

# AM2005 - Attenuator

## DC to 20 GHz, 31 dB, 5-Bit

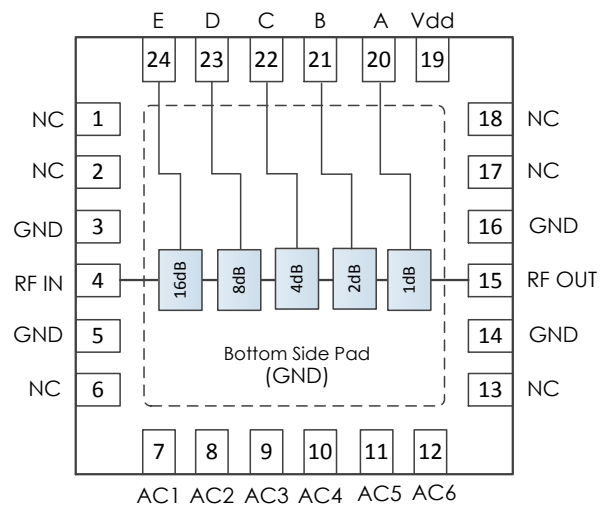


AM2005 is a 31 dB 5-Bit digital attenuator covering the DC to 20-GHz frequency range in 1-dB steps. The device provides low insertion loss, flat frequency response, and low attenuation error over the operating temperature range of -40C to +85C.

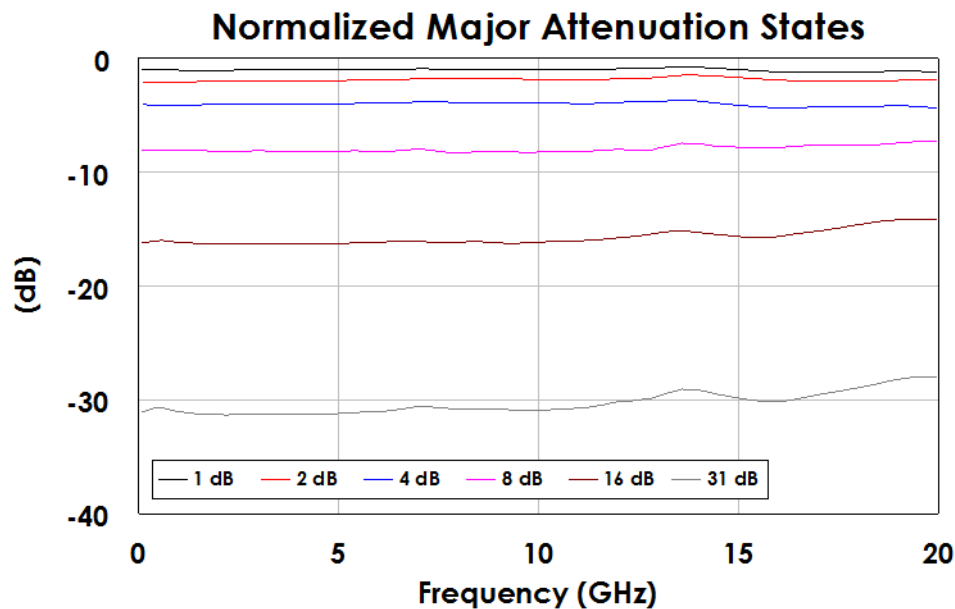
### Features

- 1 dB steps up to 31 dB
- 2.5 dB Insertion loss
- +5V Supply
- +3V Control
- +40 dBm IP3
- 4mm QFN Package
- -40C to +85C Operation

### Functional Diagram



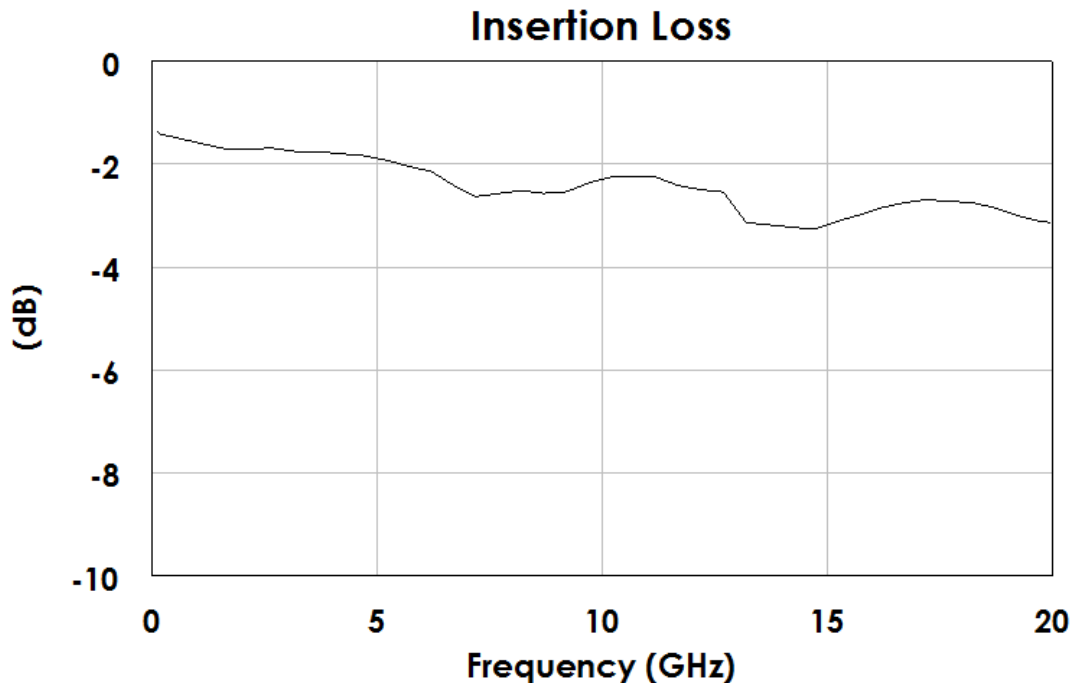
### Typical Performance



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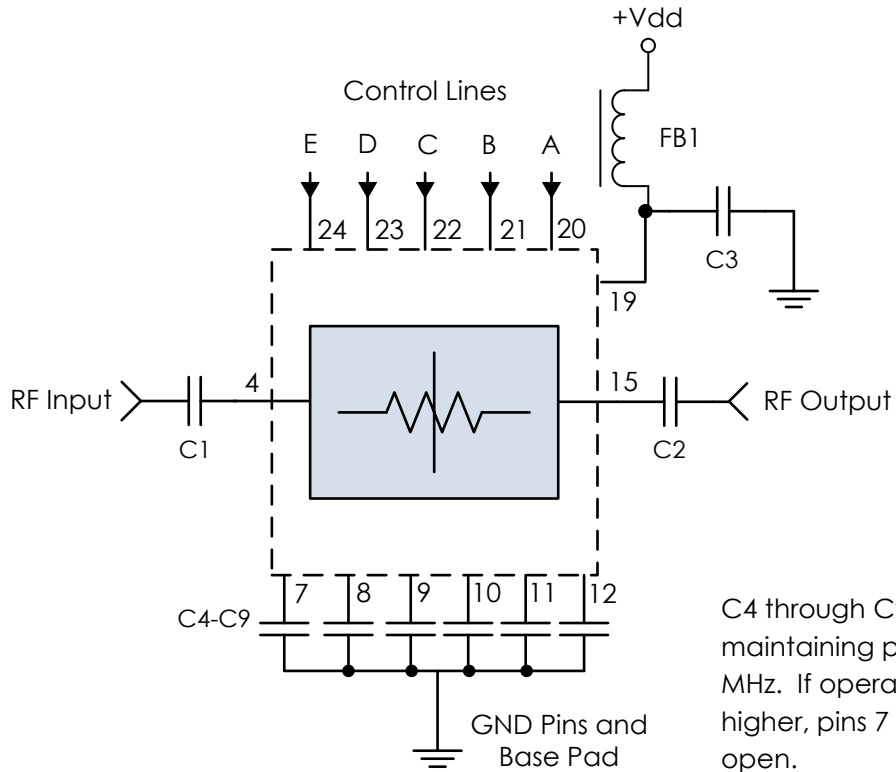
## Additional Specifications

Supply Current at +5.0VDC	3.3 mA typ, 4.5 mA max
Supply Voltage Range (Vdd)	+4.5V to +5.2V
Control Line Voltage Range	0.0V to +0.5V (Low) +2.0V to 5.0V (High)
Control Current	0.2 mA typ
Maximum RF Input	+13dBm
Operating Temperature Range	-40C to +85C
Storage Temperature Range	-50C to +125C

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## Typical Application Circuit



C4 through C9 are only required for maintaining performance below 400 MHz. If operating at 400 MHz and higher, pins 7 through 12 may be left open.

### Recommended Component List (or equivalent):

Part Type	Value	Part Number	Manufacturer
C1, C2	0.1uF	0402BB104KW160	Passives Plus
C3 – C9	0.1uF	C1005X7R1H104K050BB	TDK
FB1	-	MMZ1005A222E	TDK

### Notes:

1. RF blocking capacitors should be high performance, low-loss, broadband capacitors for optimum performance.
2. RC filtering on the control lines is recommended to prevent digital noise from coupling to the RF path.
3. NC pins may be left open or connected to ground.
4. C4 through C9 are only required for operation below 400 MHz.

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## Control Table

Control Line					Attenuation (dB)
E	D	C	B	A	
L	L	L	L	L	Insertion Loss
L	L	L	L	H	1
L	L	L	H	L	2
L	L	H	L	L	4
L	H	L	L	L	8
H	L	L	L	L	16
H	H	H	H	H	31

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### Package Details

