

## Voltage-Controlled Attenuator Module

### 5 to 2000 MHz

Rev. V3

#### Features

- AVAILABLE IN SURFACE MOUNT
- LOW VSWR: < 1.5:1 (TYP.)
- LOW INSERTION LOSS: 2.3 dB TO 1000 MHz (TYP.)
- LOW DISTORTION: > 75 dB (TYP.) AT  $V_{\text{control}} = +15\text{V}$

#### Description

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

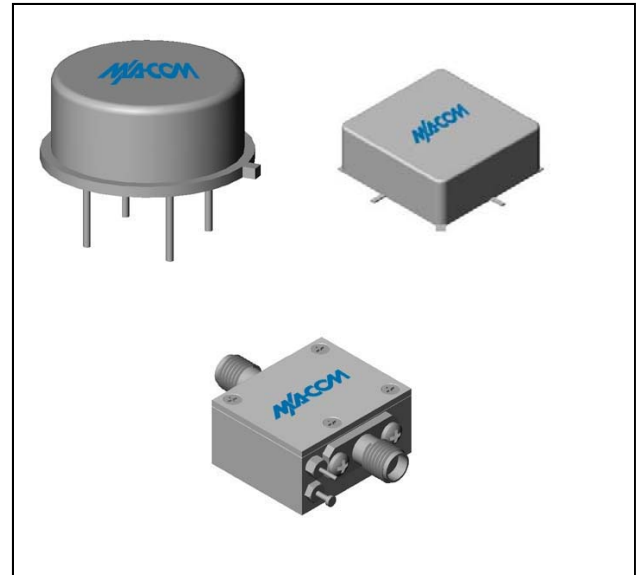
This design uses three pin diodes to provide a non linear attenuation response across a broadband frequency range. Both TO-8 and Surface Mount packages are hermetically sealed, and MIL-STD-883 environmental screening is available.

#### Ordering Information

Part Number	Package
G2	TO-8
SMG2	Surface Mount
MAAM-007987-000CG2	SMA Connectorized **

\*\* The connectorized version is not RoHs compliant.

#### Product Image



#### Electrical Specifications: $Z_0 = 50\Omega$ , $V_{CC} = +15\text{ V}_{DC}$

Parameter	Units	Typical	Guaranteed	
		25°C	0° to 50°C	-54° to +85°C*
Frequency	MHz	5-2200	5-2000	5-2000
Maximum Attenuation Available (min)				
5-500 MHz	dB	34	31	30
500-1000 MHz	dB	28	25	24
1000-2000 MHz	dB	22	20	18
Insertion Loss ( $V_{ctrl} = +15\text{ V}$ ) (max)				
5-1000 MHz	dB	2.3	3.0	3.5
1000-2000 MHz	dB	2.8	3.5	4.0
VSWR (worst case in attenuation range)				
5-2000 MHz	dB	<1.5:1	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%	µsec	25	50	60
0% - 100%	µsec	70	125	140
Bias Voltage	Volts	+5	+5	+5
Bias Current (max)	mA	5	6.5	7
Control Voltage	Volts	0 to +15	0 to +15	0 to +15
Control Current (max)	mA	4	6	7

\*Over temperature performance limits for part number CG2, guaranteed from 0°C to +50°C only.

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 Visit [www.macomtech.com](http://www.macomtech.com) for additional data sheets and product information.

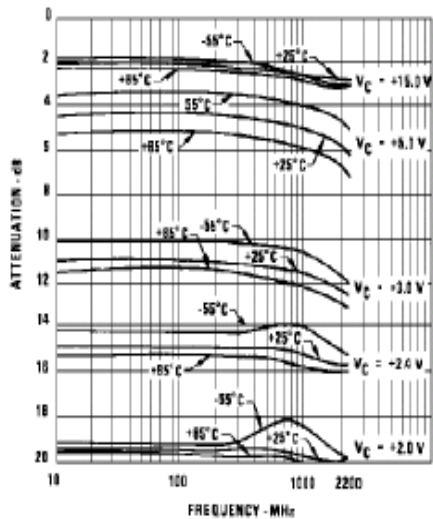
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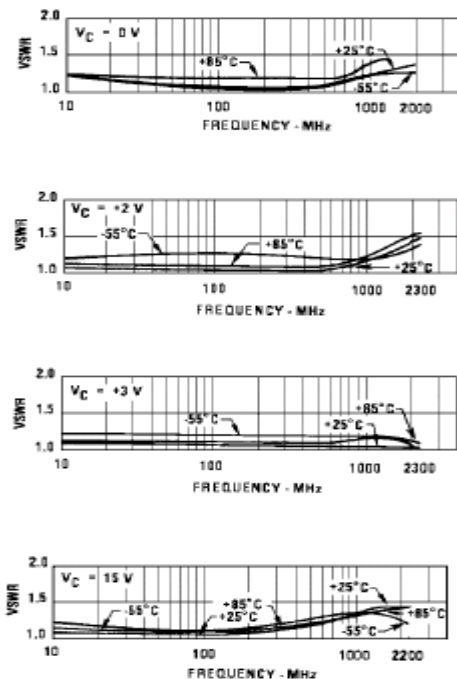
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## Typical Performance Curves at +25°C

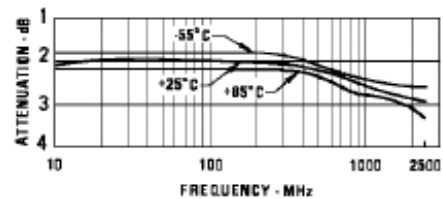
### Attenuation vs. Frequency



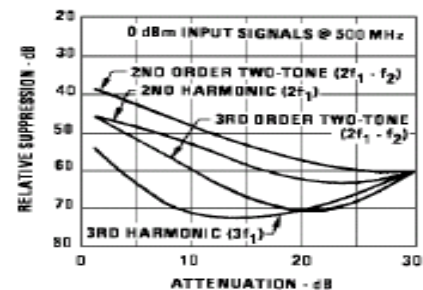
### Input VSWR vs. Frequency



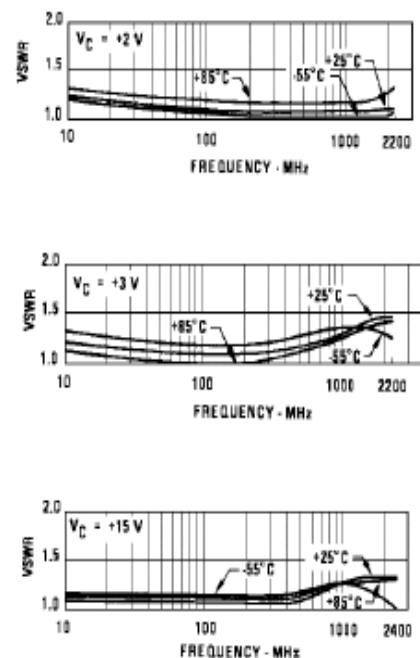
### Insertion Loss vs. Frequency



### Distortion Products



### Output VSWR vs. Frequency

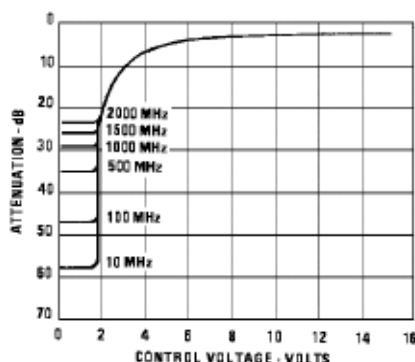


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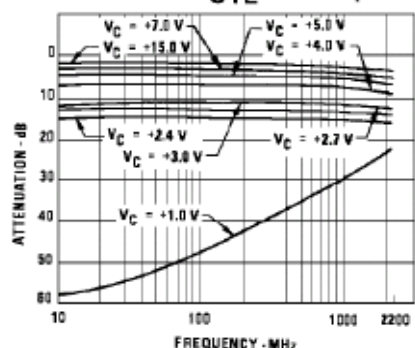
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### Typical Performance Curves at +25°C

**Attenuation vs. Control Voltage**



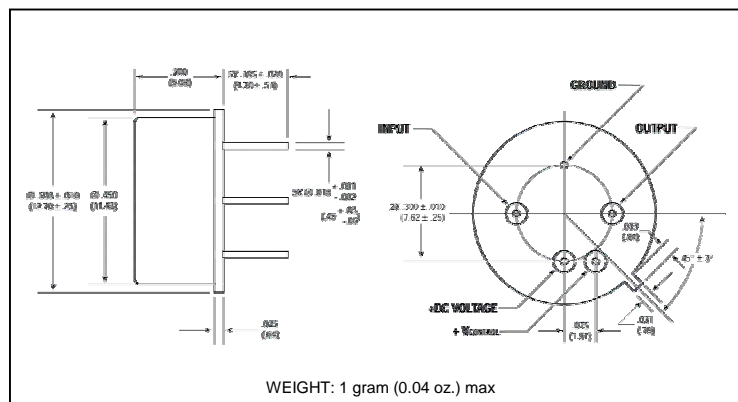
**Attenuation vs.  $V_{CTL}$  vs. Frequency**



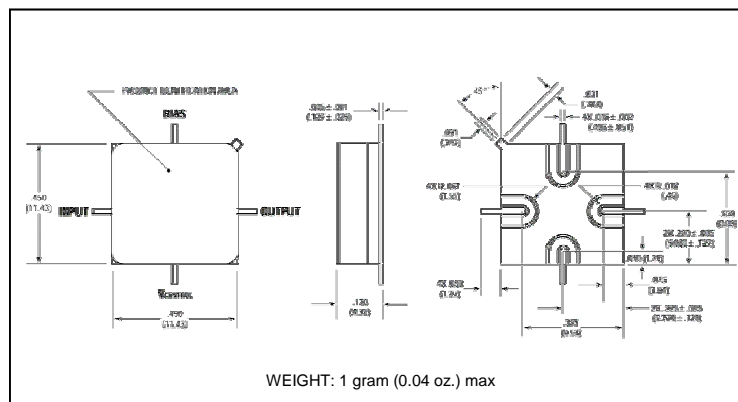
### Absolute Maximum Ratings

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

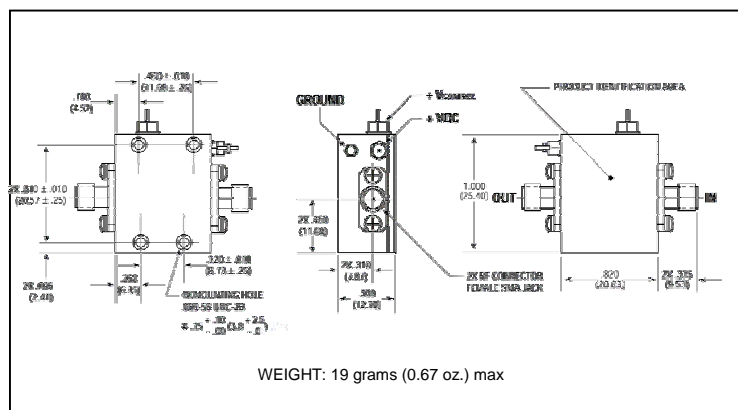
### Outline Drawing: TO-8 \*



### Outline Drawing: Surface Mount \*



### Outline Drawing: SMA Connectorized \*



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