

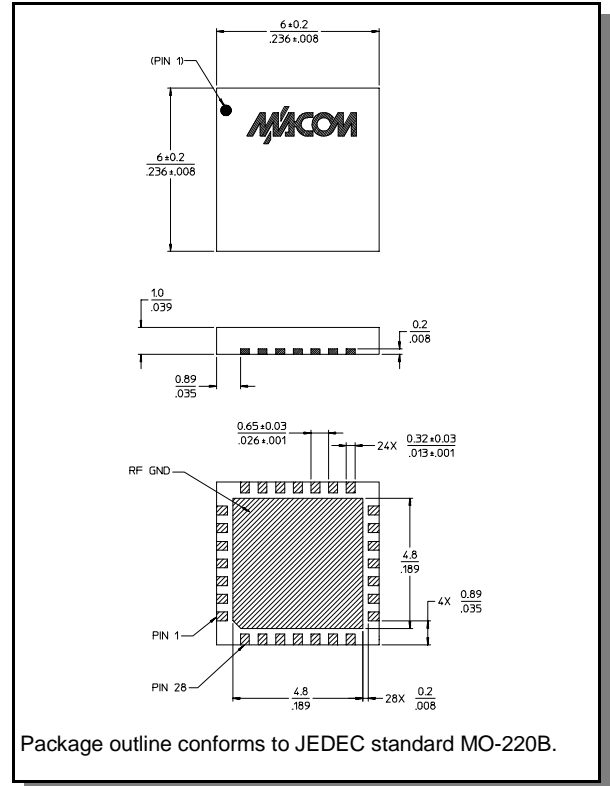
Features

- Input IP₃: +31 dBm Min (Full Attenuation Range)
- Input IP₃ is **15 -20 dB** Better than GaAs
- Linear Operation: +20 dBm Typ.
- Plastic, 28 Lead, 6 mm CSP, SMT Package
- 35 dB Dynamic Range (With 30 mA Bias Current)
- Single Control Voltage
- 50 ohm Impedance
- Linear Driver, DR65-0002, Available
- Test Boards are Available
- Tape and Reel Packaging Available

Description

M/A-COM's MAAVCC0002 is a PIN diode based voltage variable attenuator. This device is in a 6mm square, 28 lead, plastic CSP package, suitable for surface mounting on PCBs. These attenuators have linear operating power and input intercept point levels 15 - 20 dB better than GaAs FET MMIC voltage variable attenuators. They are ideally suited for use where low distortion, high linear operating power and high dynamic range are required. These devices are optimized for the PCS and UMTS frequency bands, but exhibit excellent performance and repeatability over the entire specified frequency band. The MAAVCC0002 is ideally suited for wireless communications systems.

CSP-8, 28 Lead, 6mm

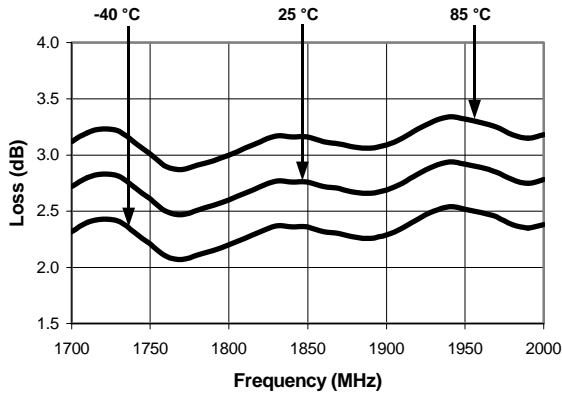


Electrical Specifications: T_A = 25°C

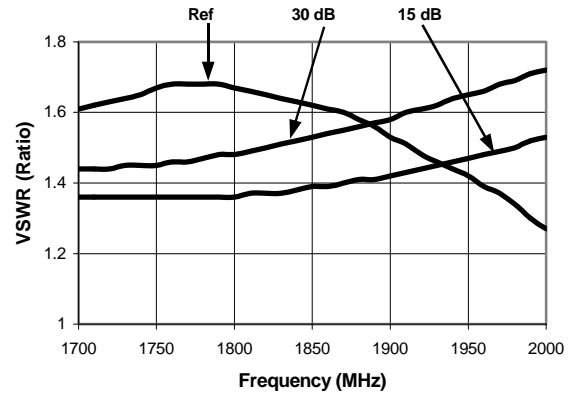
Parameter	Test Conditions	Frequency	Units	Min.	Typ.	Max.
Insertion Loss	0 volts	1700-2000 MHz	dB	—	2.9	4.0
Attenuation (Above Loss)	10 mA bias current	1700-2000 MHz	dB	30	33	—
Attenuation Flatness	0 to 30 dB attenuation	1700 - 2000 MHz	dB	—	1.0	2.0
VSWR	0 to 30 dB attenuation	1700-2000 MHz	Ratio	—	2:1	2.2:1
Switching Speed	50% Control to 90%/10% RF	1700-2000 MHz	μS	—	—	3.0
Linear Operation	—	1700-2000 MHz	dBm	—	+20	—
Input IP ₃	Two-tone inputs up to +10 dBm	1700-2000 MHz	dBm	+31	—	—
P1 dB	Full Attenuation Range	1700-2000 MHz	dBm	—	+23	—
I _{Control}	—	1700-2000 MHz	mA	—	—	30

Typical Performance Curves

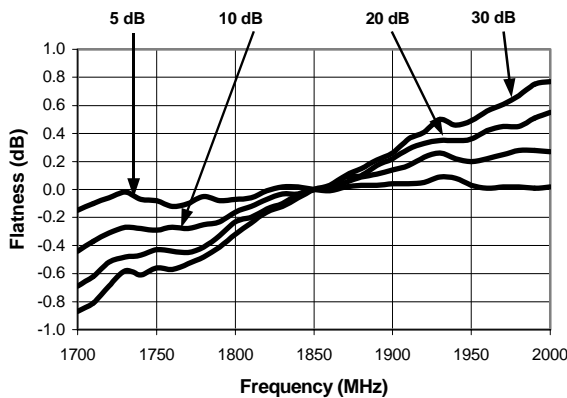
Insertion Loss



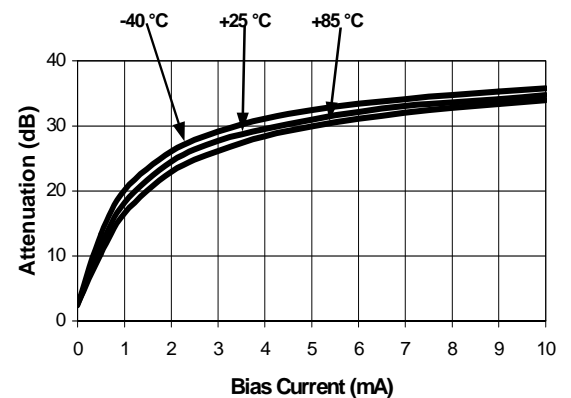
Typical VSWR @ +25°C



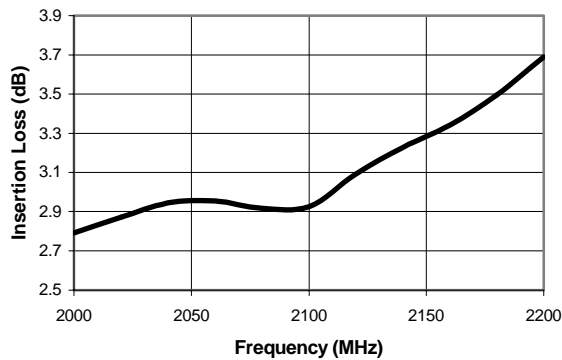
Attenuation Flatness @ +25°C



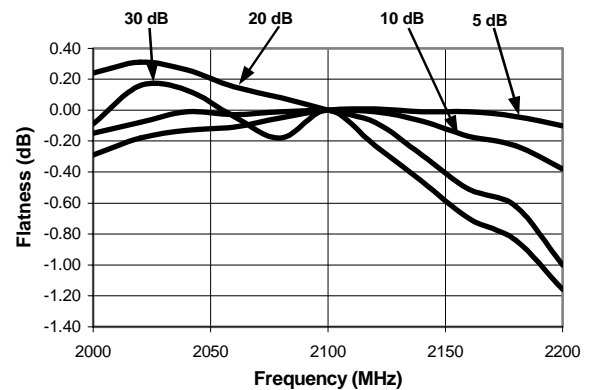
Attenuation vs. Bias Current, Frequency = 2000 MHz



Insertion Loss @ 25°C



Attenuation Flatness @ 25°C



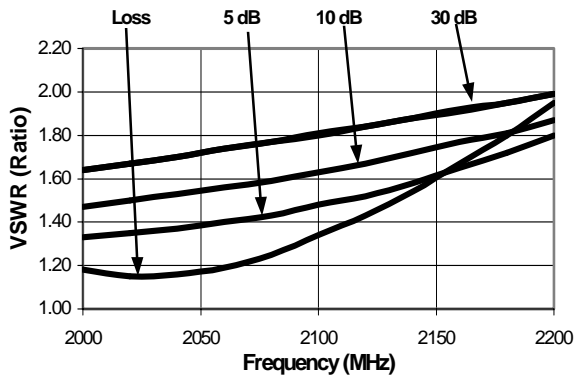
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Typical Performance Curves

Typical VSWR @ +25°C

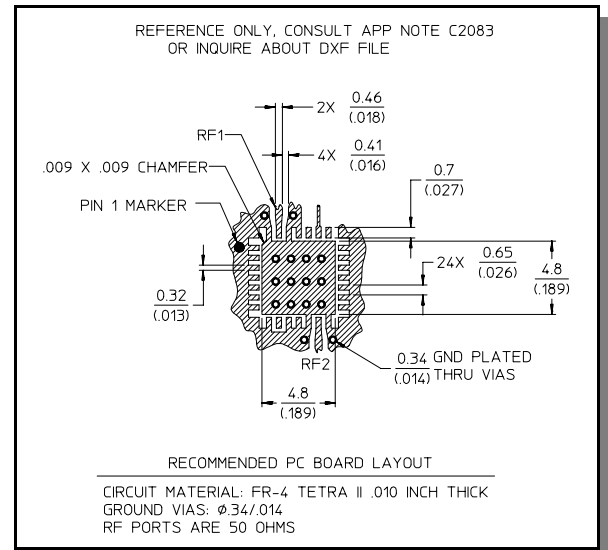


Pin Configuration

Pin #	Function	Pin #	Function
1	N/C	15	N/C
2	N/C	16	N/C
3	N/C	17	N/C
4	N/C	18	N/C
5	N/C	19	N/C
6	N/C	20	N/C
7	N/C	21	N/C
8	N/C	22	N/C
9	Bias ¹	23	Bias ¹
10	N/C	24	N/C
11	N/C	25	N/C
12	GND	26	GND
13	RF out	27	RF in
14	GND	28	GND

1. Bias current may be applied to Pin 9 or 23. However, the unused Pin must be isolated.

Recommended PCB Layout



Absolute Maximum Ratings ²

Parameter	Absolute Maximum
Max. Input Power 1700 - 2200 MHz	+27 dBm
Operating Temperature	-40°C to +85°C
Storage Temperature	-65°C to +125°C

2. Exceeding any one or combination of these limits may cause permanent damage to this device.

Ordering Information

Part Number	Package
MAAVCC0002	Bulk Packaging
MAAVCC0002TR	Tape and Reel (1K Reel)
MAAVCC0002-TB	Unit Mounted on Test Board

Note: Reference Application Note M513 for reel size information.

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