

**Voltage-Controlled Attenuator Module  
500 to 4000 MHz**

**G40 / SMG40**

V3

**Features**

- WIDE BAND PERFORMANCE
- EXCELLENT INSERTION LOSS: < 3.0 dB (TYP.)
- HIGH DYNAMIC RANGE: 30 dB TO 3000 MHz (TYP.)
- FAST SWITCHING: < 0.5  $\mu$ sec, 10 TO 90% (TYP.)  
< 2  $\mu$ sec, 0 TO 100% (TYP.)

**Description**

The G40 attenuator is a discrete hybrid design, which uses thin film manufacturing processes for accurate performance and high reliability.

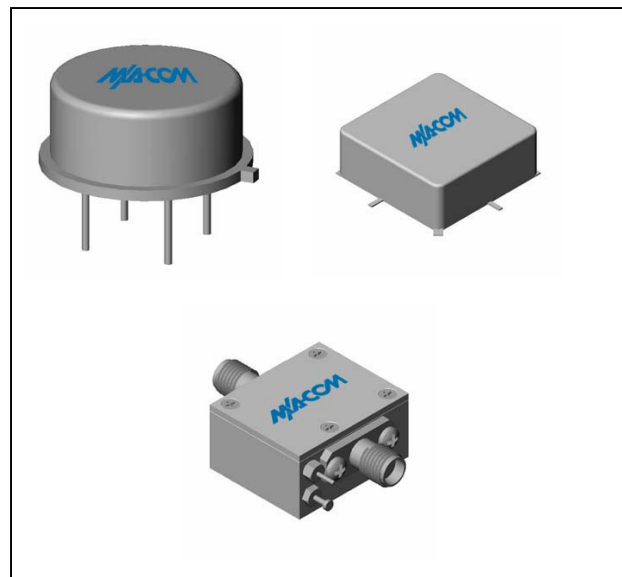
This design uses three pin diodes to provide a non linear attenuation response across a broadband frequency range. Both TO-8 and Surface Mount packages are hermetically sealed, and MIL-STD-883 environmental screening is available.

**Ordering Information**

Part Number	Package
G40	TO-8
SMG40	Surface Mount
CG40 **	SMA Connectorized

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

**Product Image**



**Electrical Specifications:  $Z_0 = 50\Omega$ ,  $V_{CC} = +15 V_{DC}$**

Parameter	Units	Typical	Guaranteed	
		25°C	0° to 50°C	-54° to +85°C*
Frequency	MHz	500-4200	500-4000	500-4000
Maximum Attenuation Available (min)	500-1000 MHz	>39	34	33
	1000-2000 MHz	>33	28	27
	2000-3000 MHz	>30	25	24
	3000-4000 MHz	>28	23	22
Insertion Loss	500-2000 MHz	2.2	3.0	3.5
	2000-4000 MHz	2.7	3.5	4.0
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, 500-1000 MHz)	500-3000 MHz	$\pm 0.3$	$\pm 0.8$	$\pm 1.0$
	500-4000 MHz	$\pm 1.2$	$\pm 1.6$	$\pm 2.0$
Switching Speed (max.)	10% - 90%	<0.5	0.8	0.9
	0% - 100%	<2	4	5
Bias Voltage	Volts	+15	+15	+15
Bias Current (max)	mA	9.5	12	13
Control Voltage	Volts	0 to +15	0 to +15	0 to +15
Control Current (max)	mA	6	10	11

\*Over temperature performance limits for part number CG40, guaranteed from 0°C to +50°C only.

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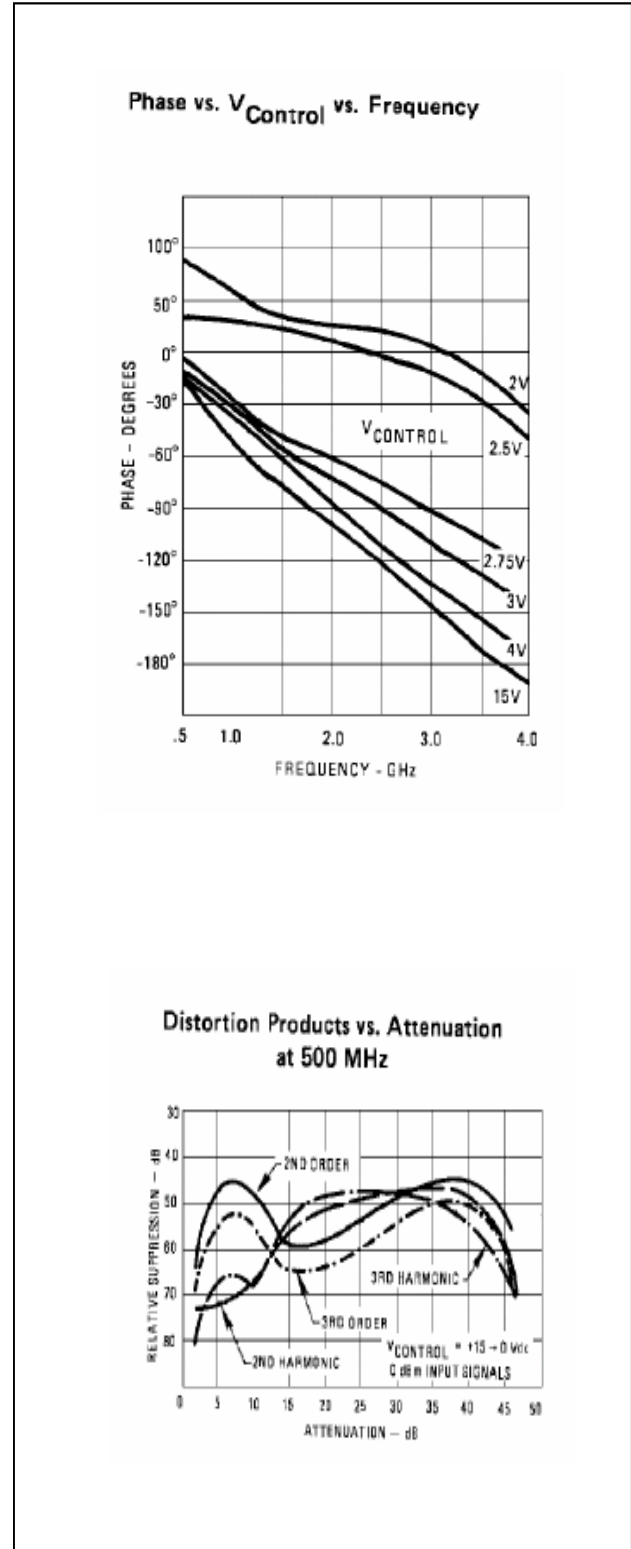
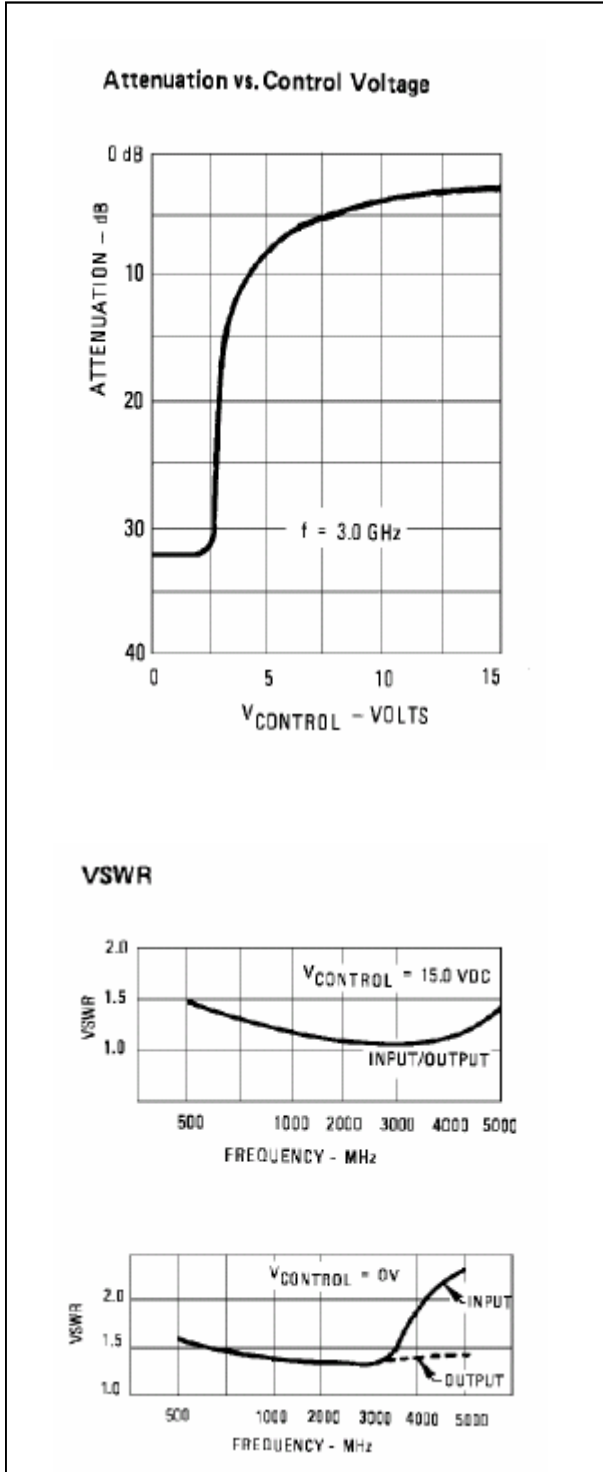
Visit [www.macom.com](http://www.macom.com) for additional data sheets and product information.

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**Typical Performance Curves at +25°C**



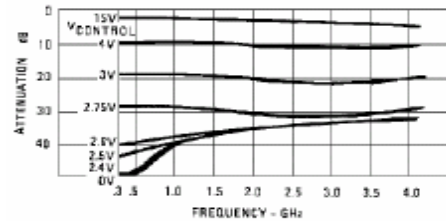
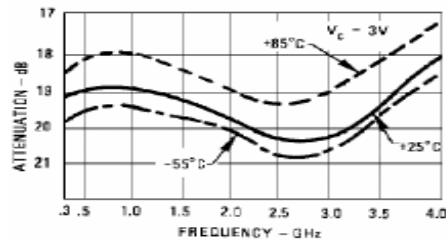
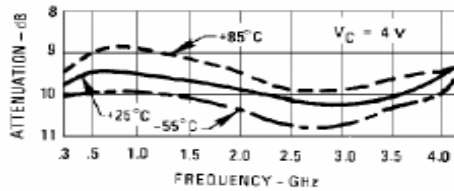
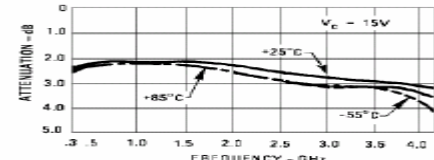
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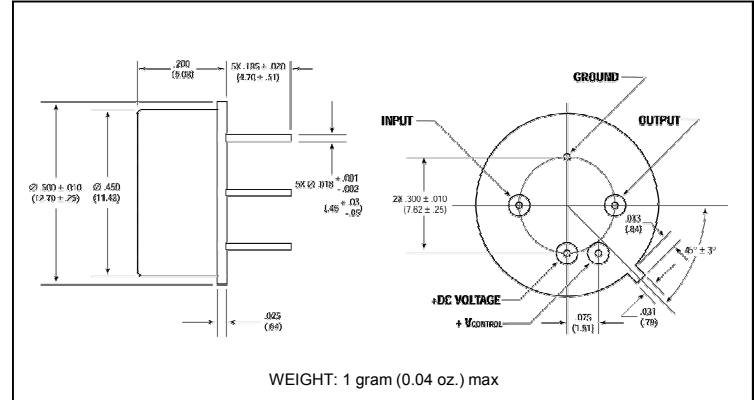
**Attenuation vs.  $V_C$  Control vs. Frequency**



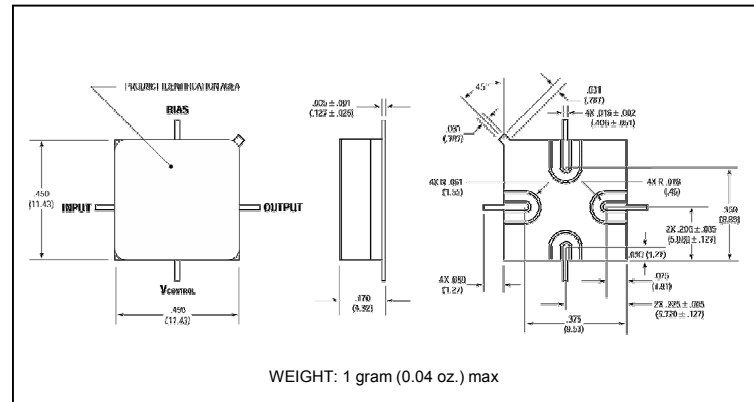
**Absolute Maximum Ratings**

Parameter	Absolute Maximum
Storage Temperature	-62°C to +125°C
Maximum Case Temperature	125°C
Maximum DC Voltage	+18 V
Maximum DC Bias Voltage	+20 V
Maximum Short Term RF Input power (1 minute max.)	200 mW
Maximum Peak Power (3 µsec max.)	1 W
"S" Series Burn-In Temperature (case)	+125°C

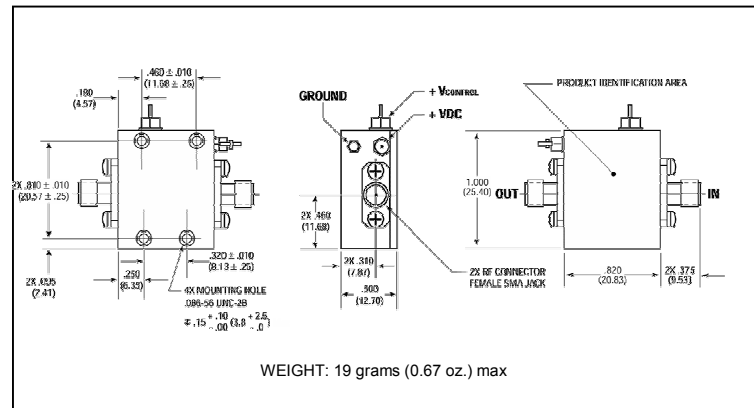
**Outline Drawing: TO-8 \***



**Outline Drawing: Surface Mount \***



**Outline Drawing: SMA Connectorized \***



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