M/A-COM Voltage Variable Absorptive Attenuator 800 - 1000 MHz

V 4.00

MAAVCC0001

Features

- Input IP3: +35 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
- 38 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 MAAVCC0001 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 GSM frequency band, but exhibit excellent performance and repeatability over the entire specified frequency band. The MAAVCC0001 is ideally suited for wireless communications systems.

CSP-8, 28 Lead, 6mm

Package outline conforms to JEDEC standard MO-220B.
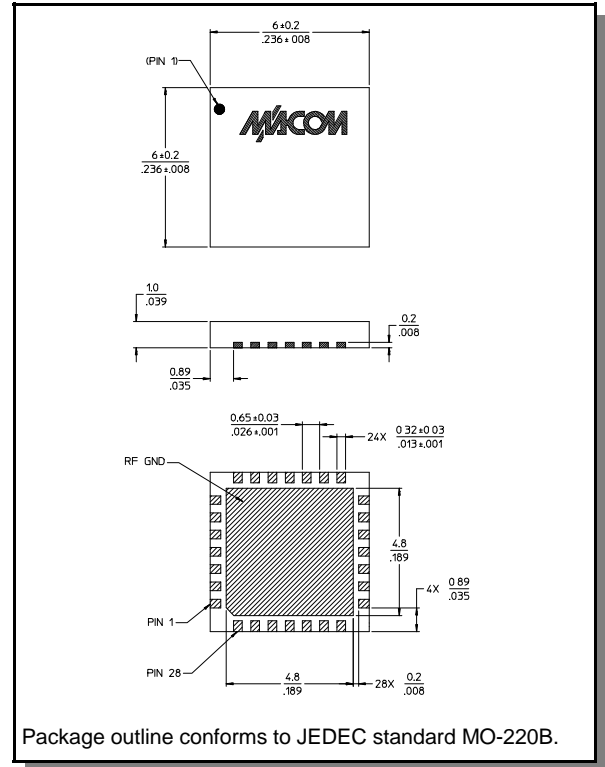
Electrical Specifications: T_A = 25°C

| Parameter	Test Conditions	Frequency	Units	Min.	Typ.	Max.
Insertion Loss	0 volts	800-1000 MHz 925 - 960 MHz	dB dB	— —	3.6 3.5	4.2 3.9
Attenuation (Above Loss)	10 mA bias current	800-1000 MHz 925 - 960 MHz	dB dB	30 30	34 34	— —
Attenuation Flatness	0 to 30 dB attenuation	800-1000 MHz 925 - 960 MHz	dB dB	— —	2.3 0.4	3.0 0.8
VSWR	0 to 30 dB attenuation	800-1000 MHz 925 - 960 MHz	Ratio Ratio	— —	1.5:1 1.3:1	1.9:1 1.8:1
Switching Speed	50% Control to 90%/10% RF	800-1000 MHz	µS	—	—	10.0
Linear Operation	—	800-1000 MHz	dBm	—	+20	—
Input IP$_3$	Two-tone inputs up to +10 dBm	800-1000 MHz	dBm	+35	+40	—-
I $_{Control}$	—	800-1000 MHz	mA	—	—	30

Typical Performance Curves

Insertion Loss
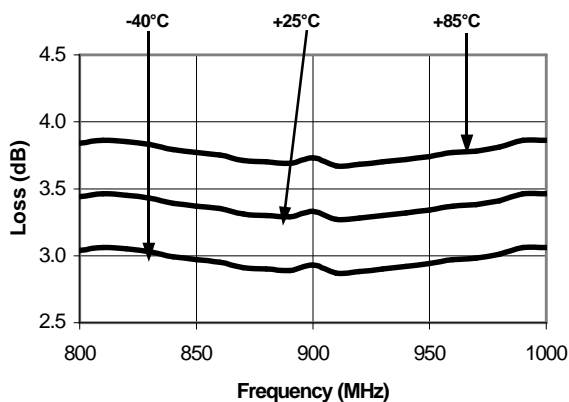
Typical VSWR @ +25°C
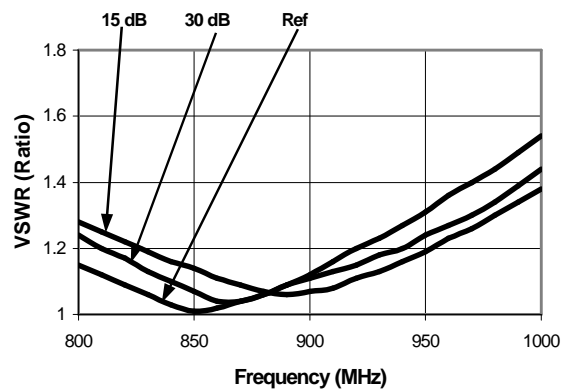
Attenuation Flatness @ +25°C
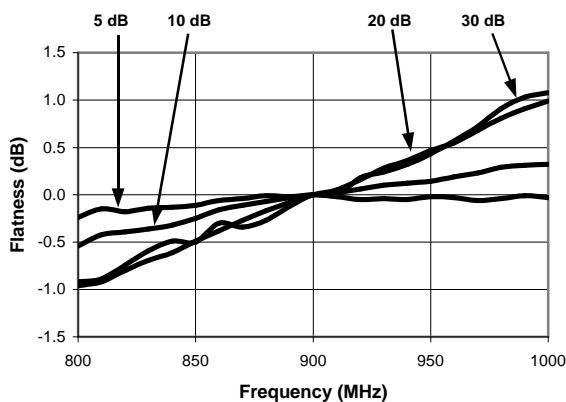
Attenuation vs. Bias Current Frequency = 1000 MHz
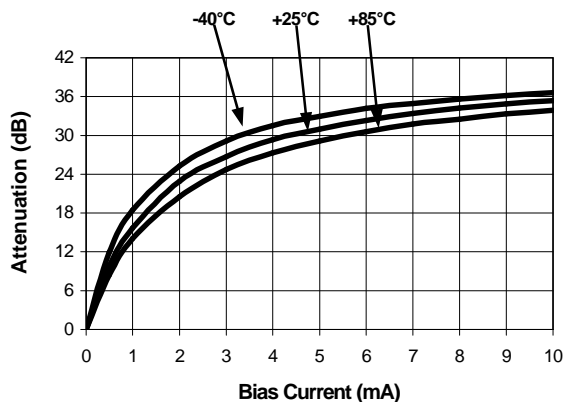
- **North America:** Tel. (800) 366-2266
- **Asia/Pacific:** Tel.+81-44-844-8296, Fax +81-44-844-8298
- **Europe:** Tel. +44 (1344) 869 595, Fax+44 (1344) 300 020

2

tyco / Electronics

M/A-COM

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.

Absolute Maximum Ratings [2]

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

2. Operation of this device above any one of these parameters may cause permanent damage.

Recommended PCB Layout
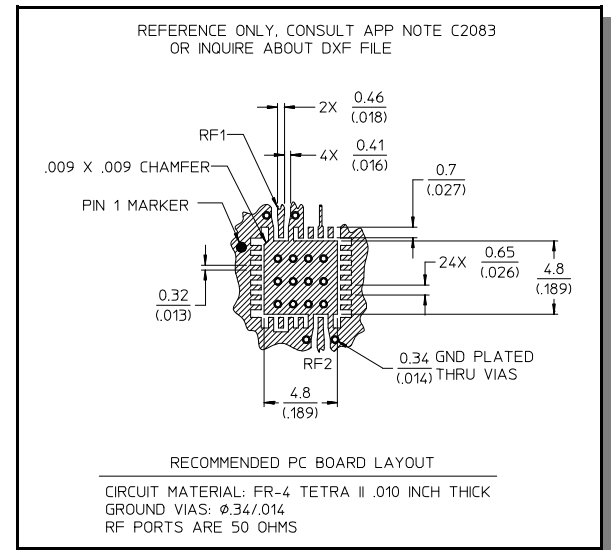
Ordering Information

Part Number	Package
MAAVCC0001	Bulk Packaging
MAAVCC0001TR	Tape and Reel (1K Reel)
MAAVCC0001-TB	Unit Mounted on Test Board

- **North America:** Tel. (800) 366-2266
- **Asia/Pacific:** Tel.+81-44-844-8296, Fax +81-44-844-8298
- **Europe:** Tel. +44 (1344) 869 595, Fax+44 (1344) 300 020

3