

## Voltage Controlled Attenuator Module 5 - 2000 MHz

Rev. V4

### Features

- Available in Surface Mount
- Low VSWR: <1.5:0
- Low Insertion Loss: 2.3 dB @ 1000 MHz
- Low Distortion: >75 dB @ 15 V
- RoHS\* Compliant

### Description

The G2 / SMG2 attenuator is a discrete hybrid design, which uses thin film manufacturing processes for accurate performance and high reliability.

The design used 3 pin diodes to provide a non linear attenuation response across a broadband frequency range. Both TO-8 and surface mount packages are hermetically sealed. MIL-STD-883 environmental screening is available.

### Product Image



### Electrical Specifications<sup>1</sup>: $V_{CC} = 15\text{ V}$ , $Z_0 = 50\ \Omega$

Parameter	Units	Typical	Guaranteed	
		+25°C	0° to +50°C	-54° to +85°C
Frequency	MHz	5 - 2200	5 - 2000	5 - 2000
Maximum Attenuation (min.)	dB			
5 - 500 MHz		34	31	30
500 - 1000 MHz		28	25	24
1000 - 2000 MHz	22	20	18	
Insertion Loss ( $V_{CTRL} = 15\text{ V}$ ) (max.)	dB			
5 - 1000 MHz		2.3	3.0	3.5
1000 - 2000 MHz		2.8	3.5	4.0
VSWR (worst case in attenuation range)	dB			
5 - 2000 MHz		<1.5:0	2.2:1	2.3:1
Flatness over Frequency (max.) (Attenuation = min. to 15 dB, 5 - 2000 MHz)	dB	±0.4	±0.8	±1.0
Switching Speed (max.)	µs			
10% - 90 %		25	—	—
0% - 100 %		70		
Bias Voltage	V	5	5	5
Control Voltage	V	0 - 15	0 - 15	0 - 15
Bias Current (max.)	mA	5.0	6.5	7.0
Control Current (max.)	mA	4	6	7

1. Over temperature performance limits for part MAAM-007987-000CG2 are guaranteed from 0°C to +50°C only.

\* Restrictions on Hazardous Substances, European Union Directive 2011/65/EU.

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### Absolute Maximum Ratings<sup>2,3</sup>

Parameter	Absolute Maximum
Short Term RF Input Power (1 minute max.)	200 mW
Peak Power (3 $\mu$ s max.)	1 W
DC Voltage	18 V
DC Bias Voltage	10 V
"S" Series Burn-In Temperature	+125°C
Case Temperature	+125°C
Storage Temperature	-62°C to +125°C

- Exceeding any one or combination of these limits may cause permanent damage to this device.
- MACOM does not recommend sustained operation near these survivability limits.

### Ordering Information

Part Number	Package
G2	TO-8
SMG2	Surface Mount
MAAM-007987-000CG2	SMA Connectorized <sup>1</sup>

- The Connectorized version is not RoHS compliant.

### Handling Procedures

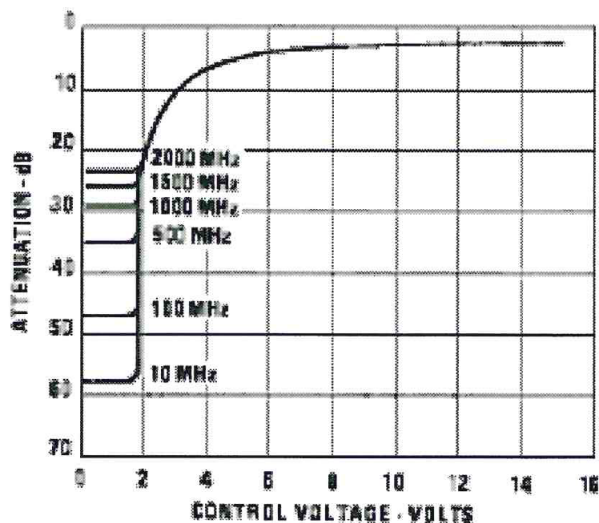
Please observe the following precautions to avoid damage:

### Static Sensitivity

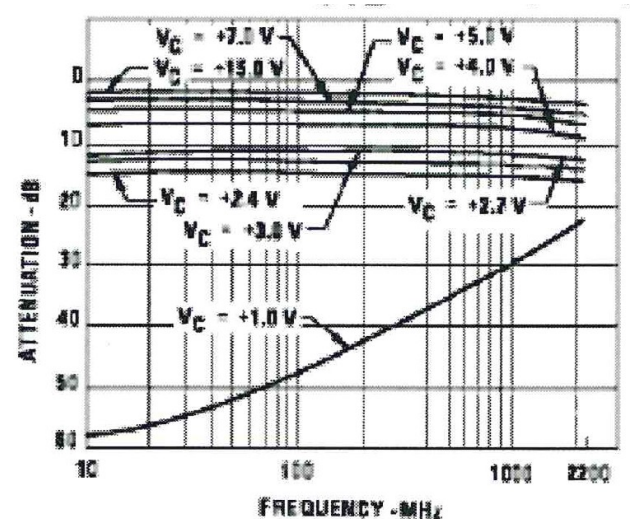
These electronic devices are sensitive to electrostatic discharge (ESD) and can be damaged by static electricity. Proper ESD control techniques should be used when handling these devices.

### Typical Performance Curves

Attenuation vs. Control Voltage



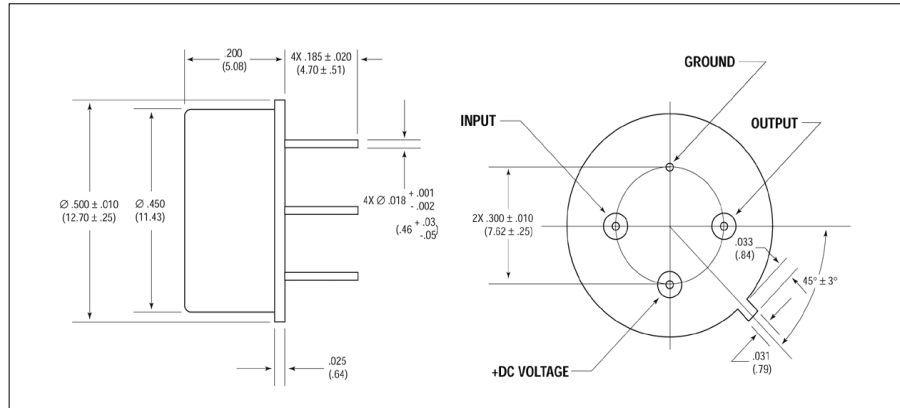
Attenuation vs. Control Voltage vs. Frequency



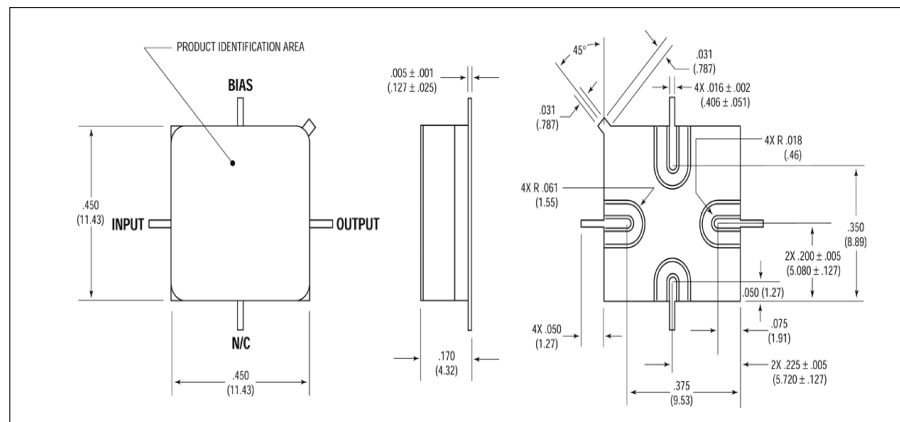
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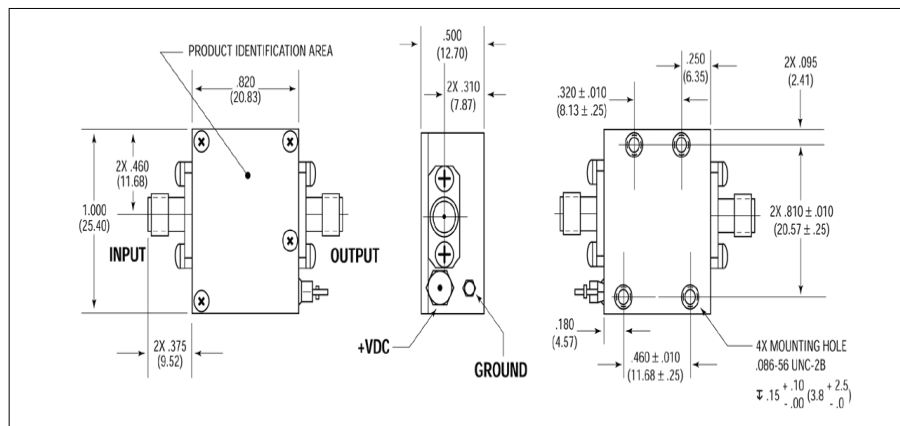
### Outline Drawing: TO-8 \*



### Outline Drawing: Surface Mount



### Outline Drawing: SMA Connectorized



\* Dimensions are inches (millimeters) ±0.015 (0.38) unless otherwise specified.