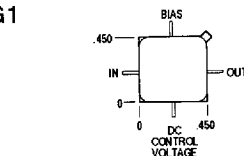


Outline Drawing



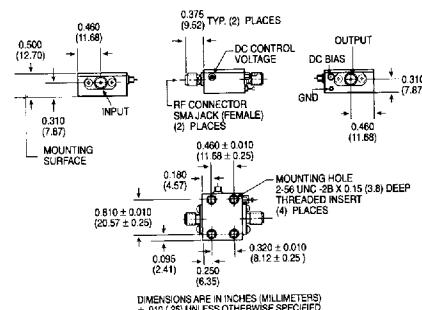
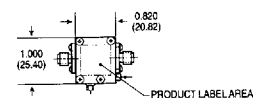
DIMENSIONS ARE IN INCHES (MILLIMETERS)
+ .005 (.13) UNLESS OTHERWISE SPECIFIED

SMG1



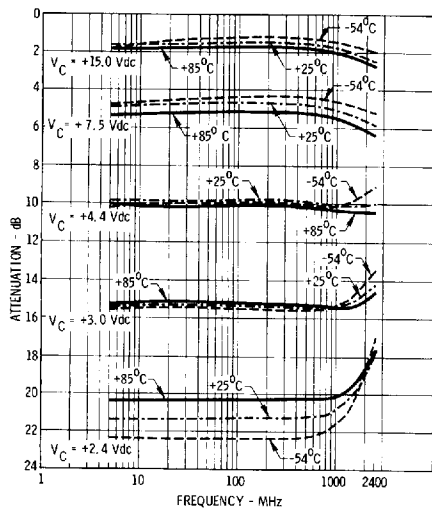
DIMENSIONS ARE IN INCHES (MILLIMETERS)
± .010 (.25) UNLESS OTHERWISE SPECIFIED

CG1

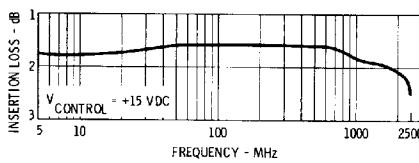


Typical Performance at 25°C

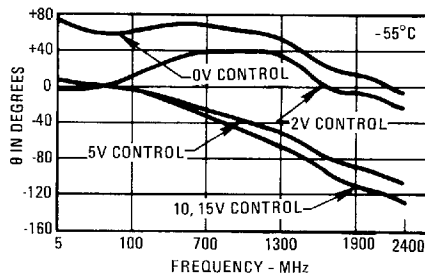
Attenuation vs. Frequency



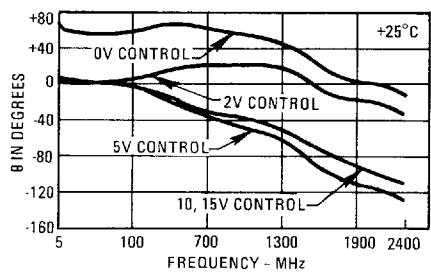
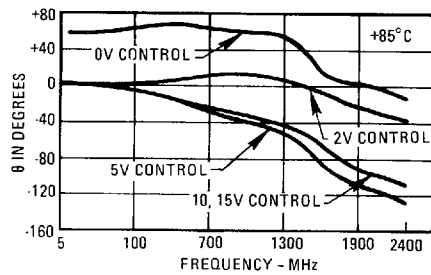
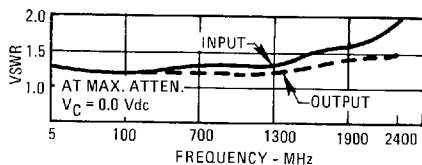
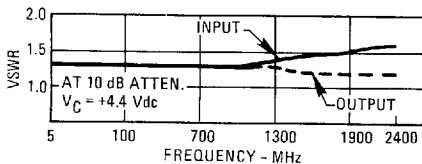
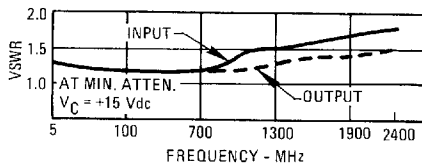
Insertion Loss vs. Frequency at $V_{\text{CONTROL}} = 15 \text{ V}$



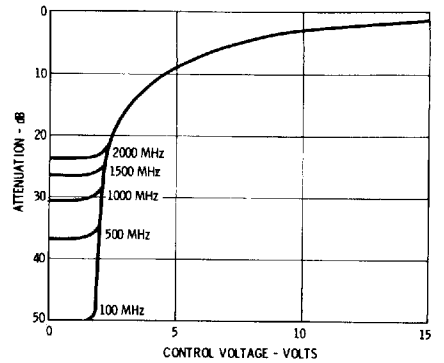
Phase vs. V_{CTL} vs. Frequency vs. Phase of the Moon



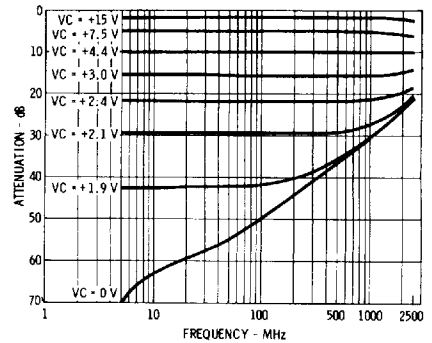
VSWR vs. Frequency



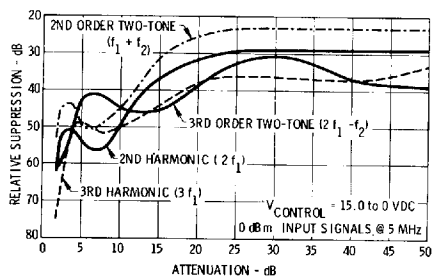
Attenuation vs. Control Voltage



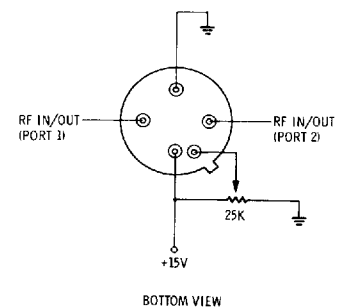
Attenuation vs. V_{CTL} vs. Frequency



Distortion Products



Typical Test Circuit



Schematic Diagram

