G2 / SMG2

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[1]: V_{CC} = 15 V, Z_0 = 50 Ω

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.) 5 - 500 MHz 500 - 1000 MHz 1000 - 2000 MHz	dB	 34 28 22	 31 25 20	 30 24 18
Insertion Loss (V_{CTRL} = 15 V) (max.) 5 - 1000 MHz 1000 - 2000 MHz	dB	 2.3 2.8	 3.0 3.5	 3.5 4.0
VSWR (worst case in attenuation range) 5 - 2000 MHz	dB	<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.) 10% - 90 % 0% - 100 %	µs	 25 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.

Absolute Maximum Rantings[2,3]

Parameter	Absolute Maximum
Short Term RF Input Power (1 minute max.)	200 mW
Peak Power (3 µs 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

2. Exceeding any one or combination of these limits may cause permanent damage to this device.
3. 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[1]

1. The Connectorized version is not RoHS compliant.

Handling Procedures

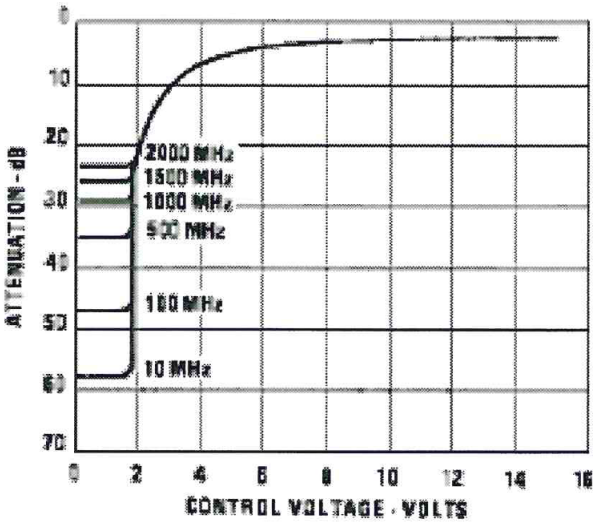
Please observe the following precautions to avoid damage:

Static Sensitivity

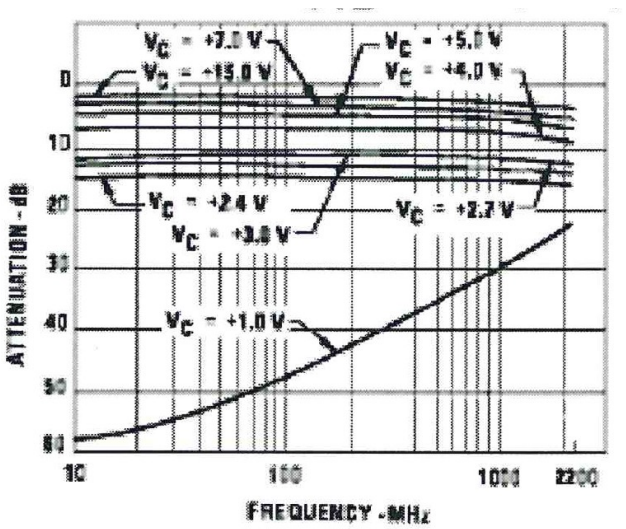
These electronic devices are sensitive to electrostatic discharge (ESD) and can be damaged by static electricity. Proper ESD control techniques should be used when handling these devices.

Typical Performance Curves

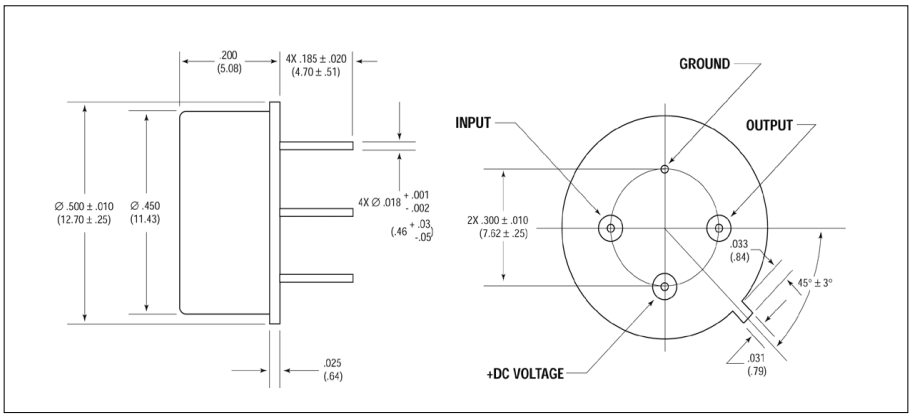
Attenuation vs. Control Voltage



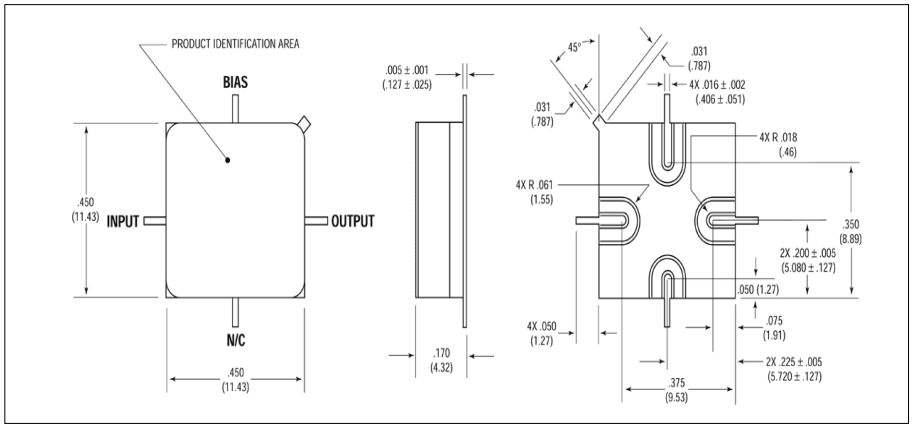
Attenuation vs. Control Voltage vs. Frequency



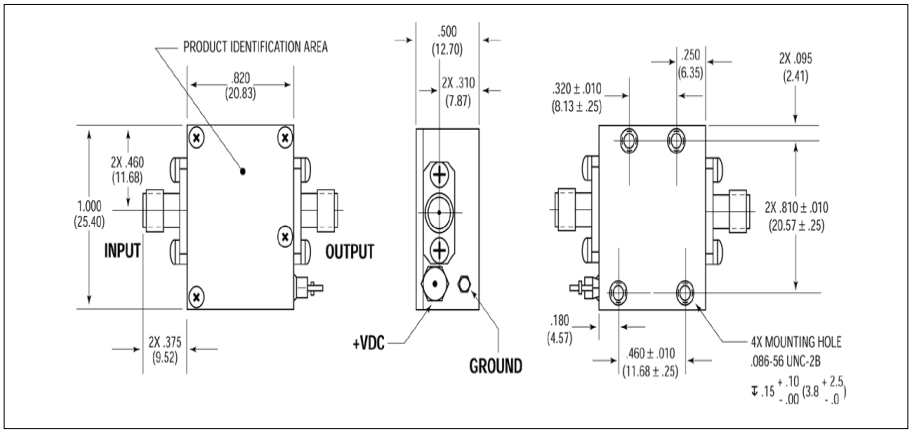
Outline Drawing: TO-8 *



Outline Drawing: Surface Mount



Outline Drawing: SMA Connectorized



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