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℃ to +65℃ 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/s² for 2 hours in each of 3 directions
2.Shock		Acceleration of 490 m/s², sine half-wave waveform, 3 cycles in each of the 3 axis
3.Temperature cycle	No damage, cracks, or parts dislocation	Temperature: -55℃ → +5℃ to +35℃ → +85℃ → +5℃ to +35℃ 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)
❶ ❷ ❸

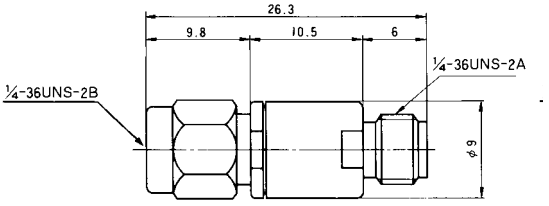
❶ AT: Indicates a fixed attenuator	❸ Attenuation 01 : 1dB 06 : 6dB 00-(0) : 0dB (Through) 00-(0.5) : 0.5dB 00-(3.5) : 3.5dB
❷ Indicates the Series Name (Coupling Portion) 1: SMA plug - jack 2: SMA plug - plug 3: SMA jack - jack	

■Specifications

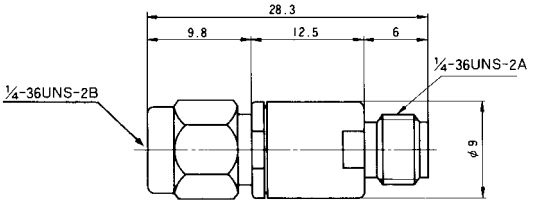
Part Number	Attenuation (dB)		V.S.W.R.(Max)			Power (W)	Connectors	Weight (g)
	DC～12.4GHz	12.4～18GHz	DC～4GHz	4～12.4GHz	2.4～18GHz			
AT-100-(0)	$0^{+0.5}_{0}$	$0^{+1.0}_{0}$	1.15	1.20	1.30	1	HRM-J・P	8
AT-100-(0.5)	0.5±0.5	$0.5^{+1.0}_{-0.5}$	1.15	1.20	1.30	1	HRM-J・P	8
AT-101	1±0.5	1±1.0	1.15	1.20	1.30	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

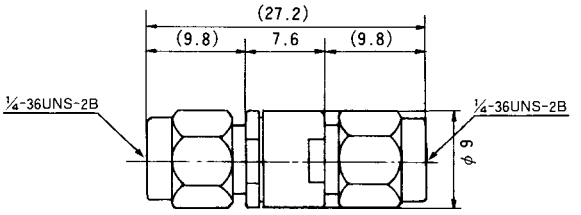
■External Dimensions



AT-100 Type



AT-126,130 Type



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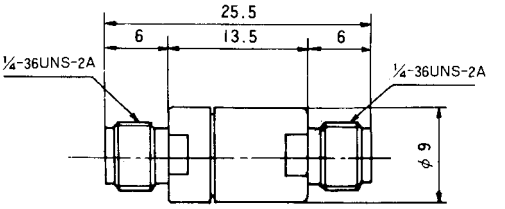
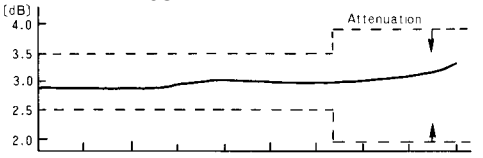
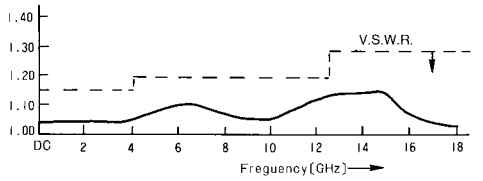


AT-300 Type

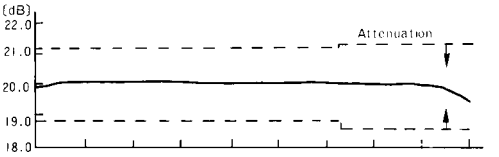
■Typical Data

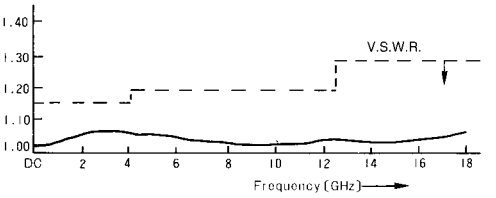
AT-103





AT-120





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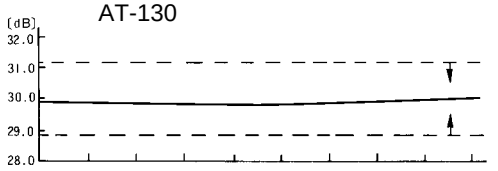
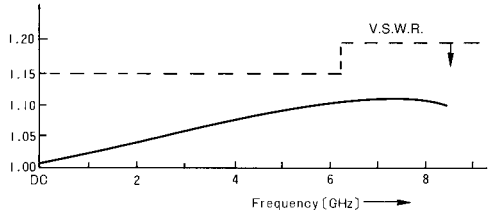
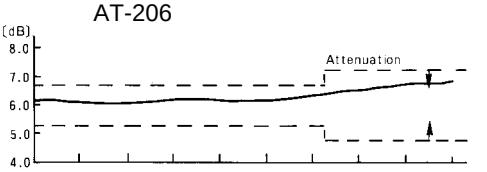
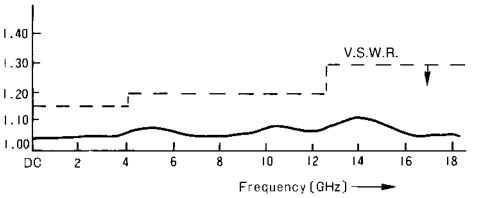




AT-206





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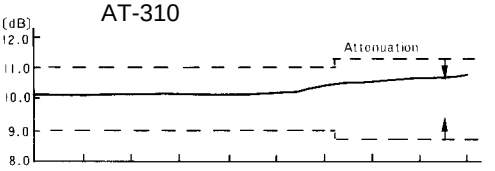

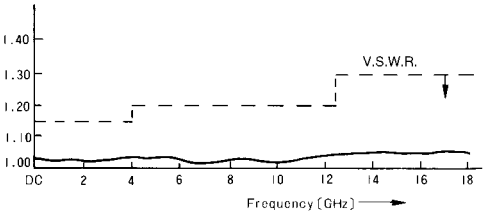

Input Power Characteristics