

5-Bit Digital Attenuator

20 - 1000 MHz

AT-103

V2.00

Features

- Attenuation 0.5 dB Steps to 15.5 dB
- CMOS Control Interface
- Internal Latch on Control Input
- Hermetic Case

Guaranteed Specifications* (From -55°C to +85°C)

Frequency Range	20-1000 MHz	
Nominal Attenuation**	0.5 dB Steps to 15.5 dB	
Attenuation Accuracy	20-500 MHz	± 0.25 dB $\pm 2\%$ Max
	20-1000 MHz	± 0.35 dB $\pm 2\%$ Max
VSWR	20-500 MHz	1.6:1 Max
	20-1000 MHz	2.0:1 Max
Reference Insertion Loss	5.0 dB Max	

Operating Characteristics

Impedance	50 Ohms Nominal	
Switching Characteristics		
Switching Time (50% CTL to 90%/10% RF)	8 μ S Typ	
Transients (In-Band)	20 mV Typ	
Input Power for 1 dB Compression	20-1000 MHz	+ 18 dBm Typ
Intermodulation Intercept Point (for two-tone input power up to + 5 dBm)		
Second Order	+ 40 dBm Typ	
Third Order	+ 30 dBm Typ	
Bias Power	+10 to + 15 VDC @ 30 mA Max (330 mW Typ)	
Control	5 line, CMOS Data Bus with Internal Latch controlled by Clock (Data Strobe) and reset inputs.	

Environmental

MIL-STD-883 screening available.

* All specifications apply when operated with bias voltage of +15 VDC and a 50 ohm impedance at both RF ports.

** Above reference insertion loss.

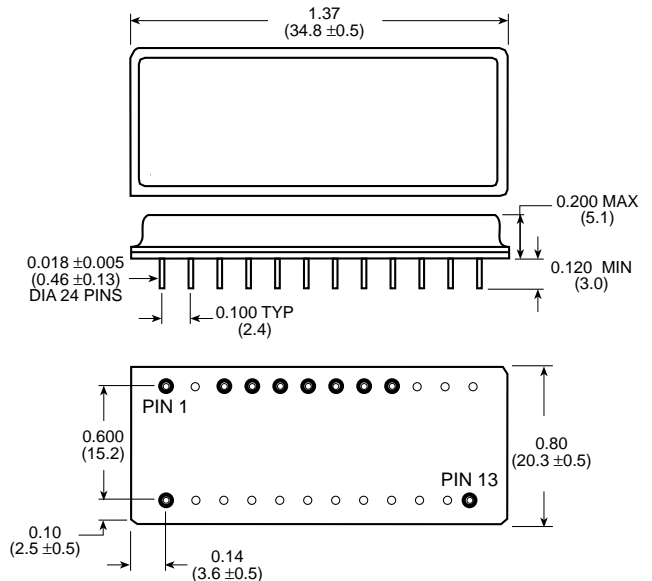
Ordering Information

Model No.	Package
AT-103 PIN	Dual Inline

Pin Configuration

1	2	3	4	5	6	7	8	9	10 - 12	13	14 - 23	24
+5V	GND	C	R	0.5	1	2	4	8	GND	RF2	GND	RF1

DI-3



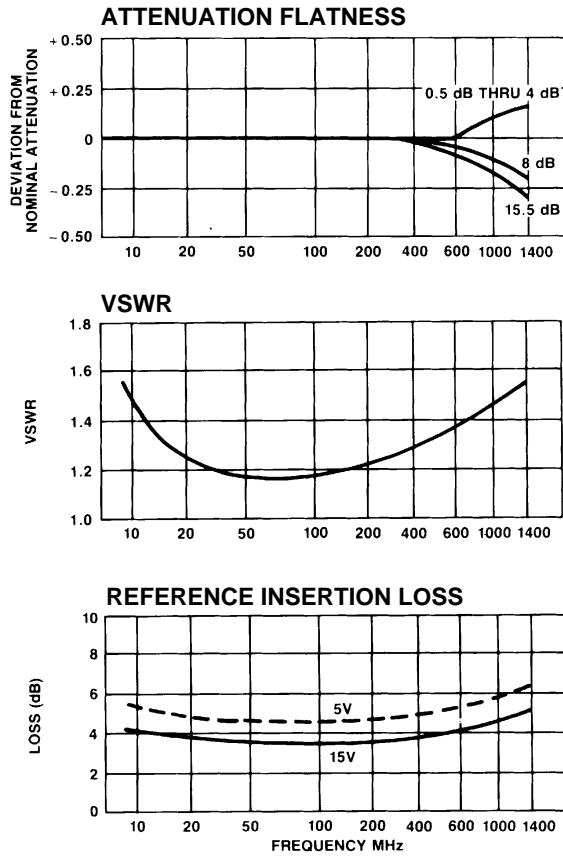
Dimensions in () are in mm.
 Unless Otherwise Noted: .xxx = ±0.010 (.xx = ±0.25)
 .xx = ±0.02 (.x = ±0.5)
 WEIGHT (APPROX.): 0.39 OUNCES 11 GRAMS

Specifications Subject to Change Without Notice.

M/A-COM, Inc.

North America: Tel. (800) 366-2266 ■ Asia/Pacific: Tel. +81 (03) 3226-1671 ■ Europe: Tel. +44 (1344) 869 595
 Fax (800) 618-8883 Fax +81 (03) 3226-1451 Fax +44 (1344) 300 020

Typical Performance



Truth Table

CONTROL INPUT							ATTENUATOR SETTING	
0.5	1	2	4	8	C*	R		
0	0	0	0	0	1	1	REFERENCE	
1	0	0	0	0	1	1	0.5 dB	
0	1	0	0	0	1	1	1 dB	
0	0	1	0	0	1	1	2 dB	
0	0	0	1	0	1	1	4 dB	
0	0	0	0	1	1	1	8 dB	
ANY COMBINATION						1	1	SUM OF BITS SELECTED
X	X	X	X	X	0	1	NO CHANGE IN ATTENUATION	
X	X	X	X	X	X	0	RESET TO REFERENCE	

* 1 = LOGIC HIGH
 * 0 = LOGIC LOW
 * X = DON'T CARE
 * CLOCK INPUT STROBES DATA ON RISING EDGE

Specifications Subject to Change Without Notice.