

**Digital Attenuator, 15.5 dB, 5-Bit, TTL Driver
DC - 3.5 GHz**

**AT90-1283
V9**

Features

- Attenuation: 0.5 dB Steps to 15.5 dB
- Single Positive Supply
- Contains Internal DC to DC Converter
- Low DC Power Consumption
- Small Footprint, JEDEC Package
- Integral TTL Driver
- 50 ohm Impedance

Description

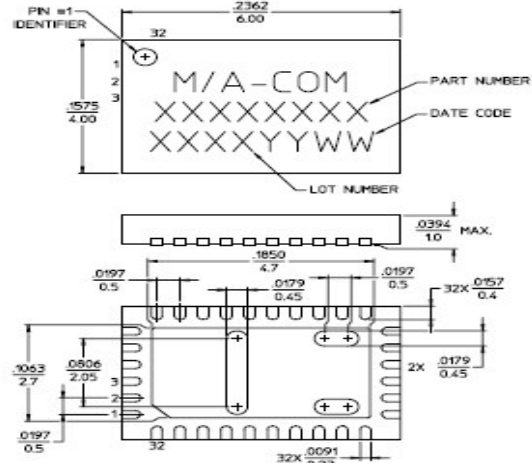
M/A-COM's AT90-1283 is a GaAs FET 5-bit digital attenuator with integral TTL driver. Step size is 0.5 dB providing a 15.5 dB total attenuation range. This device is in an FQFP-N plastic surface mount package. The AT90-1283 is ideally suited for use where accuracy, fast speed, very low power consumption and low costs are required. For dual supply designs without switching noise, use AT90-0283.

Pin Configuration

Pin No.	Function	Pin No.	Function
1	GND	17	NC
2	C8	18	NC
3	C4	19	+Vcc ²
4	C2	20	NC
5	C1	21	Cp ⁴
6	C0.5	22	NC
7	GND	23	Cp ⁴
8	NC	24	NC
9	NC	25	-Vee ³
10	NC ¹	26	GND
11	GND	27	RF2
12	RF1	28	GND
13	GND	29	NC ¹
14	NC	30	-Vee ^{3,5}
15	NC	31	NC
16	NC	32	+Vcc ^{2,6}

1. Pins 10 and 29 must be isolated.
2. Pin 19 must be connected to Pin 32.
3. Pin 25 must connect to Pin 30.
4. A .01 μ F cap must be connected between Pins 21 and 23.
5. -VEE is produced internally and requires a .1 μ F cap to GND. Generated noise is typical of switching DC-DC Converters.
6. +Vcc requires a .1 μ F cap to GND.

CSP-1



NOTES: 1. REFERENCE JEDEC MO-220, FOR ADDITIONAL DIMENSIONAL AND TOLERANCE INFORMATION.
2. REFERENCE S2093 APPLICATION NOTE FOR PCB FOOTPRINT INFORMATION.
3. ALL DIMENSIONS SHOWN AS INCHES/MM.

Ordering Information

Part Number	Package
AT90-1283	Bulk Packaging
AT90-1283TR	Tape and Reel (1K Reel)
AT90-1283-TB	Units Mounted on Test Board

Note: Reference Application Note M513 for reel size information.

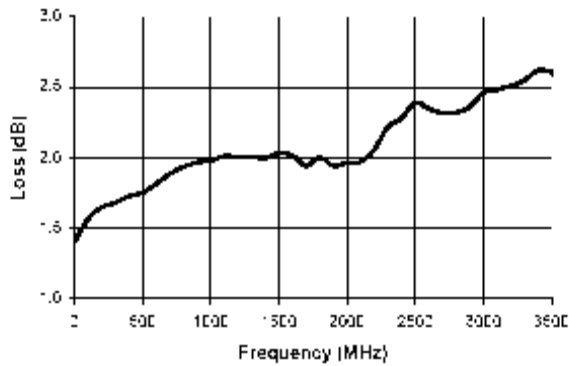
Truth Table

C8	C4	C2	C1	C0.5	Attenuation
0	0	0	0	0	Loss, Reference
0	0	0	0	1	0.5 dB
0	0	0	1	0	1.0 dB
0	0	1	0	0	2.0 dB
0	1	0	0	0	4.0 dB
1	0	0	0	0	8.0 dB
1	1	1	1	1	15.5 dB

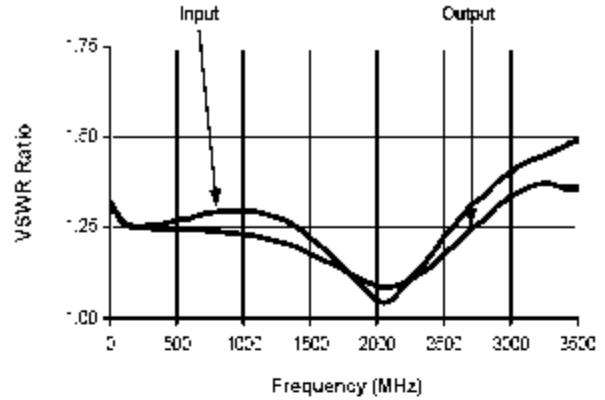
0 = TTL Low; 1 = TTL High

Typical Performance Curves @ 25°C

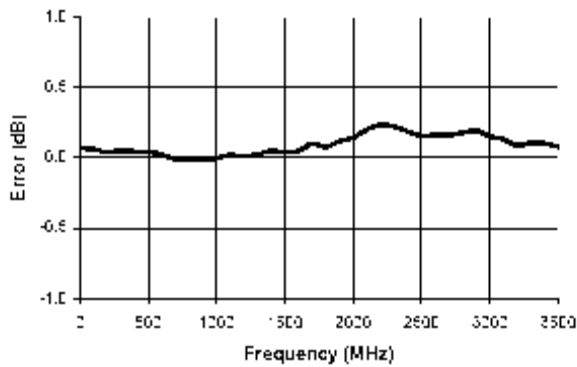
Insertion Loss



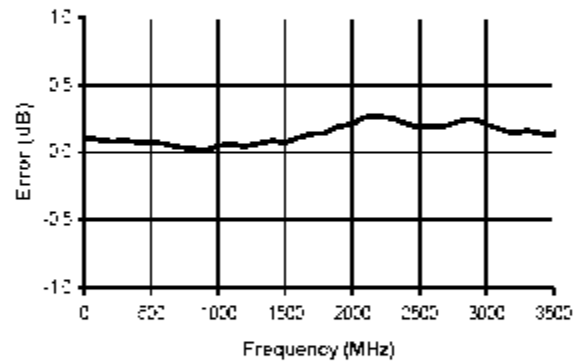
VSWR @ Insertion Loss



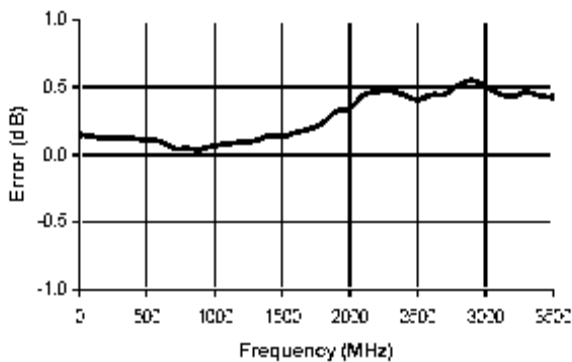
Attenuation Error. 0.5 dB Bit



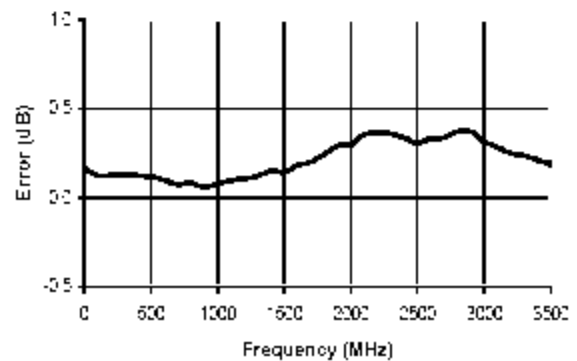
Attenuation Error. 1 dB Bit



Attenuation Error. 2 dB Bit



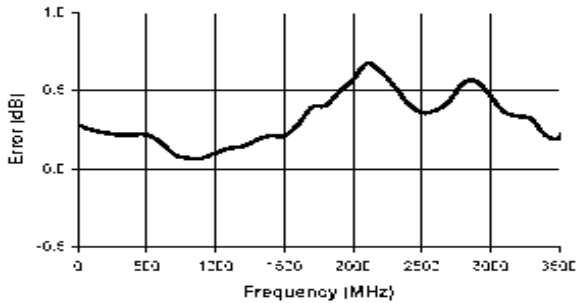
Attenuation Error. 4 dB Bit



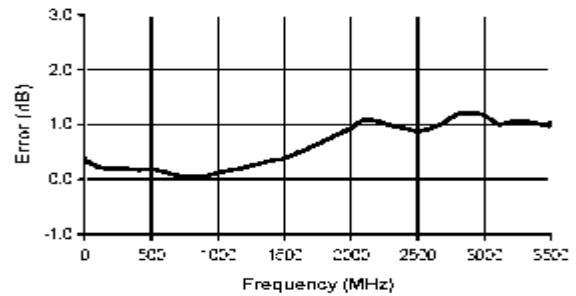
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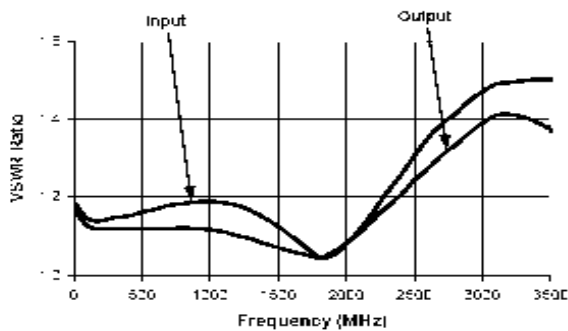
Attenuation Error, 8 dB Bit



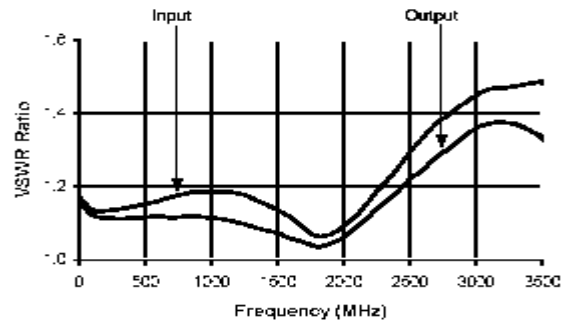
Attenuation Error, Max. Attenuation



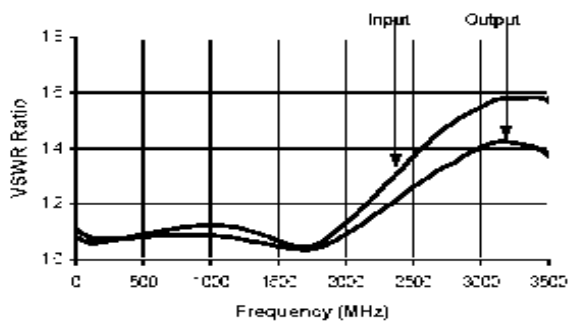
VSWR, 0.5 dB Bit



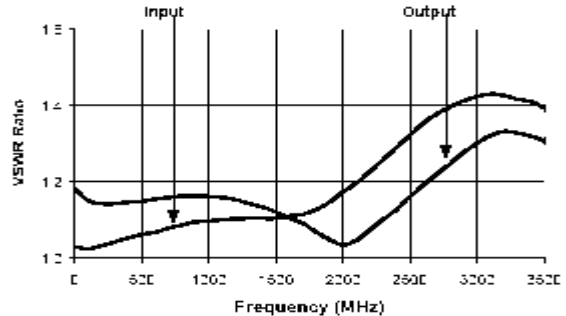
VSWR, 1 dB Bit



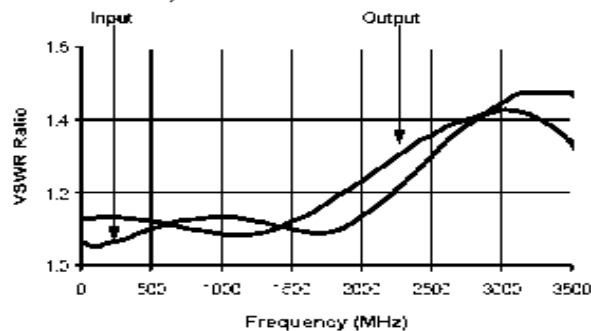
VSWR, 2 dB Bit



VSWR, 4 dB Bit



VSWR, 8 dB Bit



VSWR, Maximum Attenuation

