G40 / SMG40

500 TO 4000 MHz
TO-8 VOLTAGE-CONTROLLED ATTENUATOR MODULE

- ◆ AVAILABLE IN SURFACE MOUNT
- ◆ WIDE BAND PERFORMANCE
- ◆ EXCELLENT INSERTION LOSS: < 3.0 dB (TYP.)
- ◆ HIGH DYNAMIC RANGE: 30 dB TO 3000 MHz (TYP.)
- ◆ FAST SWITCHING: < 500 µsec 10 to 90% (TYP.) < 2 µsec 0 TO 100% (TYP.)

Specifications*

Characteristics	Typical	Guaranteed 0° to 50°C	Guaranteed -54° to 85°C
Frequency Range	500-4200 MHz	500-4000 MHz	500-4000 MHz
Maximum Attenuation Available (Min.)			
5-1000 MHz	>39 dB	34 dB	33 dB
1000-2000 MHz	>33 dB	28 dB	27 dB
2000-3000 MHz	>30 dB	25 dB	24 dB
3000-4000 MHz	>28 dB	23 dB	22 dB
Insertion Loss			
500 - 1000 MHz	2.2 dB	3.0 dB	3.5 dB
2000 - 4000 MHz	2.7 dB	3.5 dB	4.0 dB
VSWR			
500-3000 MHz	<1.7:1	2.2:1	2.3:1
3000-4000 MHz	<1.7:1	2.2:1	2.3:1
Flatness Over Frequency (Max.)			
(Attenuation = min. to 15 dB, 5-1000 MHz)			
500-3000 MHz	±0.3 dB	±0.8 dB	±1.0 dB
500-4000 MHz	±1.2 dB	±1.6 dB	±2.0 dB
Switching Speed			
10% to 90%	<500 µsec	800 µsec	900 µsec
0% to 100%	<2 µsec	4 µsec	5 µsec
Bias Voltage		+15 V	+15 V
Bias Current (Max.)	9.5 mA	12 mA	13 mA
Control Voltage		0 to +15 V	0 to +15 V
Control Current (Max.)	6 mA	10 mA	11 mA

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

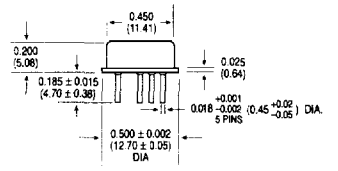
Absolute Maximum Ratings

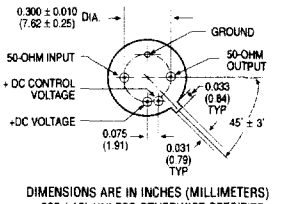
Storage Temperature ..... -62°C to +125°C
Maximum Case Temperature ..... +125°C
Maximum DC Voltage ..... +18 Volts
Maximum Continuous RF Input Power ..... +20 dBm
Maximum Short Term RF Input Power (1 Minute Max.) ..... +200 Milliwatts
Maximum Peak Power ..... (3 µsec Max.) 1 Watt
"S" Series Burn-In Temperature.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

Weight approximately 2.0 grams (0.07 oz.)

Outline Drawing

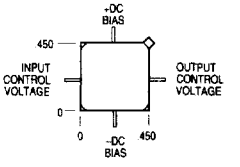
G40

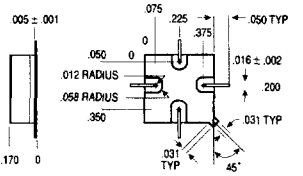




DIMENSIONS ARE IN INCHES (MILLIMETERS)
±.005 (.13) UNLESS OTHERWISE SPECIFIED

SMG40





DIMENSIONS ARE IN INCHES (MILLIMETERS)
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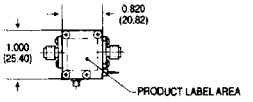
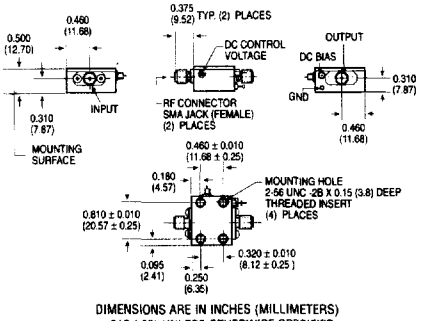
CG40





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

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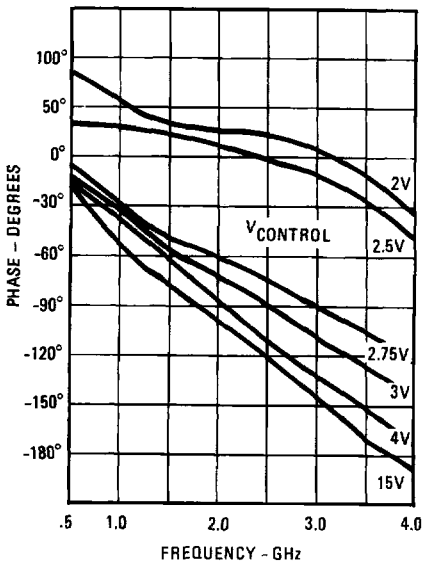
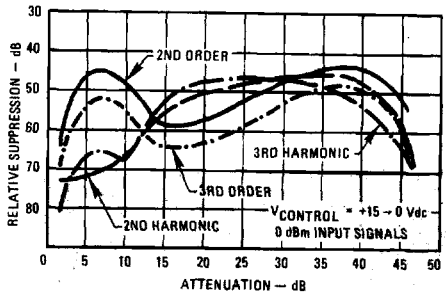
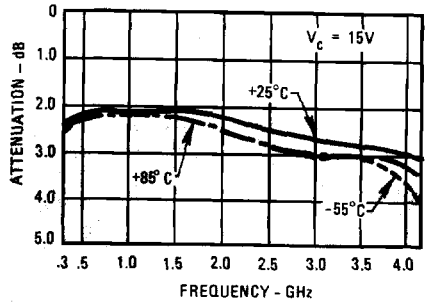
Phase vs. $V_{Control}$ vs. Frequency



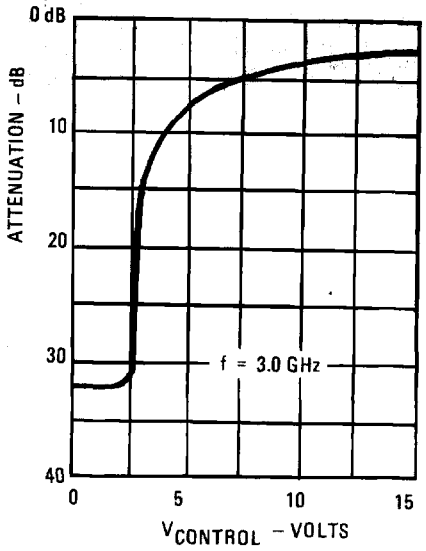
Distortion Products vs. Attenuation at 500 MHz

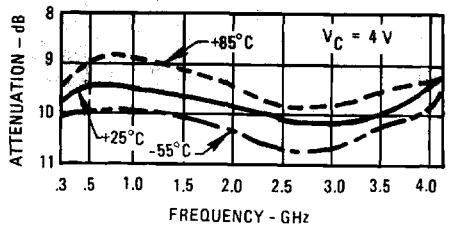


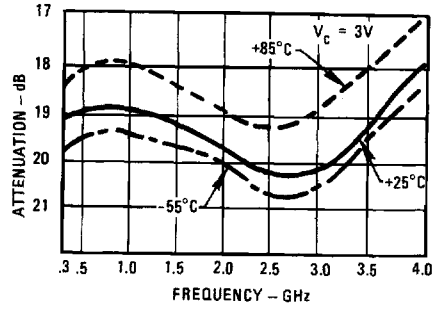
Attenuation vs. $V_{Control}$ vs. Frequency



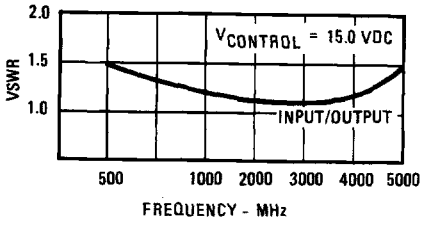
Attenuation vs. Control Voltage

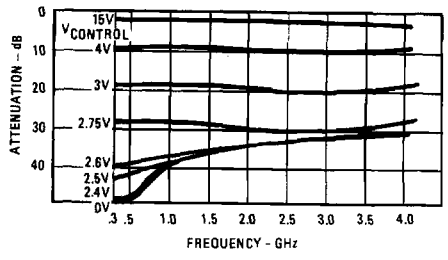


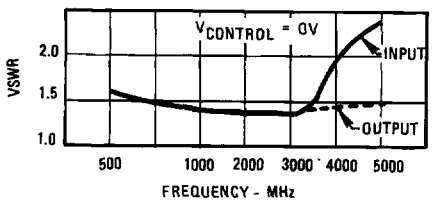




VSWR







4

Typical Switching Performance at 25°C

The switching speed of the WJ-G40 is shown in Figure 1 with the horizontal scale set at 2 μS. The very high speed of this attenuator is apparent and an expanded view of the switching is shown in Figure 2. Note the WJ-G40 settles in less than 1 μS.

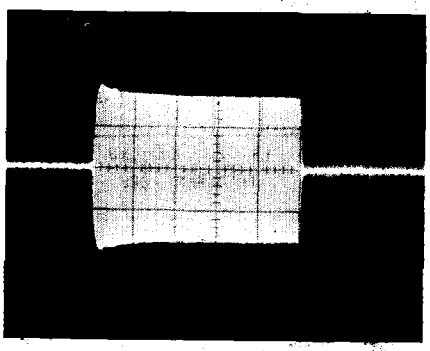


Fig. 1

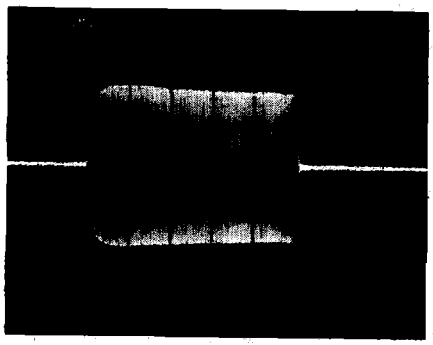


Fig. 2

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