Voltage Variable Absorptive Attenuator, 35 dB DC - 2 GHz

AT-635

V 3.00

Features

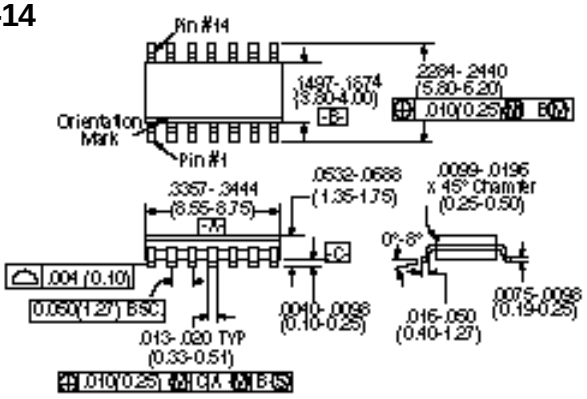
- 35 dB Voltage Variable Attenuation @ 1 GHz
- Single Voltage Control 0 to -4 Volts
- Low DC Power Consumption: 10 mW
- Nanosecond Switching Speed
- Temperature Range: -40˚C to +85˚C
- Low Cost SOIC14 Plastic Package
- Tape and Reel Packaging Available[1]

Description

M/A-COM's AT-635 is a GaAs MMIC voltage variable absorptive attenuator in a low cost SOIC 14-lead surface mount plastic package. The AT-635 is ideally suited for use where attenuation fine tuning, fast switching and very low power consumption are required. Typical applications include radio, cellular, GPS equipment and other Automatic Gain/Level Control circuits.

The AT-635 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 m m.
Unless Otherwise Noted: .xxx = ±0.010 (.xx = ±0.25)
.xx = ±0.02 (.x = ±0.5)

Ordering Information

Part Number	Package
AT-635 PIN	SOIC 14-Lead Plastic Package
AT-635TR	Forward Tape & Reel

Electrical Specifications, T_A = +25°C

Parameter	Test Conditions[2]		Unit	Min.	Typ.	Max
Insertion Loss		DC – 0.1 GHz DC – 0.5 GHz DC – 1.0 GHz DC – 2.0 GHz	dB dB dB dB		6.5 6.7 7.2 7.5	6.7 7.0 7.4 7.8
Flatness (Peak to Peak)	DC-2 GHz	10 dB Attenuation 20 dB Attenuation 30 dB Attenuation	dB dB dB		+/-1.0 +/-1.2 +/-1.2	+/-1.3 +/-1.5 +/-1.5
VSWR					2.0:1	
Trise, Tfall Ton, Toff Transients	10% to 90% RF, 90% to 10% RF 50% Control to 90% RF, 50% Control to 10% RF In Band		nS nS mV		2 4 30	
Power Handling	Linear Operation Absolute Max Input Power		dBm dBm			13 21
IP_2	Measured Relative to Input Power (for two-tone input power up to +5 dBm)	0.05 GHz 0.5 – 2.0 GHz	dBm dBm		34 47	
IP_3	Measured Relative to Input Power (for two-tone input power up to +5 dBm)	0.05 GHz 0.5 – 2.0 GHz	dBm dBm	18 18.5	31(3) 36(3)	

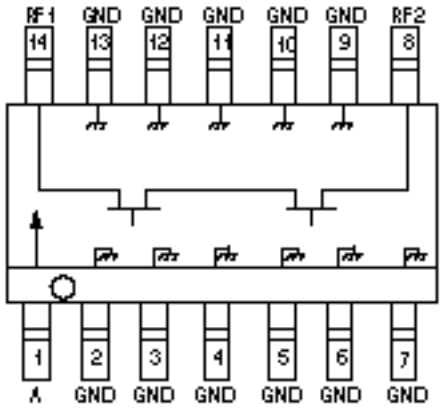
1.Refer to "Tape and Reel Packaging"Section, or contact factory.
2.All measurements at 1 GHz in a 50Ω system, unless otherwise specified.The A control voltage 0 to -4 volts @ 20 µA typ.
3. For levels above 6 dB attenuation. For levels below 6 dB, the minimum specification numbers apply.

Absolute Maximum Ratings[1]

Parameter	Absolute Maximum
Max. Input Power	+21 dBm
Control Voltage	+5 V, -8.5 V
Operating Temperature	-40°C to +85°C
Storage Temperature	-65°C to +150°C

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

Functional Schematic



Pin Configuration

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

Typical Performance

