Digital Attenuator, 32 dB, 2-Bit, TTL Driver, DC - 2.0 GHz

V 7.00

AT-273

Features

- Attenuation: 16.0 dB Steps to 32 dB
- Low DC Power Consumption
- Hermetic Surface Mount Package
- Integral TTL Driver
- 50 ohm Impedance
- Temperature Stability: ±0.18 dB from -55°C to +85°C Typ.
- Tape and Reel Packaging Available

Description

M/A-COM's AT-273 is a GaAs FET digital attenuator with a 16.0 dB minimum step size and a 32 dB total attenuation range. This attenuator and integral TTL driver is in a hermetically sealed ceramic 16-lead surface mount package. The AT-273 is ideally suited for use where accuracy, fast switching, very low power consumption and low intermodulation products are required. Typical applications include dynamic range setting in precision receiver circuits and other gain/leveling control circuits. Environmental screening is available. Contact the factory for information.

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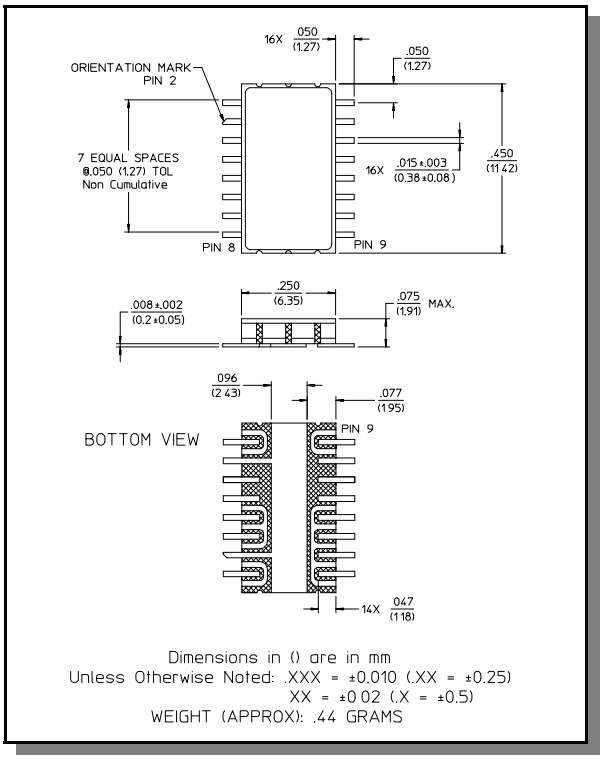

Electrical Specifications: T_A = 25°C

Parameter	Test Conditions	Frequency	Units	Min	Typ	Max
Insertion Loss	—	DC - 0.5 GHz DC - 1.0 GHz DC - 2.0 GHz	dB dB dB	— — —	— — —	1.6 1.7 1.9
Attenuation Accuracy	C1 Bit Full Attenuation (32 dB) Full Attenuation (32 dB) Full Attenuation (32 dB)	DC - 2.0 GHz DC - 0.5 GHz DC - 1.0 GHz DC - 2.0 GHz	± 3% of attenuation setting in dB ± 3% of attenuation setting in dB ± 3% of attenuation setting in dB, -1 dB ± 3% of attenuation setting in dB, -3 dB			
VSWR	Full Range	DC - 2.0 GHz	Ratio	—	—	1.6:1
Trise, Tfall	10% to 90%	—	ns	—	7	—
Ton, Toff	50% Cntl to 90% / 10% RF	—	ns	—	28	—
Transients	In-Band (peak-to-peak)	—	mV	—	30	—
1 dB Compression	Input Power Input Power	0.05 GHz 0.5 - 2.0 GHz	dBm dBm	— —	+20 +28	— —
Input IP3	Two-tone inputs up to +5 dBm	0.05 GHz 0.5 - 2.0 GHz	dBm dBm	— —	+38 +48	— —
Input IP2	Two-tone inputs up to +5 dBm	0.05 GHz 0.5 - 2.0 GHz	dBm dBm	— —	+44 +68	— —
Vcc -Vee	— —	— —	V V	4.5 -8.0	5.0 —	5.5 -5.0
Vctl Vctl	Logic (0) TTL Logic (1) TTL	— —	V V	0.0 2.0	— —	0.8 5.0

Electrical Specifications: T_A = 25°C

Parameter	Test Conditions	Frequency	Units	Min	Typ	Max
Input Leakage Current (Low) Input Leakage Current (High)	0 to 0.8V 2.0 to 5.0V	— —	µA µA	— —	— —	1.0 1.0
Icc	Vcc = 4.5 to 5.5V Vctl = 0 to 0.8V, or Vcc –2.1V to Vcc	—	mA	—	—	2.0
-Iee	Vee = -5.0 to -8.0V	—	mA	—	—	-1

Pin Configuration

Pin No.	Function	Pin No.	Function
1	C2	9	RF1
2	GND	10	GND
3	C1	11	GND
4	GND	12	GND
5	GND	13	Vee
6	GND	14	Vcc
7	GND	15	NC
8	RF2	16	NC

Absolute Maximum Ratings [1]

Parameter	Absolute Maximum
Max. Input Power 0.05 GHz 0.5 - 2.0 GHz	 +27 dBm +34 dBm
+Vcc	+5.5V
-Vee	-8.5V
Control Voltage	-0.5 to Vcc + 0.5V
Operating Temperature	-55°C to +125°C
Storage Temperature	-65°C to +150°C

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

Truth Table

C1	C2	Attenuation
0	0	Loss, Reference
0	1	16.0 dB
1	1	32.0 dB

0 = TTL Low; 1 = TTL High

Ordering Information

Part Number	Package
AT-273	Bulk Packaging
AT-273TR	Tape and Reel

- **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