Voltage Variable Absorptive Attenuator, 40 dB DC–2 GHz

AT-339

Features

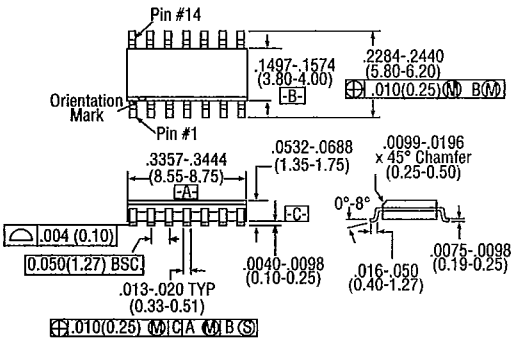
- 40 dB Voltage Variable Attenuation
- Low Intermodulation Products
- Very Low Power Consumption: 50 µW
- Dual Voltage Control 0 to -4 Volts
- Nanosecond Switching Speed
- Temperature Range: -40°C to +85°C
- Low Cost SOIC14 Plastic Package
- Tape and Reel Packaging Available[1]

Description

M/A-COM's AT-339 is a GaAs MMIC voltage variable absorptive attenuator in a low cost SOIC 14-LD surface mount plastic package. The AT-339 is ideally suited for use where attenuation fine tuning, fast switching and very low power consumption are required. Typical applications include radio, cellular, and GPS equipment and other Automatic Gain/Level Control circuits.

The AT-339 is fabricated with a monolithic GaAs MMIC using a mature 1 micron process. The process features full chip passivation for increased performance and reliability.

SO-14



14-Lead SOP outline dimensions
Narrow body .150
(All dimensions per JEDEC No. MS-012-AB, Issue C)
Dimensions in ( ) are in mm.
Unless Otherwise Noted: .xxx = ± 0.010 (.xx = ± 0.25)
.xx = ± 0.02 (.x = ± 0.5)

Electrical Specifications, T_A = 25°C

Parameter	Test Conditions[2]		Unit	Min.	Typ.	Max
Insertion Loss		DC – 0.1 GHz	dB		0.6	0.9
		DC – 0.5 GHz	dB		0.8	1.1
		DC – 1.0 GHz	dB		1.2	1.4
		DC – 2.0 GHz	dB		1.3	1.5
Flatness (peak to peak)	DC – 2.0 GHz	20 dB Attenuation	dB		+/-0.5	+/-0.8
		30 dB Attenuation	dB		+/-1.5	+/-1.8
		40 dB Attenuation	dB		+/-5.0	+/-5.5
VSWR (Matched)					1.5:1	
Trise, Tfall	10% to 90% RF, 90% to 10% RF		nS		18	
Ton, Toff	50% Control to 90% RF, 50% Control to 10% RF		nS		35	
Transients	In Band		mV		20	
One dB Compression Point	Input Power (over atten. range)	0.05 GHz	dBm		21	
	Input Power (over atten. range)	0.5 – 2.0 GHz	dBm		27	
2nd Order Intercept	Measured Relative (over atten. range) to Input Power (for two-tone input power up to +5 dBm)	0.05 GHz	dBm		39	
		0.5 – 2.0 GHz	dBm		49	
3rd Order Intercept	Measured Relative (over atten. range) to Input Power (for two-tone input power up to +5 dBm)	0.05 GHz	dBm		30	
		0.5 – 2.0 GHz	dBm		38	

1. Refer to "Tape and Reel Packaging" Section, or contact factory.
2. All measurements at 1 GHz in a 50Ω system, unless otherwise specified. The A and B control voltages vary 0 to -4 volts @ 20 µA typ.

Ordering Information

Model No.	Package
AT-339 PIN	SOIC 14 Lead
AT-339TR	Forward Tape & Reel
AT-339RTR	Reverse Tape & Reel

Specifications Subject to Change Without Notice

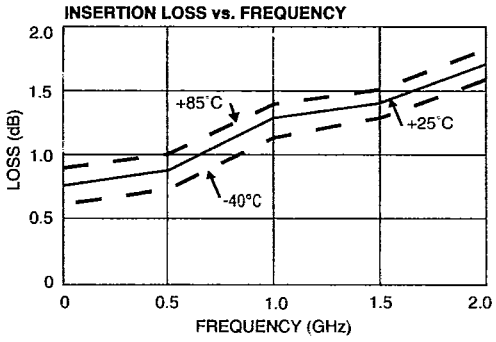
Voltage Variable Absorptive Attenuator, 40 dB — AT-339

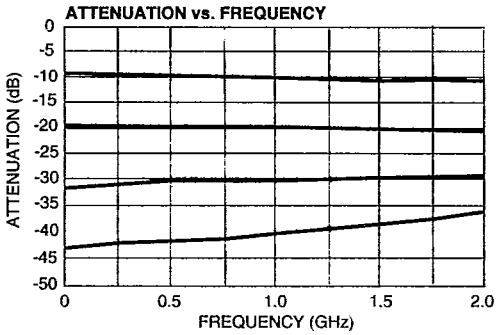
Absolute Maximum Ratings

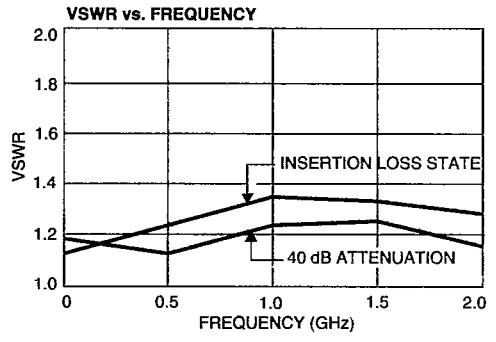
Parameter	Absolute Maximum[1]
Max. Input Power	
50 MHz	+27 dBm
500-2000 MHz	+30 dBm
Control Voltage	+5V, -8.5V
Operating Temperature	-40°C to +85°C
Storage Temperature	-65°C to +150°C

Note: 1. Operation of this device above any one of these parameters may cause permanent damage

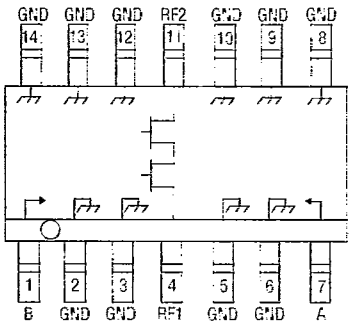
Typical Performance





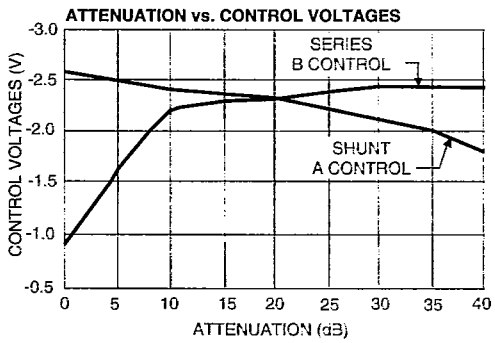


Functional Schematic



Pin Configuration

Pin No.	Description	Pin No.	Description
1	B	8	GND
2	GND	9	GND
3	GND	10	GND
4	RF1	11	RF2
5	GND	12	GND
6	GND	13	GND
7	A	14	GND



Electrical Schematic