

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

Item	Standard	Conditions
1. Vibration	No electrical discontinuity of 1 $\mu$ s 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 <sup>2</sup> for 2 hours in each of 3 directions
2. Shock		Acceleration of 490 m/s <sup>2</sup> , sine half-wave waveform, 3 cycles in each of the 3 axis
3. Temperature cycle	No damage, cracks, or parts dislocation	Temperature: -55°C → +5°C → +35°C → +85°C → +5°C → +35°C Time: 30 → 15 max. → 30 → 15 max. (Minutes) 200 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)**

①                      ②                      ③

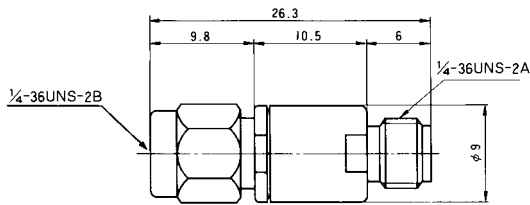
① AT: Indicates a fixed attenuator	③ Attenuation 01 : 1dB 06 : 6dB 00-(0) : 0dB (Through)
② Indicates the Series Name (Coupling Portion) 1: SMA plug - jack 2: SMA plug - plug 3: SMA jack - jack	00-(0.5) : 0.5dB 00-(3.5) : 3.5dB

## ■ Specifications

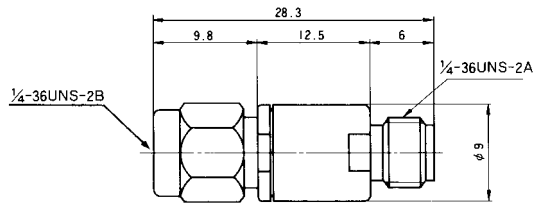
Part Number	Attenuation (dB)		V.S.W.R.(Max)			Power (W)	Connectors	Weight (g)
	DC~12.4GHz	12.4~18GHz	DC~4GHz	4~12.4GHz	2.4~18GHz			
AT-100-(0)	0 <sup>+0.5</sup> <sub>0</sub>	0 <sup>+1.0</sup> <sub>0</sub>	1.15	1.20	1.30	1	HRM-J · P	8
AT-100-(0.5)	0.5±0.5	0.5 <sup>+1.0</sup> <sub>-0.5</sub>	1.15	1.20	1.30	1	HRM-J · P	8
AT-101	1±0.5	1±1.0	1.15	1.20	1.30	1	HRM-J · P	8
AT-100-(1.5)	1.5±0.5	1.5±1.0	1.15	1.20	1.30	1	HRM-J · P	8
AT-102	2±0.5	2±1.0	1.15	1.20	1.30	1	HRM-J · P	8
AT-100-(2.5)	2.5±0.5	2.5±1.0	1.15	1.20	1.30	1	HRM-J · P	8
AT-103	3±0.5	3±1.0	1.15	1.20	1.30	1	HRM-J · P	8
AT-100-(3.5)	3.5±0.5	3.5±1.0	1.15	1.20	1.30	1	HRM-J · P	8
AT-104	4±0.5	4±1.0	1.15	1.20	1.30	1	HRM-J · P	8
AT-105	5±0.7	5±1.2	1.15	1.20	1.30	1	HRM-J · P	8
AT-106	6±0.7	6±1.2	1.15	1.20	1.30	1	HRM-J · P	8
AT-107	7±0.7	7±1.2	1.15	1.20	1.30	1	HRM-J · P	8
AT-108	8±0.7	8±1.2	1.15	1.20	1.30	1	HRM-J · P	8
AT-109	9±1.0	9±1.25	1.15	1.20	1.30	1	HRM-J · P	8
AT-110	10±1.0	10±1.25	1.15	1.20	1.30	1	HRM-J · P	8
AT-112	12±1.0	12±1.25	1.15	1.20	1.30	1	HRM-J · P	8
AT-113	13±1.0	13±1.25	1.15	1.20	1.30	1	HRM-J · P	8
AT-114	14±1.2	14±1.3	1.15	1.20	1.30	1	HRM-J · P	8
AT-115	15±1.2	15±1.3	1.15	1.20	1.30	1	HRM-J · P	8
AT-120	20±1.2	20±1.3	1.15	1.20	1.30	1	HRM-J · P	8
AT-203	3±0.5	3±1.0	1.15	1.20	1.30	1	HRM-P · P	9
AT-206	6±0.7	6±1.2	1.15	1.20	1.30	1	HRM-P · P	9
AT-210	10±1.0	10±1.25	1.15	1.20	1.30	1	HRM-P · P	9
AT-220	20±1.2	20±1.3	1.15	1.20	1.30	1	HRM-P · P	9
AT-303	3±0.5	3±1.0	1.15	1.20	1.30	1	HRM-J · J	7
AT-306	6±0.7	6±1.2	1.15	1.20	1.30	1	HRM-J · J	7
AT-310	10±1.0	10±1.25	1.15	1.20	1.30	1	HRM-J · J	7
AT-320	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)
	DC~8GHz	DC~4GHz	4~8GHz			
AT-126	26±1.0	1.15	1.20	1	HRM-J · P	8
AT-130	30±1.2	1.15	1.20	1	HRM-J · P	8

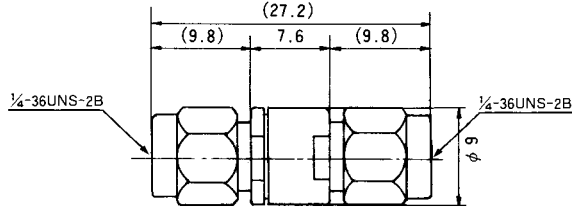
## External Dimensions



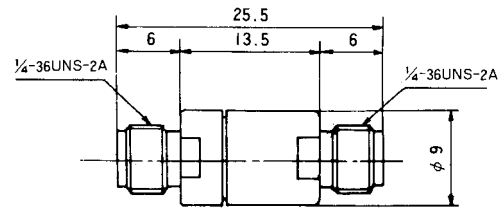
AT-100 Type



AT-126,130 Type

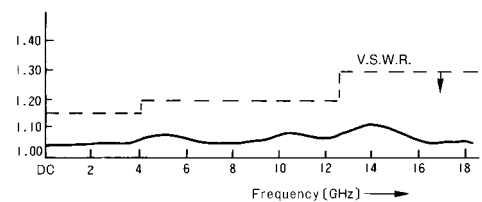
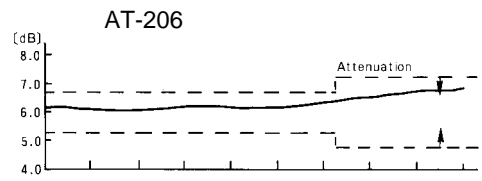
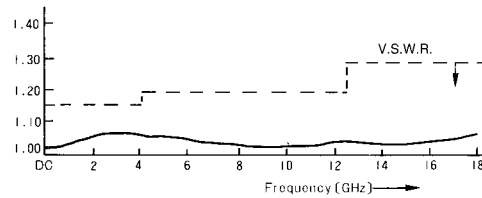
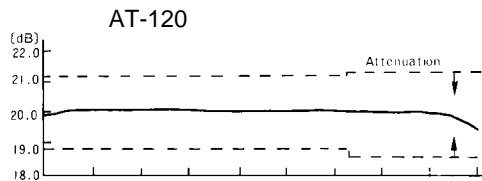
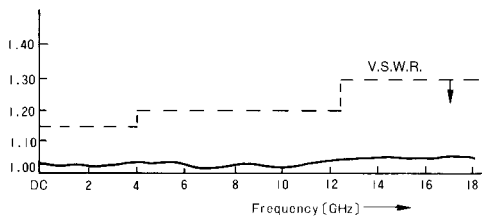
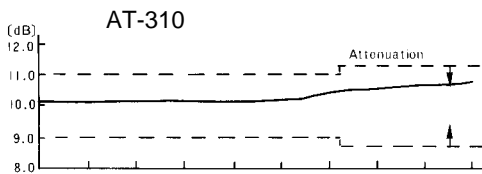
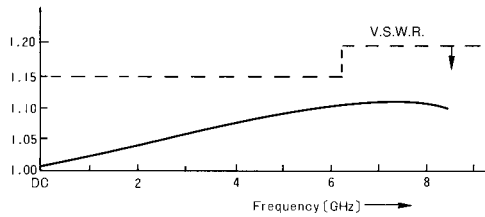
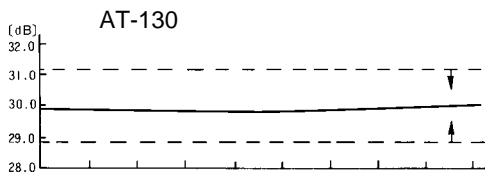
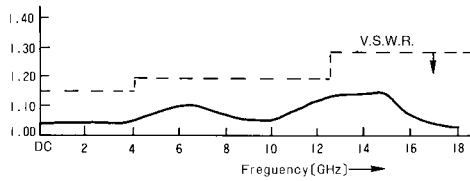
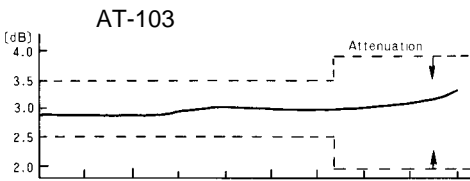


AT-200 Type



AT-300 Type

## Typical Data



### Input Power Characteristics

