

Voltage-Controlled Attenuator Module 500 to 4000 MHz

Rev. 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 μ sec, 10 TO 90% (TYP.)
< 2 μ 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.

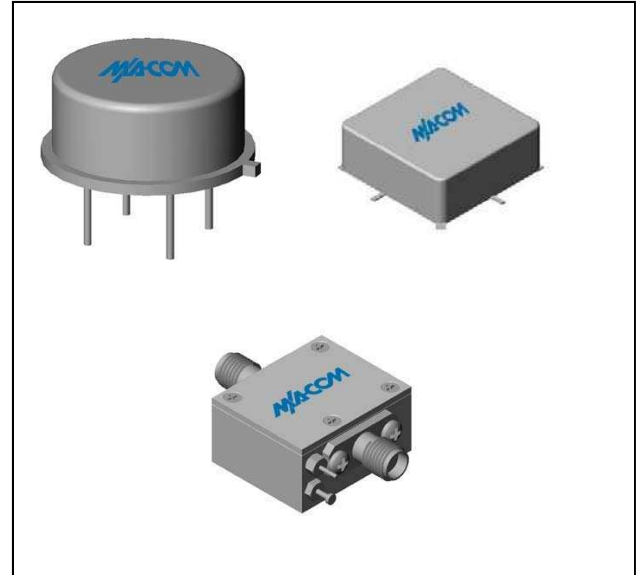
This design uses three pin diodes to provide a non linear attenuation response across a broadband frequency range. Both TO-8 and Surface Mount packages are hermetically sealed, and MIL-STD-883 environmental screening is available.

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 | ± 0.3 | ± 0.8 | ± 1.0 |
| | 500-4000 MHz | ± 1.2 | ± 1.6 | ± 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.

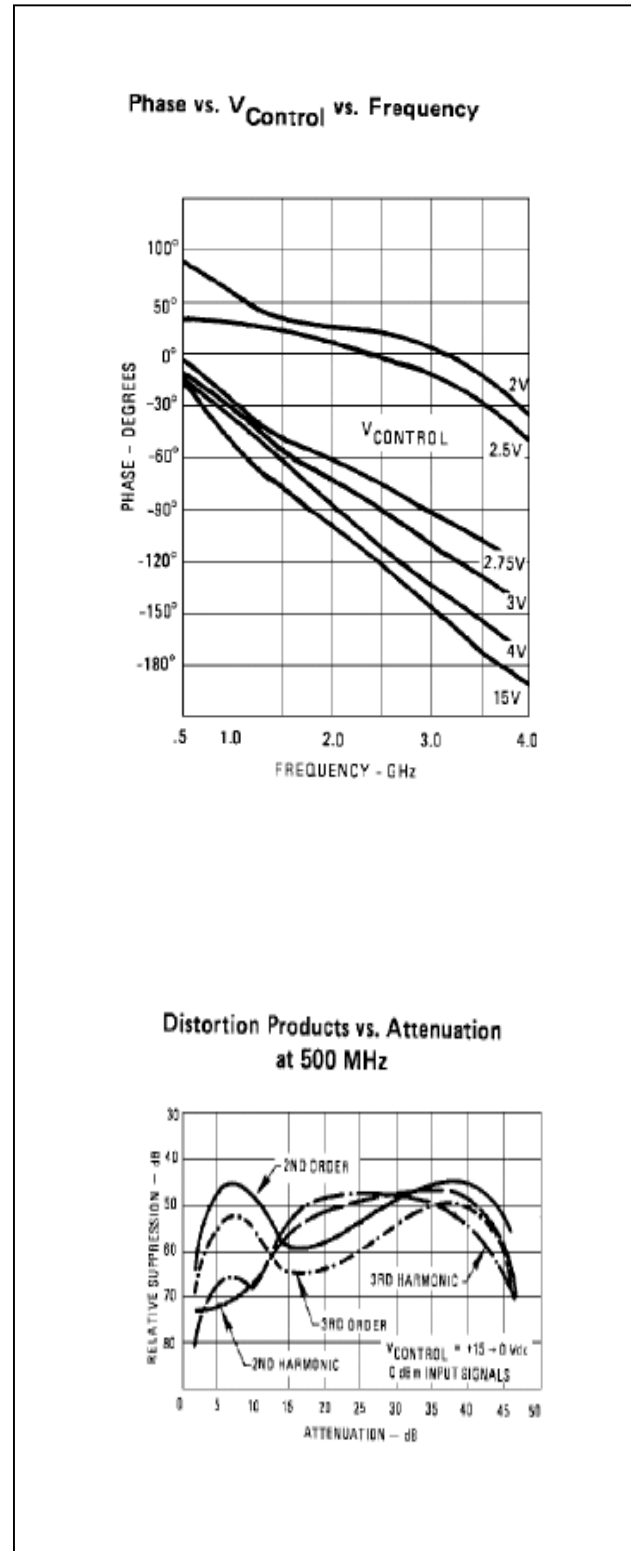
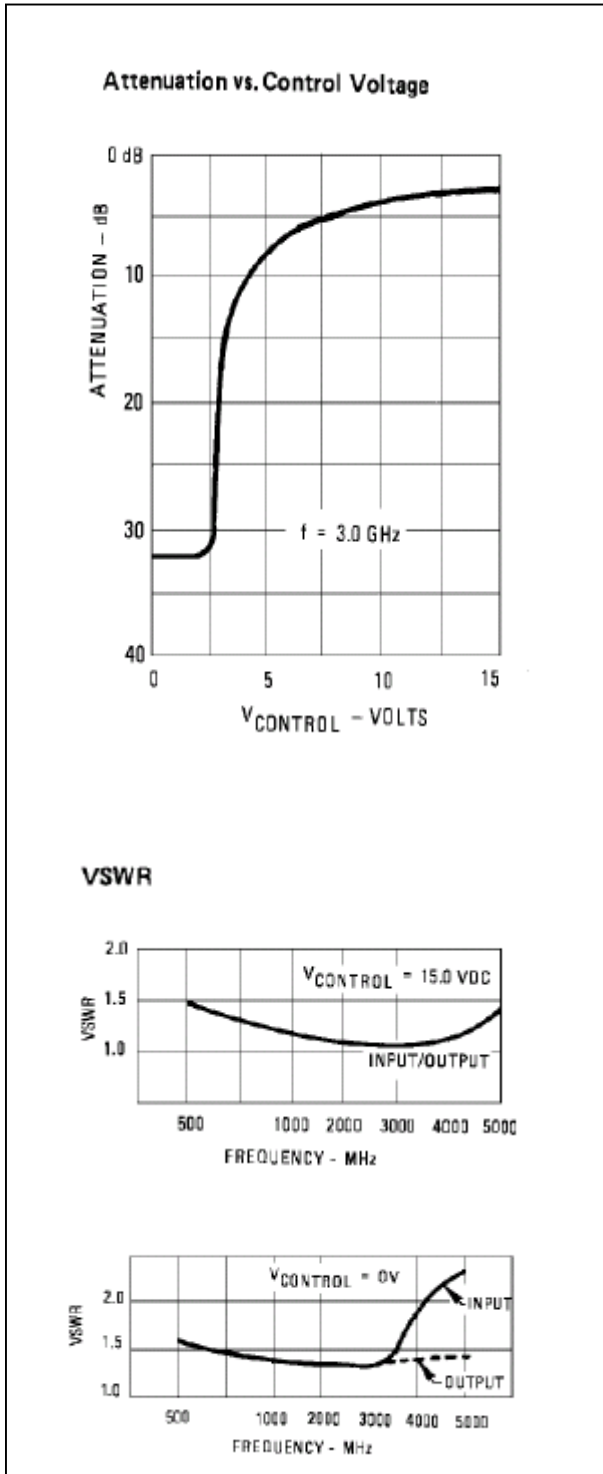
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Typical Performance Curves at +25°C

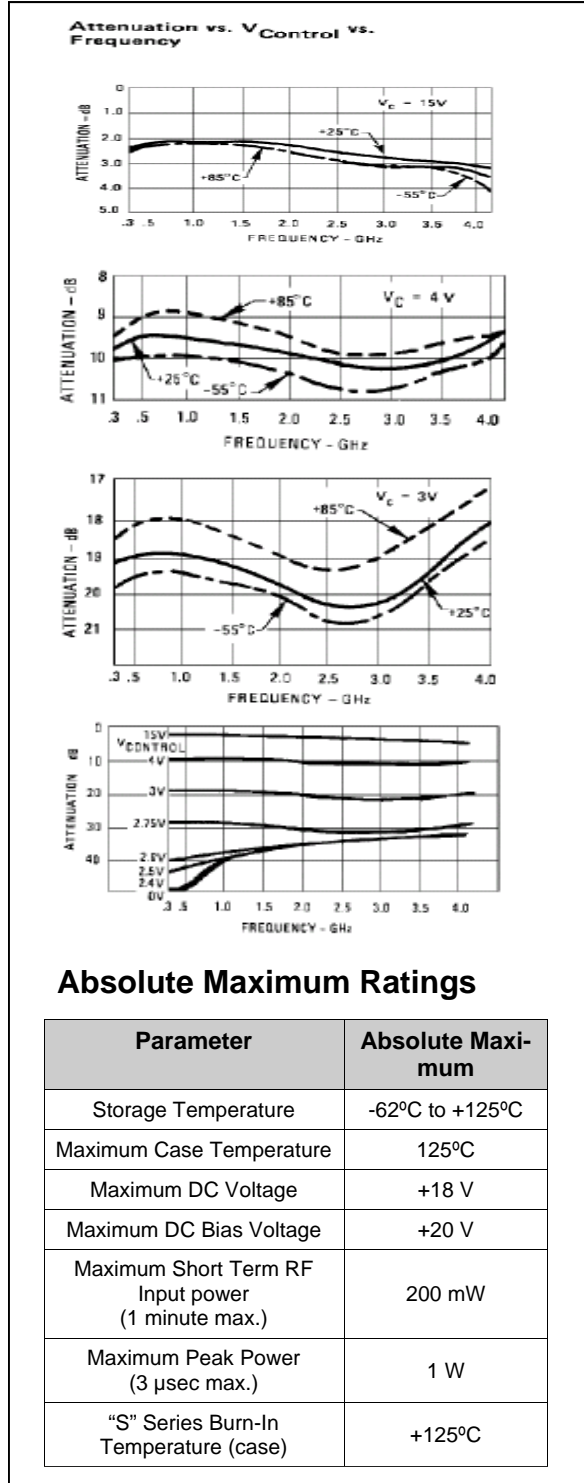


G40 / SMG40

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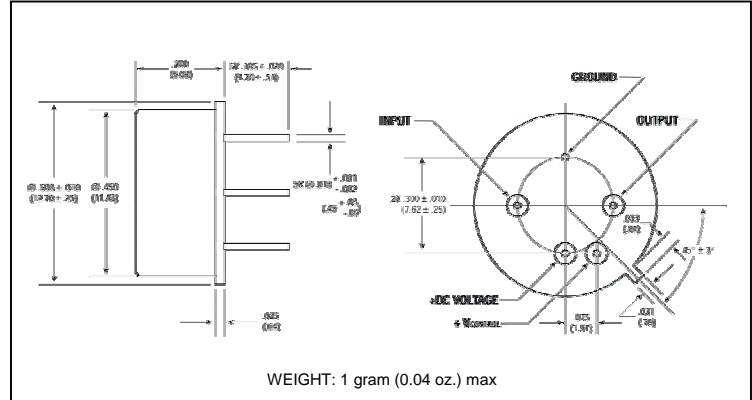
Typical Performance Curves at +25°C



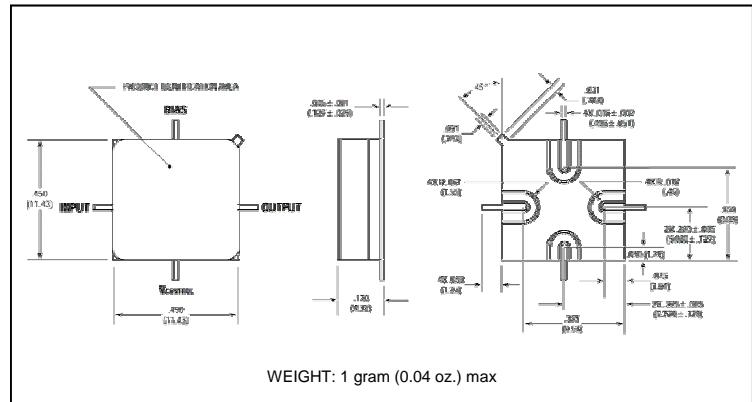
Absolute Maximum Ratings

| 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 μ sec max.) | 1 W |
| "S" Series Burn-In Temperature (case) | +125°C |

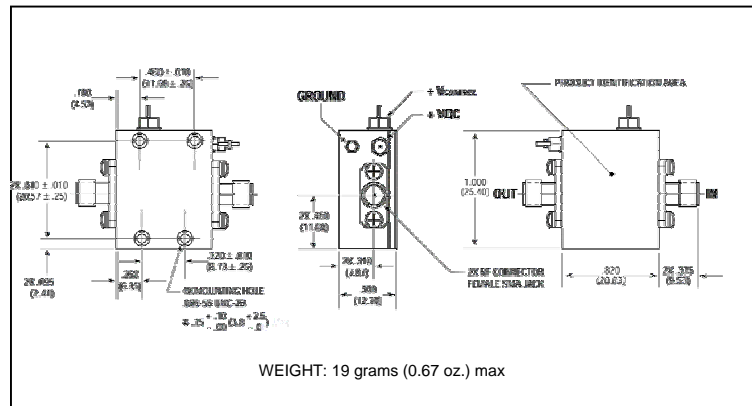
Outline Drawing: TO-8 *



Outline Drawing: Surface Mount *



Outline Drawing: SMA Connectorized *



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