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The product information in this catalog is for reference only. Please request the Engineering Drawing for the most current and accurate design information. All non-RoHS products have been discontinued, or will be discontinued soon. Please check the products status on the Hirose website RoHS search at www.hirose-connectors.com, or contact your Hirose sales representative.

## 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<sup>™</sup> or 1.85mm connector. (Note)

#### 5. RoHS compliant

All components and materials comply with EU Directive 2002/95/EC.

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

#### Specifications

### 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.

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| Rating       | Frequency range<br>Characteristic impedance<br>Power<br>Weight |                            | DC to 65GHz<br>50Ω<br>1W CW (At 65℃)<br>5.86g |  |                | Operating temperature range<br>Operating relative humidity |            | -10℃ to +65℃<br>90% max. |      |
|--------------|--|----------------------------|---|--|----------------|--|------------|--------------------------|------|
| Part No.     |  | Attenuat                   | ion (dB)                                      |  | V.S.W.R. (Max) |  | R. (Max)   |                          |      |
|              | DC~18GHz   | 18~26.5GHz                 | 26.5~40GHz                                    | 40~65GHz                                 | DC~18GHz       | 18~26.5GHz   | 26.5~40GHz | 40~65GHz                 | RoHS |
| HV-AT(0)-PJ  | 0 <sup>+0.4</sup>  | 0 <sup>+0.5</sup>          | 0 <sup>+0.8</sup>                             | 0 <sup>+1</sup> <sub>0</sub>             | 1.35           | 1.4  | 1.         | 55                       |      |
| HV-AT(3)-PJ  | <b>3</b> <sup>+0.6</sup> <sub>-0.4</sub>                       | $3_{-0.4}^{+0.7}$          | $3_{-0.4}^{+0.9}$                             | <b>3</b> <sup>+1.5</sup> <sub>-0.4</sub> |                | 1.4  |            | 1.55                     |      |
| HV-AT(6)-PJ  | 6 <sup>+0.7</sup>  | 6 <sup>+0.8</sup>          | 6 <sup>+0.9</sup>                             | 6 <sup>+1.5</sup><br>-0.3                |                | 1.4  |            | 1.6                      | YES  |
| HV-AT(10)-PJ | 10 <sup>+0.3</sup>   | 10 <sup>+0.4</sup><br>-0.7 | $10^{+0.6}_{-0.7}$                            | 10 <sup>+1.5</sup>                       | 1.4            |  | 1.6        |                          |      |
| HV-AT(20)-PJ | 20 <sup>+0.7</sup>   | 20 <sup>+0.9</sup><br>-0.3 | 20 <sup>+1.1</sup><br>-0.3                    | 20 <sup>+1.3</sup>                       | 1.4 1.6        |  | 1.6        |                          |      |

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

#### Materials and Finishes

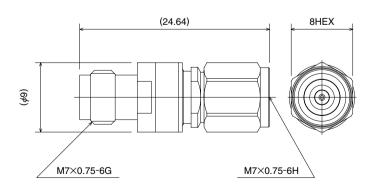
| Components          | Material                       | Finish      |  |
|---------------------|--------------------------------|-------------|--|
| Shell               | Stainless steel                | Passivated  |  |
| Coupling            | Starness steel                 |             |  |
| Insulator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

#### **Ordering information**



| 0 | Series name    | : HV Series      |
|---|----------------|------------------|
| 2 | AT             | : Attenuator     |
| 8 | Attenuation    | : 0 0 dB         |
| 4 | Connector type | : PJ Plug · jack |

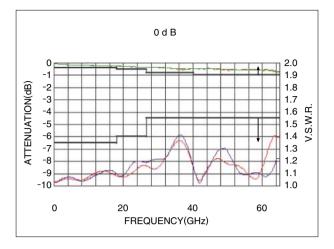
#### Plug-Jack type Atteuator

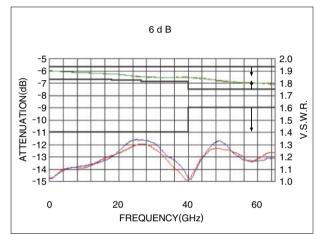


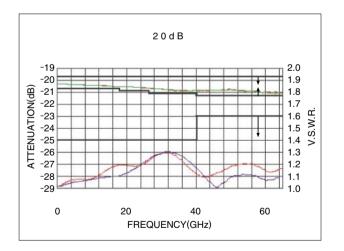
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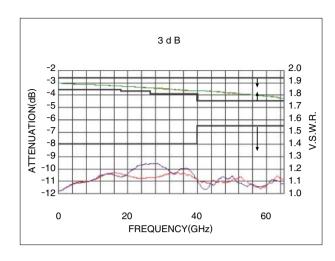
## Typical data

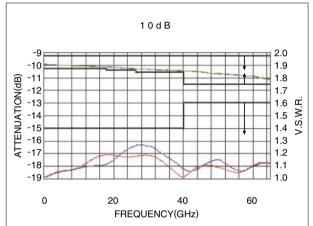
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## Usage Precautions

- 1.The center pin contact is 0.511mm diameter. Excersise 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.