tyco Electronics

RoHS Compliant

MACOM

Voltage-Controlled Attenuator Module 500 to 4000 MHz

G40 / SMG40

V3

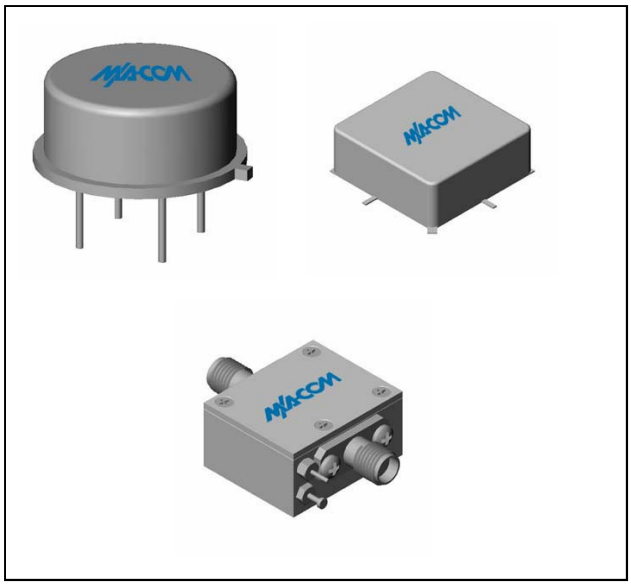
Features

- WIDE BAND PERFORMANCE
- EXCELLENT INSERTION LOSS: < 3.0 dB (TYP.)
- HIGH DYNAMIC RANGE: 30 dB TO 3000 MHz (TYP.)
- FAST SWITCHING: < 0.5 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: $Z_0 = 50\Omega$, $V_{CC} = +15\ V_{DC}$

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 0ºC to +50ºC only.

M/A-COM Inc. and its affiliates reserve the right to make changes to the product(s) or information contained herein without notice. M/A-COM makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does M/A-COM assume any liability whatsoever arising out of the use or application of any product(s) or information.

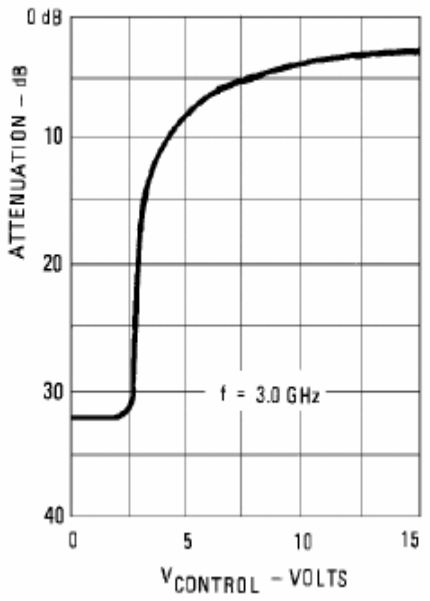
- **North America** Tel: 800.366.2266 / Fax: 978.366.2266
- **Europe** Tel: 44.1908.574.200 / Fax: 44.1908.574.300
- **Asia/Pacific** Tel: 81.44.844.8296 / Fax: 81.44.844.8298

Visit www.macom.com for additional data sheets and product information.

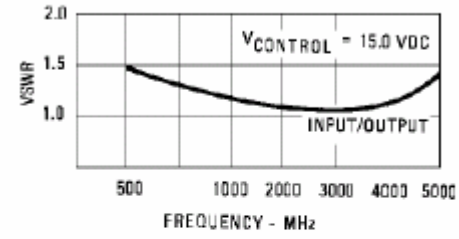
Voltage-Controlled Attenuator Module 500 to 4000 MHz

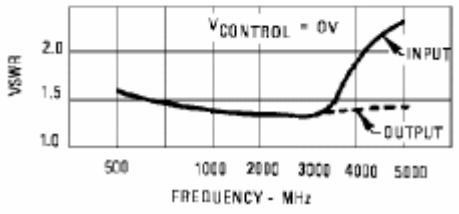
Typical Performance Curves at +25°C

Attenuation vs. Control Voltage

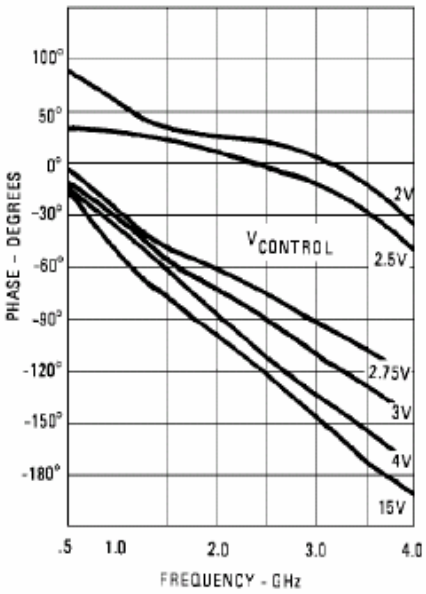


VSWR

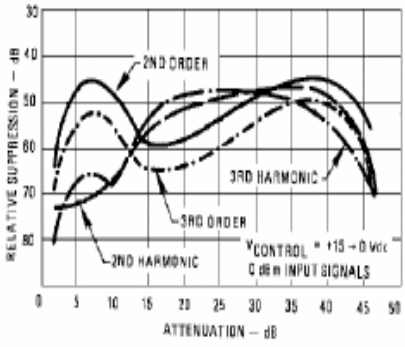




Phase vs. $V_{Control}$ vs. Frequency



Distortion Products vs. Attenuation at 500 MHz



M/A-COM Inc. and its affiliates reserve the right to make changes to the product(s) or information contained herein without notice. M/A-COM makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does M/A-COM assume any liability whatsoever arising out of the use or application of any product(s) or information.

- **North America** Tel: 800.366.2266 / Fax: 978.366.2266
- **Europe** Tel: 44.1908.574.200 / Fax: 44.1908.574.300
- **Asia/Pacific** Tel: 81.44.844.8296 / Fax: 81.44.844.8298

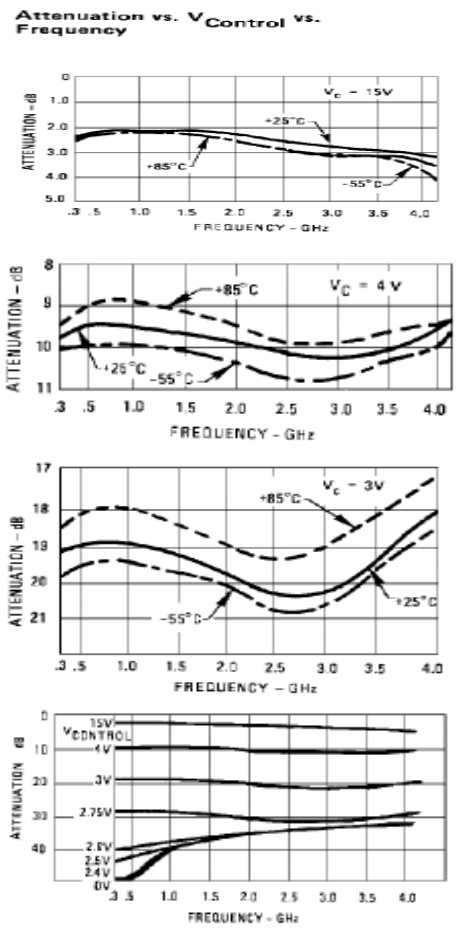
Visit www.macom.com for additional data sheets and product information.

Voltage-Controlled Attenuator Module 500 to 4000 MHz

G40 / SMG40

V3

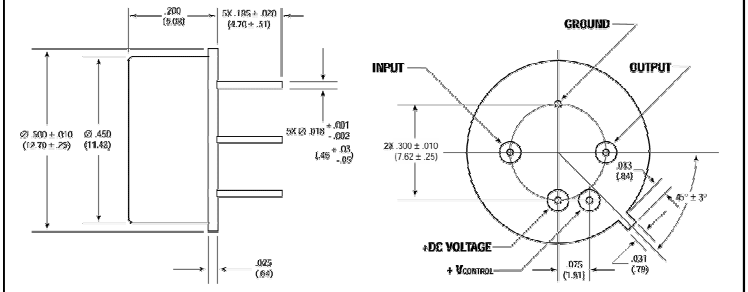
Typical Performance Curves at +25°C



Absolute Maximum Ratings

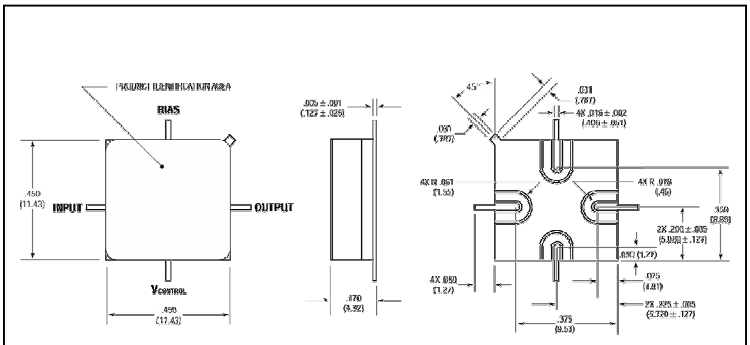
Parameter	Absolute Maximum
Storage Temperature	-62ºC to +125ºC
Maximum Case Temperature	125ºC
Maximum DC Voltage	+18 V
Maximum DC Bias Voltage	+20 V
Maximum Short Term RF Input power (1 minute max.)	200 mW
Maximum Peak Power (3 µsec max.)	1 W
"S" Series Burn-In Temperature (case)	+125ºC

Outline Drawing: TO-8 *



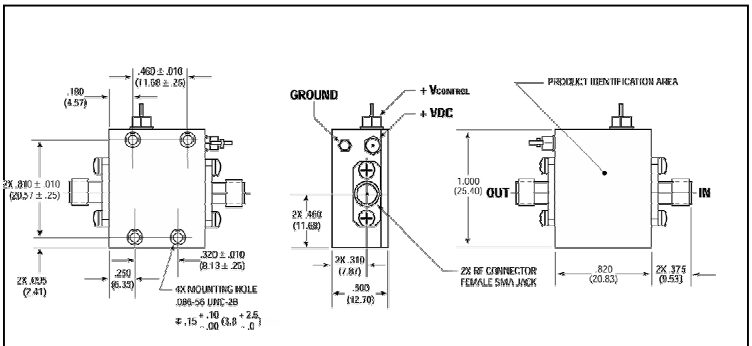
WEIGHT: 1 gram (0.04 oz.) max

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.

M/A-COM Inc. and its affiliates reserve the right to make changes to the product(s) or information contained herein without notice. M/A-COM makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does M/A-COM assume any liability whatsoever arising out of the use or application of any product(s) or information.

- **North America** Tel: 800.366.2266 / Fax: 978.366.2266
- **Europe** Tel: 44.1908.574.200 / Fax: 44.1908.574.300
- **Asia/Pacific** Tel: 81.44.844.8296 / Fax: 81.44.844.8298

Visit www.macom.com for additional data sheets and product information.