G40/SMG 40

Voltage-Controlled Attenuator Module
500 to 4000 MHz

Rev. V4

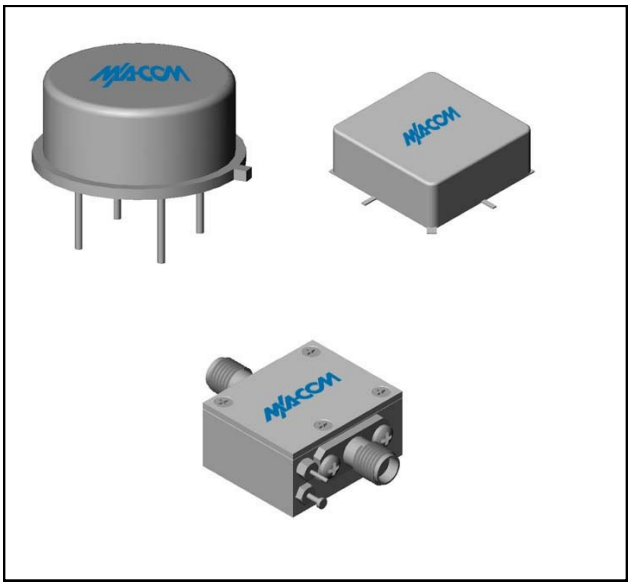
Features

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

Product Image



Ordering Information

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

** The connectorized version is not RoHs compliant.

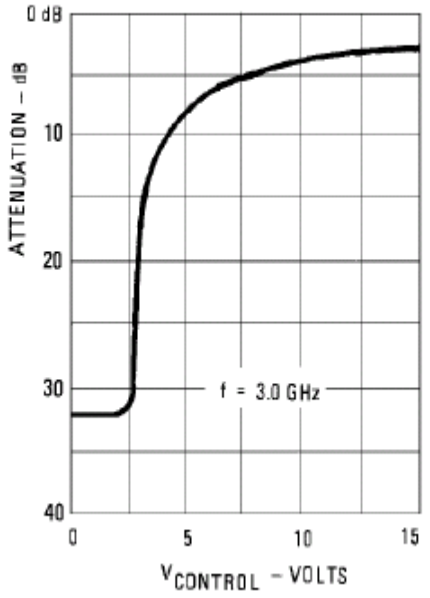
Electrical Specifications: Z_0 = 50Ω, V_{CC} = +15 V_{DC}

Parameter	Units	Typical	Guaranteed	
		25ºC	0º to 50ºC	-54º to +85ºC*
Frequency	MHz	500-4200	500-4000	500-4000
Maximum Attenuation Available (min) 500-1000 MHz 1000-2000 MHz 2000-3000 MHz 3000-4000 MHz	 dB dB dB dB	 >39 >33 >30 >28	 34 28 25 23	 33 27 24 22
Insertion Loss 500-2000 MHz 2000-4000 MHz	 dB dB	 2.2 2.7	 3.0 3.5	 3.5 4.0
VSWR 500-3000 MHz 3000-4000 MHz	 dB dB	 <1.7:1 <1.7:1	 2.2:1 2.2:1	 2.3:1 2.3:1
Flatness Over Frequency (max) (Attenuation = min to 15 dB, 500-1000 MHz) 500-3000 MHz 500-4000 MHz	 dB dB	 ±0.3 ±1.2	 ±0.8 ±1.6	 ±1.0 ±2.0
Switching Speed (max.) 10% - 90% 0% - 100%	 µsec µsec	 <0.5 <2	 0.8 4	 0.9 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

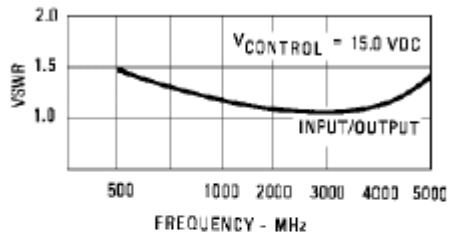
*Over temperature performance limits for part number CG40, guaranteed from 0°C to +50°C only.

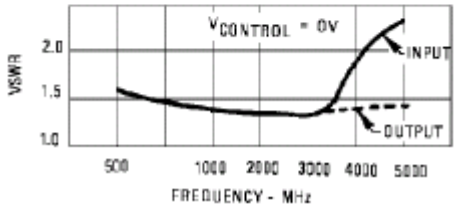
Typical Performance Curves at +25°C

Attenuation vs. Control Voltage

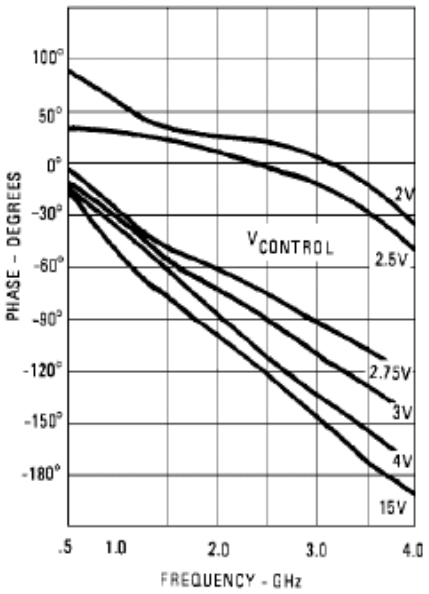


VSWR

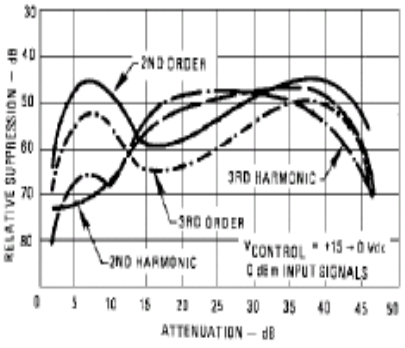




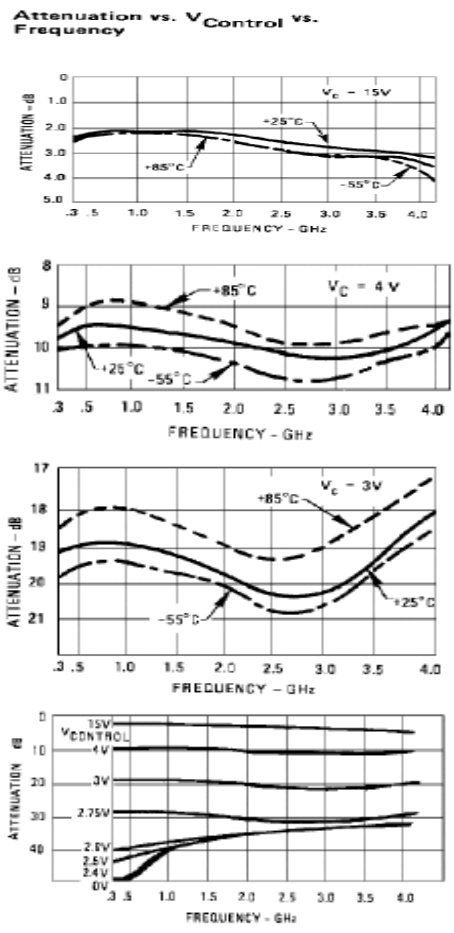
Phase vs. $V_{Control}$ vs. Frequency



Distortion Products vs. Attenuation at 500 MHz



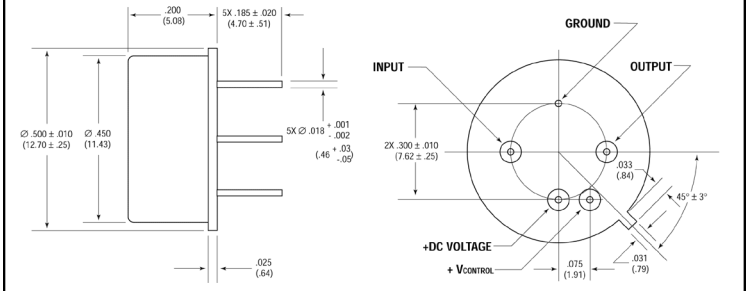
Typical Performance Curves at +25°C



Absolute Maximum Ratings

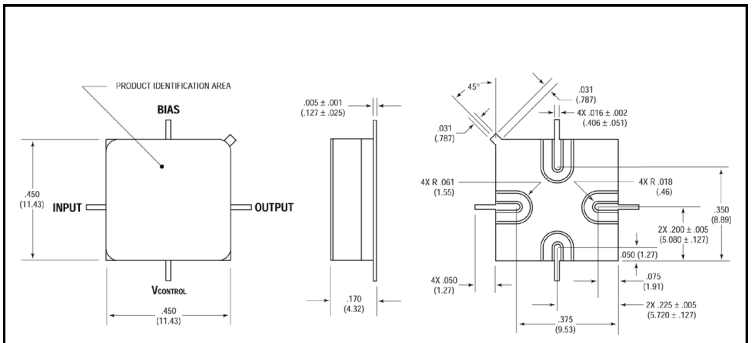
Parameter	Absolute Maximum
Storage Temperature	-62ºC to +125ºC
Maximum Case Temperature	125ºC
Maximum DC Voltage	+18 V
Maximum DC Bias Voltage	+20 V
Maximum Short Term RF Input power (1 minute max.)	200 mW
Maximum Peak Power (3 µsec max.)	1 W
"S" Series Burn-In Temperature (case)	+125ºC

Outline Drawing: TO-8 *



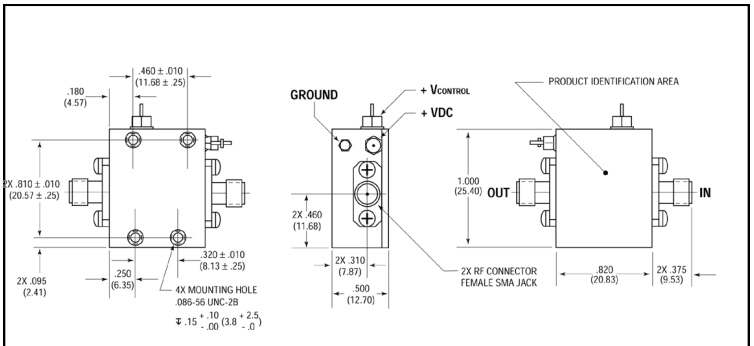
WEIGHT: 1 gram (0.04 oz.) max

Outline Drawing: Surface Mount *



WEIGHT: 1 gram (0.04 oz.) max

Outline Drawing: SMA Connectorized *



WEIGHT: 19 grams (0.67 oz.) max

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

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