tyco Electronics

M/ACOM

PIN Diode Based Variable Attenuator, 50 - 1000 MHz

AT10-0019
V5

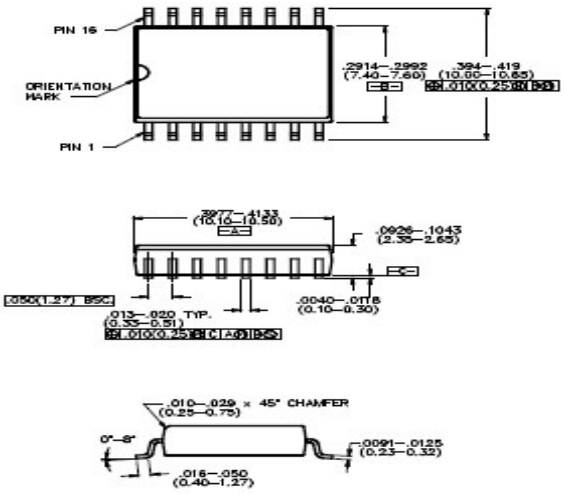
Features

- High Dynamic Range: 42dB Typical
- Flat Attenuation vs. Frequency
- High P1dB Compression
- Operates on a Single +5V Supply:
- SOW-16, Wide Body Package
- 50 Ohm Nominal Impedance

Description

M/A-COM's AT10-0019 is a Voltage Controlled PIN diode based π attenuator packaged in a low cost, 16 lead wide body plastic SMT package. The PIN diode design makes this part well suited for applications where low distortion or high linear operating power levels are required. These attenuators are ideal for gain control in multi-channel digital communications systems.

SOW-16



Package outline conforms to JEDEC standard MS-013AA.

Electrical Specifications[1]: T_A = 25°C

Parameter	Test Conditions	Frequency	Units	Min.	Typ.	Max.
Insertion Loss	Vcont.: +10 V	50– 1000 MHz	dB	—	2.4	2.8
Dynamic Range	Vcont.: 0 V	50– 1000 MHz	dB	33	42	—
Attenuation Flatness	Attenuation: 0 to 20 dB Attenuation: 20 to 30 dB	50– 1000 MHz 50– 1000 MHz	dB dB	— —	1.0 1.5	1.5 2.0
VSWR	Vcon.: 0 - 10V	50– 1000 MHz	Ratio	— —	1.7:1	2.1:1
Trise, Tfall, Ton, Toff Transients	10%/90%, 90%/10%, 50% Cntl to 90%/10% RF In-band	—	µs µs mV	— — —	10 15 150	20 25 250
1 dB Compression	Vcont.: 0 - 10V	100 MHz 500 MHz 1000 MHz	dBm dBm dBm	10 17 21	13 20 24	— — —
Input IP3	Vcont.: 0 - 10V Two-tone inputs up to +10 dBm	100 MHz 1000 MHz	dBm dBm	24 34	27 37	— —
Vcc	—	—	V	+4.75	+5.0	+5.25
I cc	Vcc = 5.25 V	DC	mA	—	2	2.5
Control Current	—	DC	mA	—	2.7	3.5

1. Unit requires external .01 µF DC Blocks on RF lines.

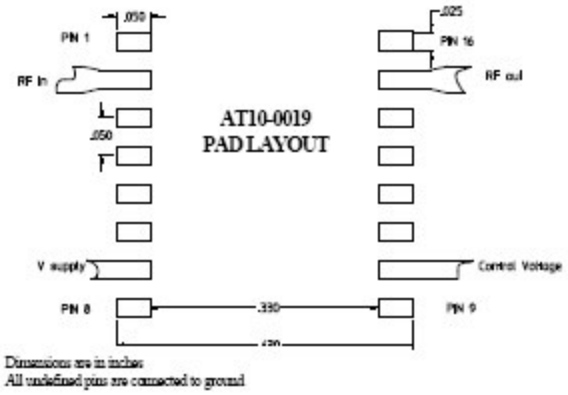
- **North America** Tel: 800.366.2266 / Fax: 978.366.2266
- **Europe** Tel: 44.1908.574.200 / Fax: 44.1908.574.300
- **Asia/Pacific** Tel: 81.44.844.8296 / Fax: 81.44.844.8298

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

Pin Configuration

Pin No.	Function	Pin No.	Function
1	GND	9	GND
2	RF in	10	V control
3	GND	11	GND
4	GND	12	GND
5	GND	13	GND
6	GND	14	GND
7	V Supply	15	RF out
8	GND	16	GND

Pad Layout



Absolute Maximum Ratings [2]

Parameter	Absolute Maximum
Max. Input Power 50– 500 MHz 500 - 1000 MHz	 +24 dBm +30 dBm
Voltages Vcc Control Voltage	 -1 V to +7.0 V -1 V to +15 B
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.

Ordering Information

Part Number	Package
AT10-0019	Tube
AT10-0019TR	Tape and Reel (1K Reel)
AT10-0019-TB	Unit Mounted on Test Board

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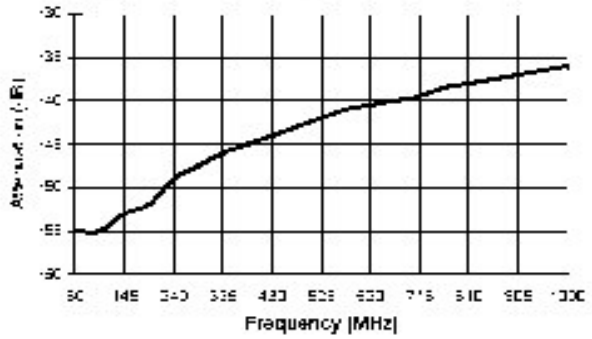
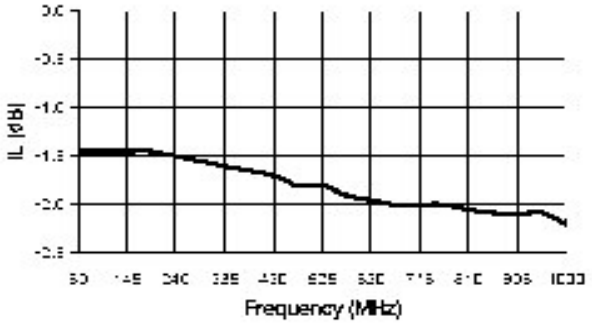
Typical Performance Curves

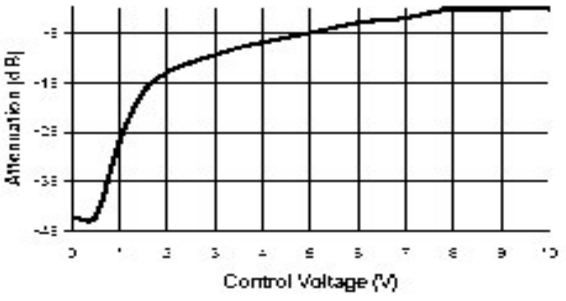
Attenuation vs. Frequency @ Control Voltage = 0V



Insertion Loss vs. Frequency @ Control Voltage = 10V



Attenuation vs. Control Voltage @ 500 MHz



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