

### Features

- Ultra broadband single channel attenuator
- Frequency: DC-25GHz
- Attenuation 0, 1, 2...10,15, 20, 30dB value
- Power Handling: 27dBm
- Return Loss: 15dB
- Input/Output: 50Ω
- Package Size : Ceramic 3 x 3 x 0.7mm

### Typical Applications

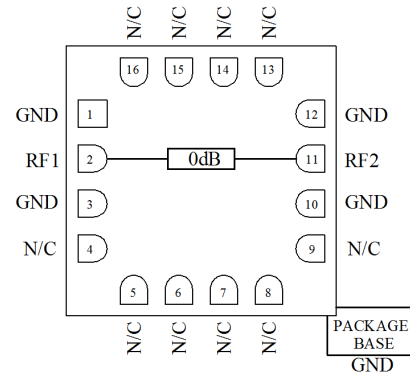
- Test Instrumentation
- Microwave Radio & VSAT
- Military & Space
- Telecom Infrastructure
- Fiber Optics

### Electrical Specifications

TA = +25°C

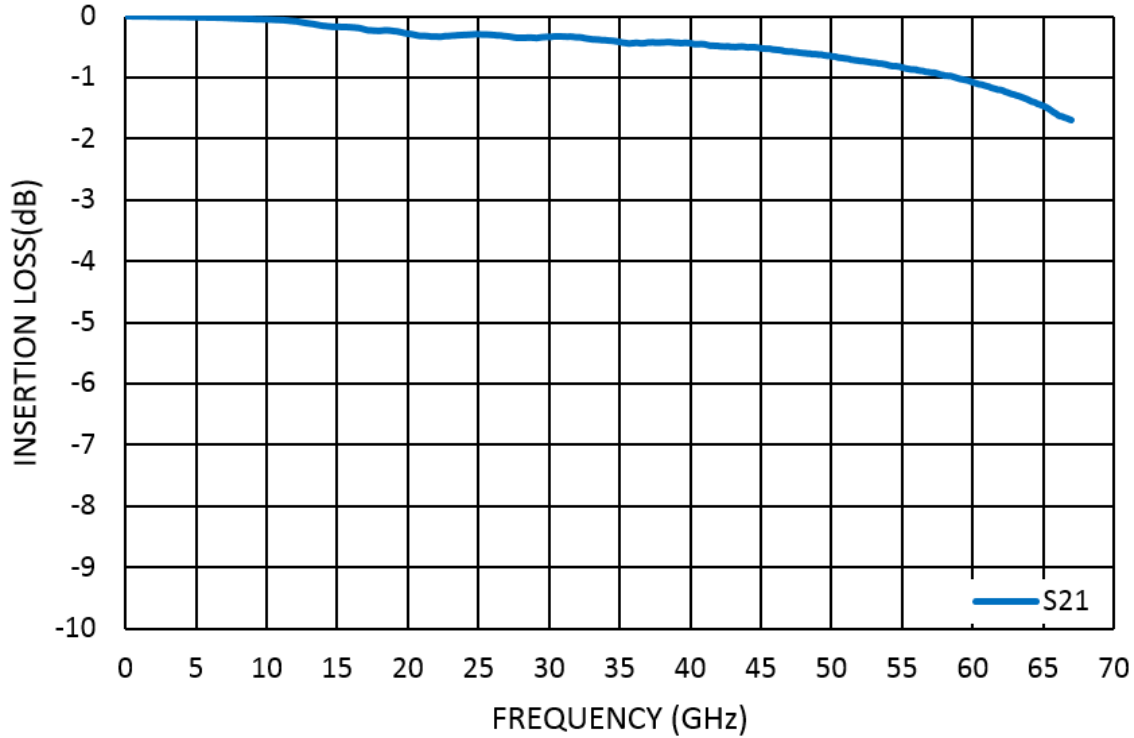
| Part Number | Type             | Frequency (GHz) | Attenuation (dB) | Power Handling (dBm) | Attenuation Flatness (dB) | Return Loss (dB) |
|-------------|------------------|-----------------|------------------|----------------------|---------------------------|------------------|
| MFA1001Q3A  | Fixed Attenuator | DC-25           | 0                | 27                   | ±0.3                      | 15               |
| MFA1002Q3A  | Fixed Attenuator | DC-25           | 1                | 27                   | ±0.5                      | 10               |
| MFA1003Q3A  | Fixed Attenuator | DC-25           | 2                | 27                   | ±0.3                      | 10               |
| MFA1004Q3A  | Fixed Attenuator | DC-25           | 3                | 27                   | ±0.3                      | 10               |
| MFA1005Q3A  | Fixed Attenuator | DC-25           | 4                | 27                   | ±0.3                      | 10               |
| MFA1006Q3A  | Fixed Attenuator | DC-25           | 5                | 27                   | ±0.3                      | 15               |
| MFA1007Q3A  | Fixed Attenuator | DC-25           | 6                | 27                   | ±0.3                      | 15               |
| MFA1008Q3A  | Fixed Attenuator | DC-25           | 7                | 27                   | ±0.5                      | 15               |
| MFA1009Q3A  | Fixed Attenuator | DC-25           | 8                | 27                   | ±0.5                      | 15               |
| MFA1010Q3A  | Fixed Attenuator | DC-25           | 9                | 27                   | ±0.5                      | 15               |
| MFA1011Q3A  | Fixed Attenuator | DC-25           | 10               | 27                   | ±1.0                      | 18               |
| MFA1012Q3A  | Fixed Attenuator | DC-25           | 15               | 27                   | ±1.0                      | 18               |
| MFA1013Q3A  | Fixed Attenuator | DC-25           | 20               | 27                   | ±0.4                      | 12               |
| MFA1014Q3A  | Fixed Attenuator | DC-25           | 30               | 27                   | ±1.5                      | 10               |

### Functional Block Diagram

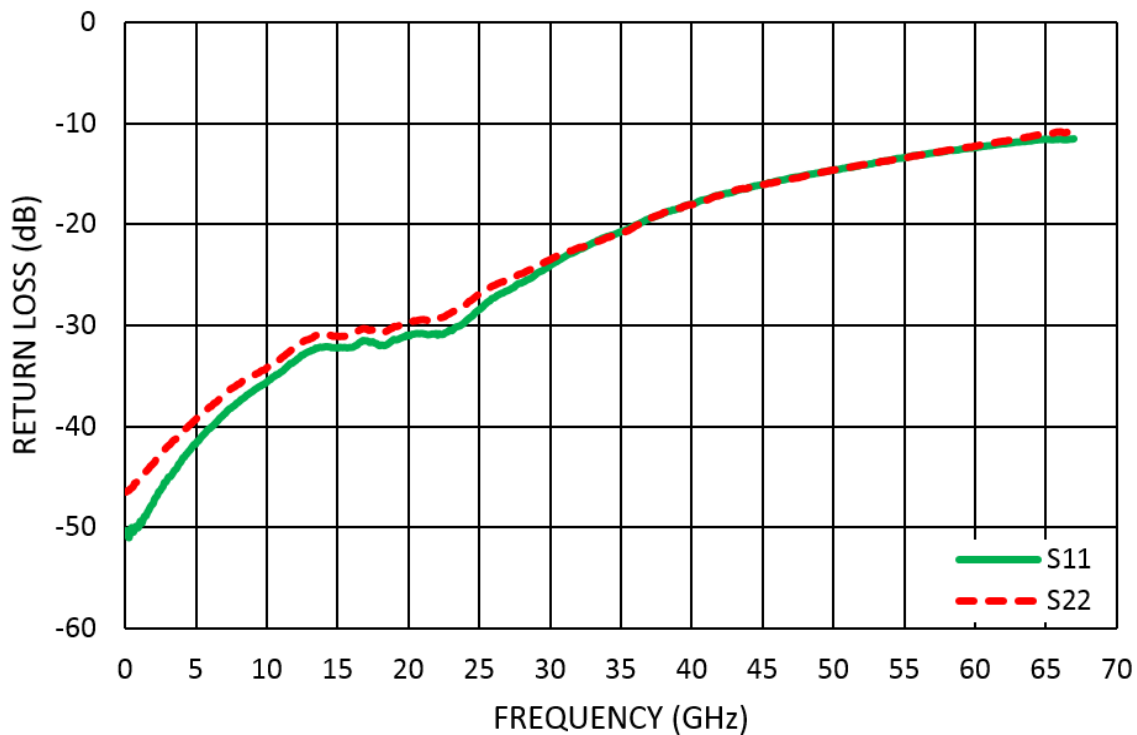




### Attenuation vs. Frequency

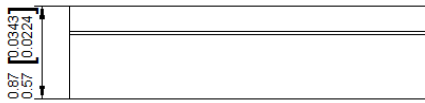
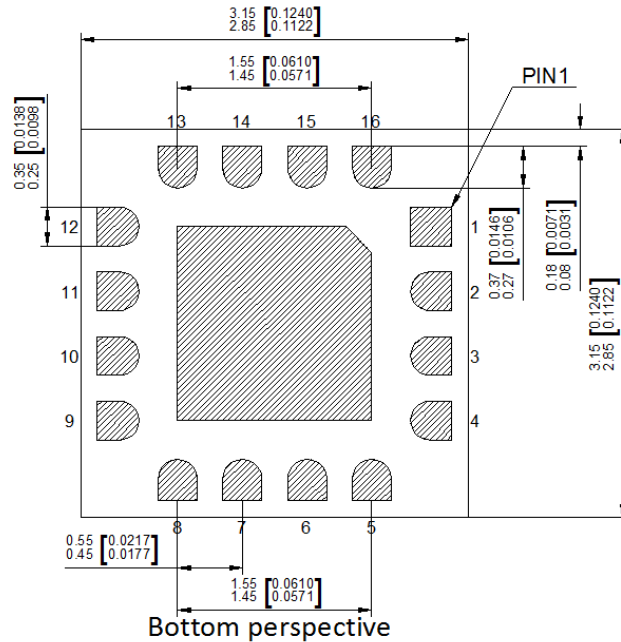
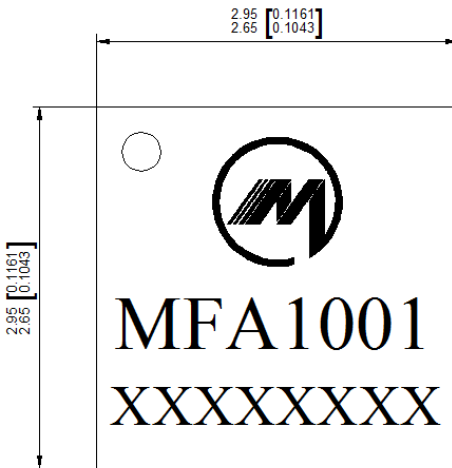


### Return Loss vs. Frequency





**Outline Drawing:**  
All Dimensions in mm[inches]



**Notes:**

1. Package body material : Alumina.
2. Lead and ground paddle plating: Gold flash over nickel.
3. Dimensions are in millimeters(inches).
4. Lead spacing tolerance is non-cumulative.

**Maximum Ratings:**

1. Maximum input power: +27dBm
2. Operating temperature: -55°C to +85°C
3. Storage temperature: -65°C to +150°C

**Pin Descriptions**

| No                      | Function | Description                                                                                |
|-------------------------|----------|--------------------------------------------------------------------------------------------|
| 4,5,6,7,8,9,13,14,15,16 | NC       | No connection. These pins may be connected to RF ground. Performance will not be affected. |
| 2                       | RF1      | RF Signal Input. This pad is ac-coupled and matched to 50 Ω.                               |
| 11                      | RF2      | RF Signal Output. This pad is ac-coupled and matched to 50 Ω.                              |
| 1,3,10,12               | GND      | These pins & exposed ground paddle must be connected to RF/DC ground                       |
| Die Bottom              | GND      | Package bottom must be connected to RF/DC ground                                           |



# MILLER MMIC

V1.0.0

## MFA1001Q3A

Fixed Attenuator Single Channel  
Ceramic QFN 3x3mm DC-25GHz

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MFA1001Q3A

Ceramic QFN 3x3mm Fixed Attenuator DC-25GHz