

Fixed Attenuators (SMA Type)

AT-100, AT-200, and AT-300 Series



■ Features

1. Abundant Variations of Attenuators

Attenuation amounts are available in abundant variations from 0 to 4 dB in 0.5 dB steps, from 4 to 10 dB in 1 dB steps, and in 12, 13, 14, 15, 20, 26 and 30 dB so that levels can be finely adjusted.

2. SMA Type

The coupling portions are available in all types of plug and jack combinations and stainless steel is used for the external cladding to form a small and durable structure.

3. High Degree of Matching and High Reliability

The design of the attenuation element uses a distributed constant circuit and metal film resistor. A high degree of matching is achieved as indicated in the V.S.W.R. of the appended tables. Furthermore, these attenuators show stable characteristics for environments of varying temperature, humidity, and gases.

■ Product Specifications

| | | | | |
|---------|---------------------------------------------------------------------------------|----------------------------------|------------------------------------------------------------|----------------------------|
| Ratings | Rated frequency range (Note) Characteristic impedance Maximum Input Power | DC to 18.0 GHz 50 ohms 1 W | Operating temperature range Operating relative humidity | -10°C to +65°C 95% Max. |
|---------|---------------------------------------------------------------------------------|----------------------------------|------------------------------------------------------------|----------------------------|

Note: The frequency range will differ depending on the model.

| Item | Standard | Conditions |
|----------------------|----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| 1. Vibration | No electrical discontinuity of 1 μs or more No damage, cracks, or parts dislocation | Frequency of 10 to 2000 Hz, overall amplitude of 1.52 mm, acceleration of 98 m/s ² for 2 hours in each of 3 directions |
| 2. Shock | | Acceleration of 490 m/s ² , sine half-wave waveform, 3 cycles in each of the 3 axis |
| 3. Temperature cycle | No damage, cracks, or parts dislocation | Temperature: -55°C → +15°C to +35°C → +85°C → +15°C to +35°C Time: 30 → 15 max. → 30 → 15 max. (Minutes) 5 cycles |

● The test method conforms to MIL-STD-202.

■ Materials

| Part | Material | Finish |
|---------------------|------------------|--------------|
| Connector Body | Stainless steel | Passivated |
| Insulator | PTFE | — |
| Male contacts | Beryllium copper | Gold plating |
| Female contacts | Beryllium copper | Gold plating |
| Attenuation element | Metal film | — |

■ Ordering Information

AT - **1** **00-(0)** **(40)**

① ② ③ ④

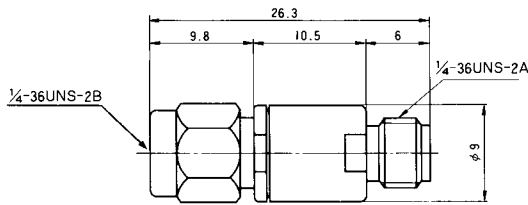
| | |
|------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|
| ① AT: Indicates a fixed attenuator | ③ Attenuation (Example) 01 : 1dB 06 : 6dB 00-(0) : 0dB (Through) 00-(0.5) : 0.5dB 00-(3.5) : 3.5dB |
| ② Indicates the Series Name (Coupling Portion) 1: SMA plug - jack 2: SMA plug - plug 3: SMA jack - jack | ④ (40): RoHS compliant |

Specifications

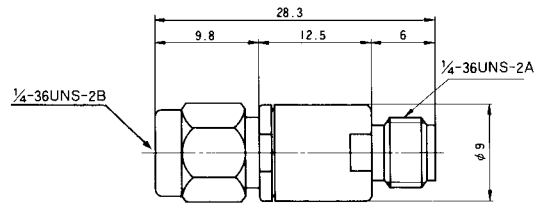
| Part Number | Attenuation (dB) | | V.S.W.R.(Max) | | | Power (W) | Connectors | Weight (g) | RoHS |
|------------------|--------------------------------|-------------------------------------|---------------|-----------|-----------|-----------|------------|------------|------|
| | DC~12.4GHz | 12.4~18GHz | DC~4GHz | 4~12.4GHz | 2.4~18GHz | | | | |
| AT-100-(0)(40) | 0 ^{+0.5} ₀ | 0 ^{+1.0} ₀ | 1.15 | 1.20 | 1.30 | 1 | HRM-J·P | 8 | YES |
| AT-100-(0.5)(40) | 0.5±0.5 | 0.5 ^{+1.0} _{-0.5} | 1.15 | 1.20 | 1.30 | 1 | HRM-J·P | 8 | |
| AT-101(40) | 1±0.5 | 1±1.0 | 1.15 | 1.20 | 1.30 | 1 | HRM-J·P | 8 | |
| AT-100-(1.5)(40) | 1.5±0.5 | 1.5±1.0 | 1.15 | 1.20 | 1.30 | 1 | HRM-J·P | 8 | |
| AT-102(40) | 2±0.5 | 2±1.0 | 1.15 | 1.20 | 1.30 | 1 | HRM-J·P | 8 | |
| AT-100-(2.5)(40) | 2.5±0.5 | 2.5±1.0 | 1.15 | 1.20 | 1.30 | 1 | HRM-J·P | 8 | |
| AT-103(40) | 3±0.5 | 3±1.0 | 1.15 | 1.20 | 1.30 | 1 | HRM-J·P | 8 | |
| AT-100-(3.5)(40) | 3.5±0.5 | 3.5±1.0 | 1.15 | 1.20 | 1.30 | 1 | HRM-J·P | 8 | |
| AT-104(40) | 4±0.5 | 4±1.0 | 1.15 | 1.20 | 1.30 | 1 | HRM-J·P | 8 | |
| AT-105(40) | 5±0.7 | 5±1.2 | 1.15 | 1.20 | 1.30 | 1 | HRM-J·P | 8 | |
| AT-106(40) | 6±0.7 | 6±1.2 | 1.15 | 1.20 | 1.30 | 1 | HRM-J·P | 8 | |
| AT-107(40) | 7±0.7 | 7±1.2 | 1.15 | 1.20 | 1.30 | 1 | HRM-J·P | 8 | |
| AT-108(40) | 8±0.7 | 8±1.2 | 1.15 | 1.20 | 1.30 | 1 | HRM-J·P | 8 | |
| AT-109(40) | 9±1.0 | 9±1.25 | 1.15 | 1.20 | 1.30 | 1 | HRM-J·P | 8 | |
| AT-110(40) | 10±1.0 | 10±1.25 | 1.15 | 1.20 | 1.30 | 1 | HRM-J·P | 8 | |
| AT-112(40) | 12±1.0 | 12±1.25 | 1.15 | 1.20 | 1.30 | 1 | HRM-J·P | 8 | |
| AT-113(40) | 13±1.0 | 13±1.25 | 1.15 | 1.20 | 1.30 | 1 | HRM-J·P | 8 | |
| AT-114(40) | 14±1.2 | 14±1.3 | 1.15 | 1.20 | 1.30 | 1 | HRM-J·P | 8 | |
| AT-115(40) | 15±1.2 | 15±1.3 | 1.15 | 1.20 | 1.30 | 1 | HRM-J·P | 8 | |
| AT-120(40) | 20±1.2 | 20±1.3 | 1.15 | 1.20 | 1.30 | 1 | HRM-J·P | 8 | |
| AT-203(40) | 3±0.5 | 3±1.0 | 1.15 | 1.20 | 1.30 | 1 | HRM-P·P | 9 | |
| AT-206(40) | 6±0.7 | 6±1.2 | 1.15 | 1.20 | 1.30 | 1 | HRM-P·P | 9 | |
| AT-210(40) | 10±1.0 | 10±1.25 | 1.15 | 1.20 | 1.30 | 1 | HRM-P·P | 9 | |
| AT-220(40) | 20±1.2 | 20±1.3 | 1.15 | 1.20 | 1.30 | 1 | HRM-P·P | 9 | |
| AT-303(40) | 3±0.5 | 3±1.0 | 1.15 | 1.20 | 1.30 | 1 | HRM-J·J | 7 | |
| AT-306(40) | 6±0.7 | 6±1.2 | 1.15 | 1.20 | 1.30 | 1 | HRM-J·J | 7 | |
| AT-310(40) | 10±1.0 | 10±1.25 | 1.15 | 1.20 | 1.30 | 1 | HRM-J·J | 7 | |
| AT-320(40) | 20±1.2 | 20±1.3 | 1.15 | 1.20 | 1.30 | 1 | HRM-J·J | 7 | |

| Part Number | Attenuation (dB) | V.S.W.R.(Max) | | Power (W) | Connectors | Weight (g) | RoHS |
|-------------|------------------|---------------|--------|-----------|------------|------------|------|
| | DC~8GHz | DC~4GHz | 4~8GHz | | | | |
| AT-126(40) | 26±1.0 | 1.15 | 1.20 | 1 | HRM-J·P | 8 | YES |
| AT-130(40) | 30±1.2 | 1.15 | 1.20 | 1 | HRM-J·P | 8 | |

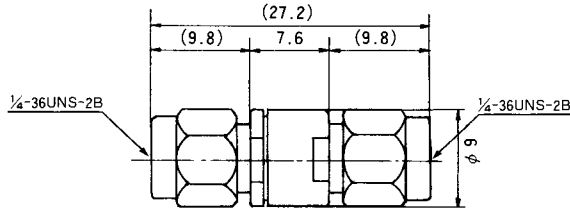
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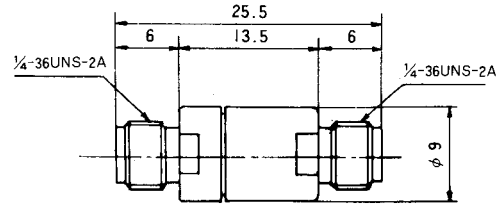
AT-100 Type



AT-126,130 Type

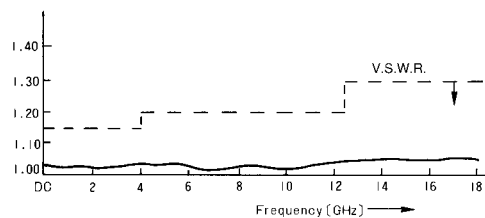
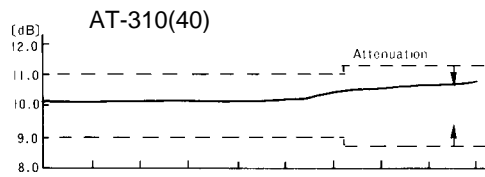
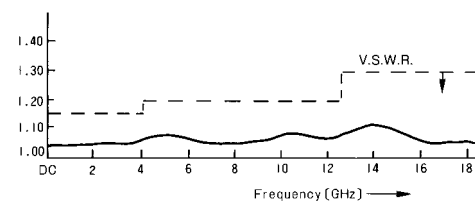
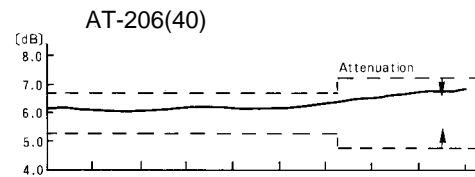
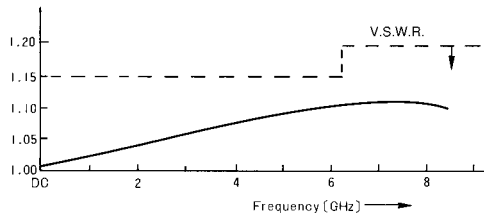
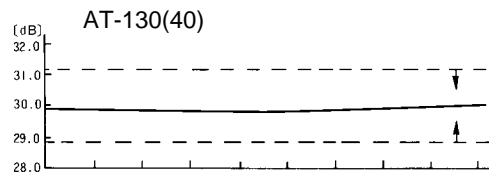
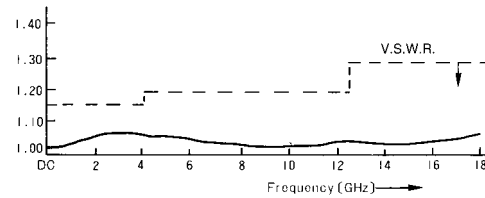
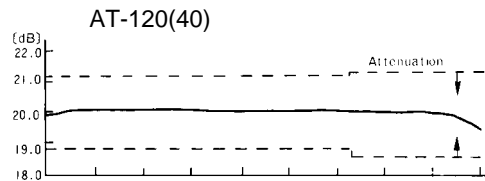
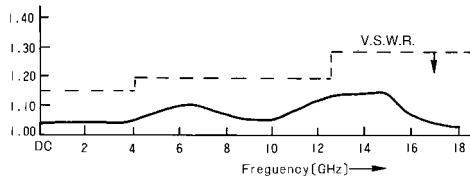
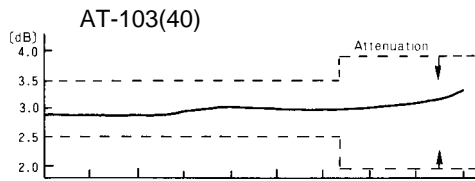


AT-200 Type



AT-300 Type

Typical Data



Input Power Characteristics

