

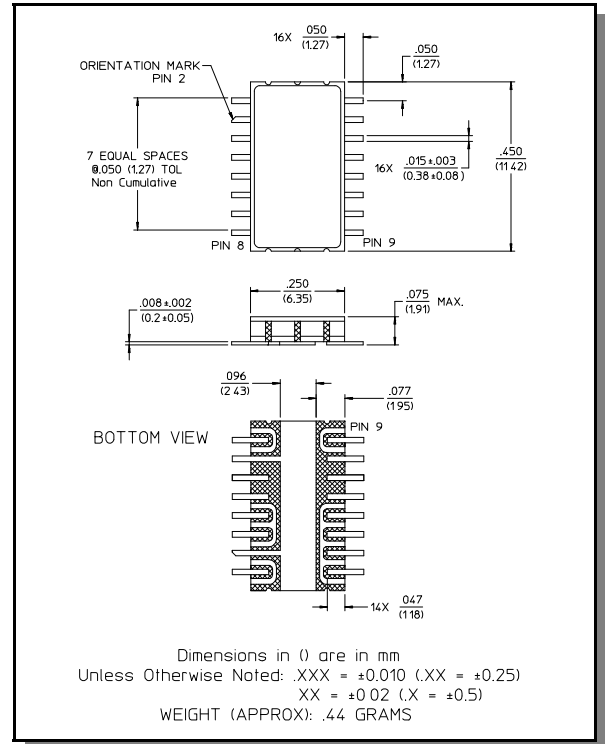
## Features

- Attenuation: 16.0 dB Steps to 32 dB
- Low DC Power Consumption
- Hermetic Surface Mount Package
- Integral TTL Driver
- 50 ohm Impedance
- Temperature Stability:  $\pm 0.18$  dB from  $-55^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$  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.

## CR-11



## Electrical Specifications: $T_A = 25^{\circ}\text{C}$

Parameter	Test Conditions	Frequency	Units	Min	Typ	Max
Insertion Loss	—	DC - 0.5 GHz	dB	—	—	1.6
		DC - 1.0 GHz	dB	—	—	1.7
		DC - 2.0 GHz	dB	—	—	1.9
Attenuation Accuracy	C1 Bit Full Attenuation (32 dB) Full Attenuation (32 dB) Full Attenuation (32 dB)	DC - 2.0 GHz	$\pm 3\%$ of attenuation setting in dB			
		DC - 0.5 GHz	$\pm 3\%$ of attenuation setting in dB			
		DC - 1.0 GHz	$\pm 3\%$ of attenuation setting in dB, -1 dB			
		DC - 2.0 GHz	$\pm 3\%$ 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	dBm	—	+20	—
		0.5 - 2.0 GHz	dBm	—	+28	—
Input IP3	Two-tone inputs up to +5 dBm	0.05 GHz	dBm	—	+38	—
		0.5 - 2.0 GHz	dBm	—	+48	—
Input IP2	Two-tone inputs up to +5 dBm	0.05 GHz	dBm	—	+44	—
		0.5 - 2.0 GHz	dBm	—	+68	—
Vcc	—	—	V	4.5	5.0	5.5
-Vee	—	—	V	-8.0	—	-5.0
Vctl	Logic (0) TTL	—	V	0.0	—	0.8
	Logic (1) TTL	—	V	2.0	—	5.0

Electrical Specifications:  $T_A = 25^\circ\text{C}$ 

Parameter	Test Conditions	Frequency	Units	Min	Typ	Max
Input Leakage Current (Low)	0 to 0.8V	—	$\mu\text{A}$	—	—	1.0
Input Leakage Current (High)	2.0 to 5.0V	—	$\mu\text{A}$	—	—	1.0
I <sub>cc</sub>	V <sub>cc</sub> = 4.5 to 5.5V V <sub>ctl</sub> = 0 to 0.8V, or V <sub>cc</sub> -2.1V to V <sub>cc</sub>	—	mA	—	—	2.0
-I <sub>ee</sub>	V <sub>ee</sub> = -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	V <sub>ee</sub>
6	GND	14	V <sub>cc</sub>
7	GND	15	NC
8	RF2	16	NC

Absolute Maximum Ratings <sup>1</sup>

Parameter	Absolute Maximum
Max. Input Power 0.05 GHz 0.5 - 2.0 GHz	+27 dBm +34 dBm
+V <sub>cc</sub>	+5.5V
-V <sub>ee</sub>	-8.5V
Control Voltage	-0.5 to V <sub>cc</sub> + 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

Specifications subject to change without notice.

- North America: Tel. (800) 366-2266
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