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# DC to 65 GHz, HV Connector Attenuators

## HV-AT Series



### Overview

Small, lightweight and low V.S.W.R makes it ideally suited for the widely used high frequency transmission applications.

Frequency bandwidth and high reliability is achieved by the use of resistance substrate on the extremely thin board, to form a suspended line.

HRS unique resistance substrate design and center conductor connection assures consistent and stable performance in changing temperature environments.

### Features

- 1. Low V.S.W.R.**  
1.4 (Typical DC to 65 GHz)
- 2. Space-saving design**  
Overall dimensions: 9 mm dia. x 24.64 mm long.
- 3. Lightweight**  
Total weight: 5.86 g.
- 4. Mating compatibility**  
Will mate with corresponding V Connector™ or 1.85mm connector. (Note)
- 5. RoHS compliant**  
All components and materials comply with EU Directive 2002/95/EC.

### Applications

- \* Optical transmission devices
- \* Network analyzers
- \* BERTS (Bit Error Ratio Testing Systems)
- \* FWA (Fixed Wireless Access)
- \* Measurement applications requiring transmission frequencies of up to 65 GHz.

Note: V Connectors is a registered trademark of Anritsu Corporation.

### Specifications

|        |  |  |  |                            |
|--------|--|--|--|----------------------------|
| Rating | Frequency range<br>Characteristic impedance<br>Power<br>Weight | DC to 65GHz<br>50Ω<br>1W CW (At 65°C)<br>5.86g | Operating temperature range<br>Operating relative humidity | -10°C to +65°C<br>90% max. |
|--------|--|--|--|----------------------------|

| Part No.     | Attenuation (dB)                   |                                    |                                    |                                    | V.S.W.R. (Max) |            |            |          | RoHS |
|--------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|----------------|------------|------------|----------|------|
|              | DC~18GHz                           | 18~26.5GHz                         | 26.5~40GHz                         | 40~65GHz                           | DC~18GHz       | 18~26.5GHz | 26.5~40GHz | 40~65GHz |      |
| HV-AT(0)-PJ  | 0 <sup>+0.4</sup>                  | 0 <sup>+0.5</sup>                  | 0 <sup>+0.8</sup>                  | 0 <sup>+1</sup>                    | 1.35           | 1.4        | 1.55       |          | YES  |
| HV-AT(3)-PJ  | 3 <sup>+0.6</sup> <sub>-0.4</sub>  | 3 <sup>+0.7</sup> <sub>-0.4</sub>  | 3 <sup>+0.9</sup> <sub>-0.4</sub>  | 3 <sup>+1.5</sup> <sub>-0.4</sub>  | 1.4            |            | 1.55       |          |      |
| HV-AT(6)-PJ  | 6 <sup>+0.7</sup> <sub>-0.3</sub>  | 6 <sup>+0.8</sup> <sub>-0.3</sub>  | 6 <sup>+0.9</sup> <sub>-0.3</sub>  | 6 <sup>+1.5</sup> <sub>-0.3</sub>  | 1.4            |            | 1.6        |          |      |
| HV-AT(10)-PJ | 10 <sup>+0.9</sup> <sub>-0.7</sub> | 10 <sup>+0.4</sup> <sub>-0.7</sub> | 10 <sup>+0.6</sup> <sub>-0.7</sub> | 10 <sup>+1.5</sup> <sub>-0.7</sub> | 1.4            |            | 1.6        |          |      |
| HV-AT(20)-PJ | 20 <sup>+0.7</sup> <sub>-0.3</sub> | 20 <sup>+0.9</sup> <sub>-0.3</sub> | 20 <sup>+1.1</sup> <sub>-0.3</sub> | 20 <sup>+1.3</sup> <sub>-0.3</sub> | 1.4            |            | 1.6        |          |      |

| Item                        | Specification  | Conditions  |
|-----------------------------|--|---|
| 1.Vibration                 | No electrical discontinuity of 1 $\mu$ s sec. max.<br>No damage, cracks, or parts dislocation. | Frequency 10 to 55 Hz, single amplitude of 1.5mm, 3 axis, duration of 2 hours.  |
| 2.Shock                     | No electrical discontinuity of 1 $\mu$ s sec. max.<br>No damage, cracks, or parts dislocation. | Acceleration of 490m/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 $^{\circ}$ C $\rightarrow$ 15 $^{\circ}$ C to 25 $^{\circ}$ C $\rightarrow$ 125 $^{\circ}$ C $\rightarrow$ 15 $^{\circ}$ C to 25 $^{\circ}$ C<br>Duration (Minutes): 30 $\rightarrow$ 2 to 3 $\rightarrow$ 30 $\rightarrow$ 2 to 3<br>100 cycles |
| 4.High temperature exposure | No damage, cracks, or parts dislocation.   | 48 hours at 125 $^{\circ}$ C  |
| 5.Low temperature exposure  | No damage, cracks, or parts dislocation.   | 48 hours at -55 $^{\circ}$ C  |
| 6.Corrosion resistance      | No corrosion   | 5% salt water solution, 48 hours at 35 $^{\circ}$ C   |

## Materials and Finishes

| Components          | Material                       | Finish      |
|---------------------|--------------------------------|-------------|
| Shell               | Stainless steel                | Passivated  |
| Coupling            |                                |             |
| Insulator           | PTFE (Polytetrafluoroethylene) | ————        |
| Male contact        | Brass                          | Gold plated |
| Female contact      | Beryllium copper               | Gold plated |
| Attenuation element | Metal film                     | ————        |

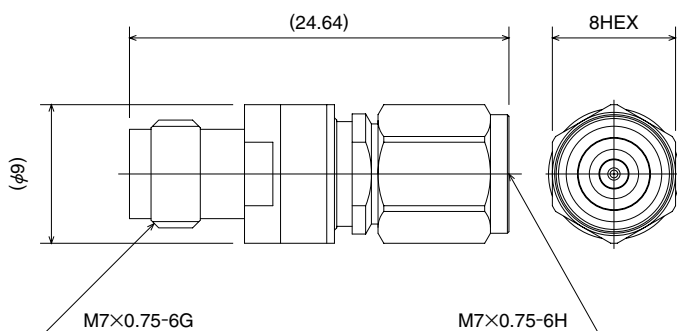
## Ordering information

**HV - AT (※※) - PJ**

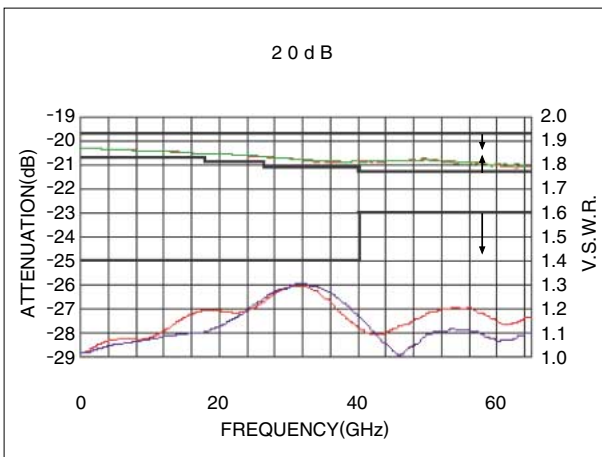
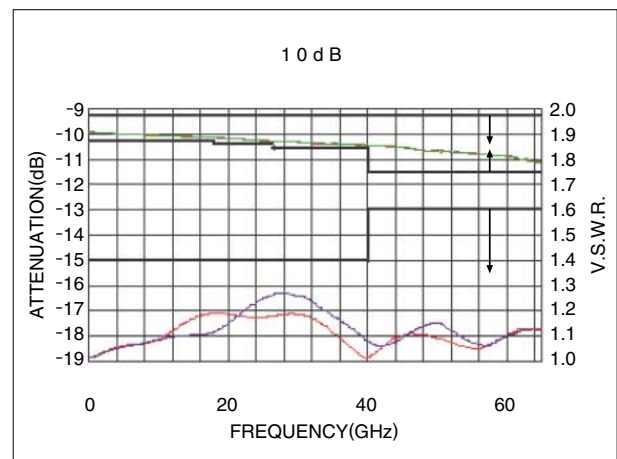
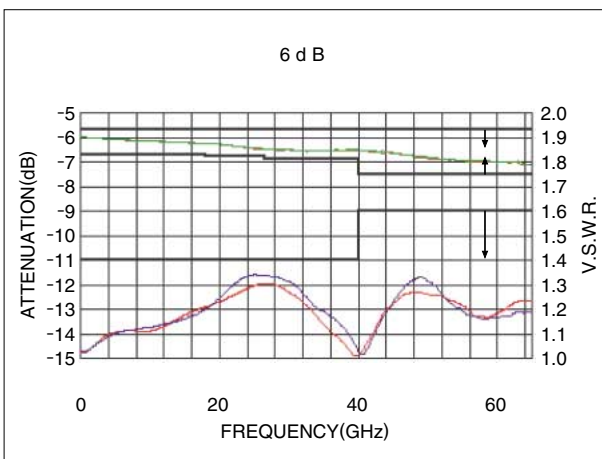
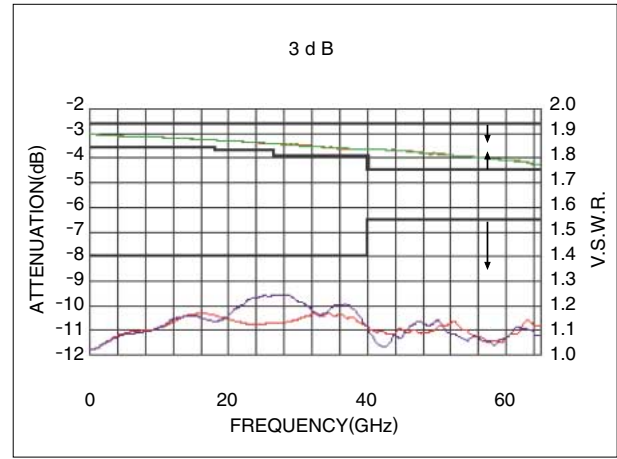
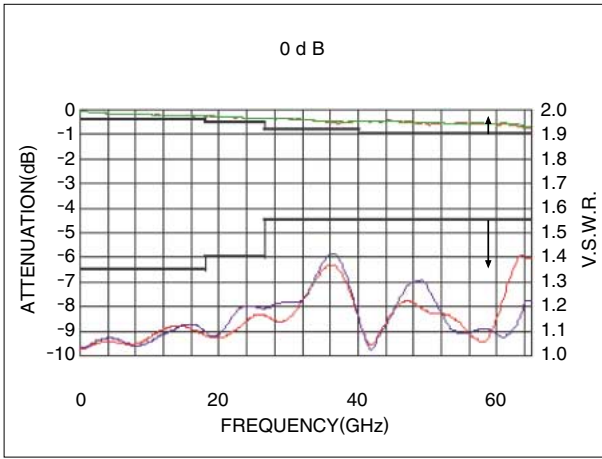
①      ②      ③      ④

|                  |                      |
|------------------|----------------------|
| ① Series name    | : HV Series          |
| ② AT             | : Attenuator         |
| ③ Attenuation    | : 0 ... 0 dB         |
| ④ Connector type | : PJ ... Plug · jack |

## Plug-Jack type Attenuator



## ■ Typical data



## ◆ Usage Precautions

1. The center pin contact is 0.511mm diameter. Exercise care when handling the attenuator as NOT to damage or deform this contact. When mating the attenuator with corresponding connector rotate only the hex part. Do not apply axial loads to the center contact or the attenuator body itself.
2. Keep both mating ends free of contamination. If needed, they can be cleaned with alcohol.