

# 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 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 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 <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 → +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

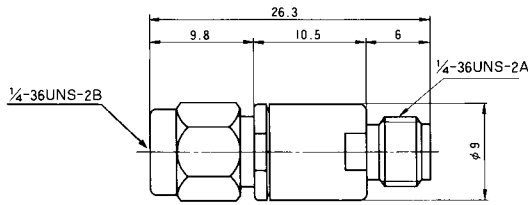
① AT: Indicates a fixed attenuator	③ Attenuation 01 : 1dB 06 : 6dB 00-(0) : 0dB (Through) 00-(0.5) : 0.5dB 00-(3.5) : 3.5dB
② Indicates the Series Name (Coupling Portion) 1: SMA plug - jack 2: SMA plug - plug 3: SMA jack - jack	④ (40): RoHS compliant

## ■ Specifications

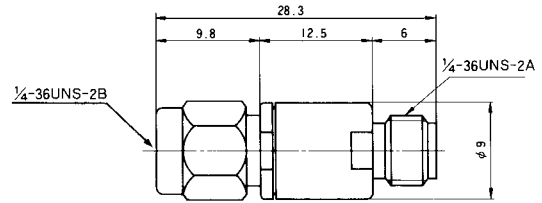
Part Number	Attenuation (dB)		V.S.W.R.(Max)			Power (W)	Connectors	Weight (g)	RoHS
	DC~12.4GHz	12.4~18GHz	DC~4GHz	4~12.4GHz	2.4~18GHz				
AT-100-(0)(40)	0 <sup>+0.5</sup> <sub>0</sub>	0 <sup>+1.0</sup> <sub>0</sub>	1.15	1.20	1.30	1	HRM-J · P	8	YES
AT-100-(0.5)(40)	0.5±0.5	0.5 <sup>+1.0</sup> <sub>-0.5</sub>	1.15	1.20	1.30	1	HRM-J · P	8	
AT-101(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	

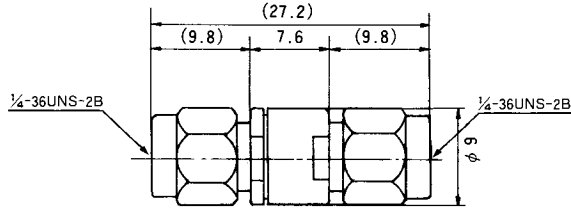
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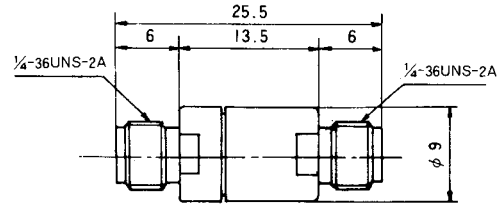
AT-100 Type



AT-126,130 Type

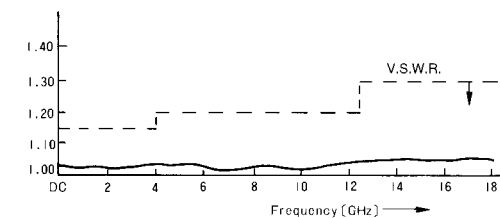
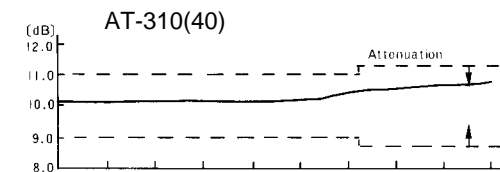
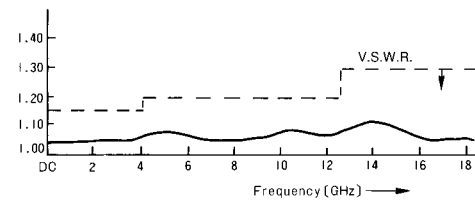
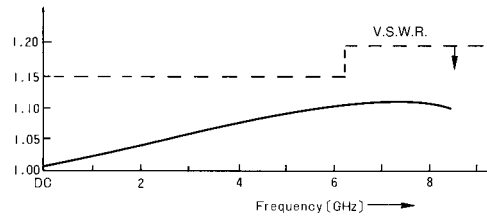
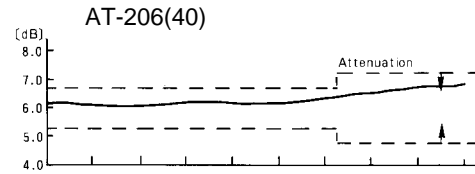
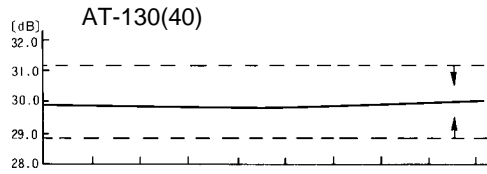
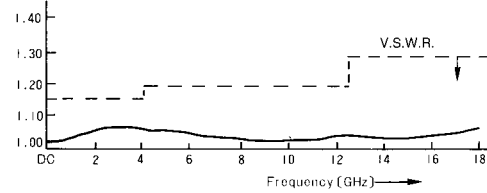
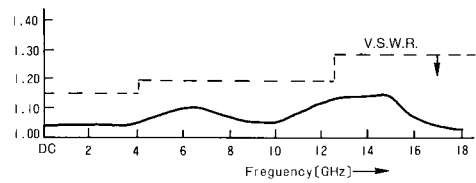
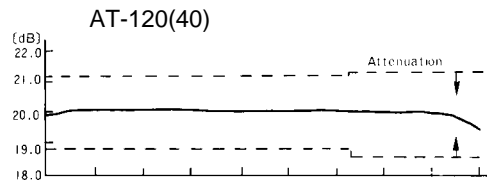
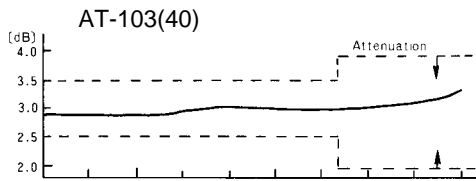


AT-200 Type



AT-300 Type

## Typical Data



## Input Power Characteristics

