Cylindrical High Voltage, Low TCR & VCR Resistors, Thick film, Non-Inductive

3RLAB offers HS-series to meet applications very low TCR, Low VCR requirements, Especially for High Voltage - Functional Non-Inductive Divider Sets, High Voltage Precision Measurements Systems.

**HS Precision High Voltage Resistor, Non-Inductive Thick Film**

Epoxy conformal full coat for excellent humidity protection
Resistance tolerance offered: 0.5% 1% 2% 5% (0.1% special up to 100Megohm of HS15 HS19 HS25)

* Temperature Coefficient of Resistance: 75ppm/ºC std.
and (20ppm/ºC 35ppm/ºC 50ppm/ºC 60ppm/ºC 85ppm/ºC as special)
* Load Life Stability of 0.25% per 1000hours at rated power.
* Resistance range: 100kΩ to 1GΩ, and extended to 100Terohms
* Various Models related with Voltage Ratings from 2.5kV to 48kV in free air.
* NCR: Non-contact resistance design between resistive parts and termination.

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<tbody>
<tr>
<td>HS15</td>
<td>0.2</td>
<td>N/A</td>
<td>2.0</td>
<td>4.0</td>
<td>100K (500M)</td>
<td>see UR-series</td>
<td>15+/-1.5 (.590) 5+/-1.5 (.197)</td>
<td>A 76+/-2 (3.0) B 8+/-1.5 (.314) C 10</td>
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<tr>
<td>HS19</td>
<td>0.3</td>
<td>N/A</td>
<td>2.5</td>
<td>5.0</td>
<td>100K (500M)</td>
<td>see UR-series</td>
<td>19+/-1.5 (.748) 5+/-1.5 (.197)</td>
<td>A 8+/-1.0 (.314) C 10</td>
</tr>
<tr>
<td>HS25</td>
<td>0.5</td>
<td>N/A</td>
<td>4.5</td>
<td>9.0</td>
<td>100K (500M)</td>
<td>see UR-series</td>
<td>25.4+/-1.5 (1.0) 5+/-1.5 (.197)</td>
<td>A 8+/-1.0 (.314) C 10</td>
</tr>
<tr>
<td>HS24</td>
<td>1.5</td>
<td>N/A</td>
<td>4.0</td>
<td>8.0</td>
<td>100K (500M)</td>
<td>see UR-series</td>
<td>24.0+/-1.5 (.944) 8+/-1.0 (.314)</td>
<td>A 8+/-1.0 (.314) C 10</td>
</tr>
<tr>
<td>HS39</td>
<td>2.5</td>
<td>0.8</td>
<td>10.0</td>
<td>20</td>
<td>100K (1G)</td>
<td>see UR-series</td>
<td>39.0+/-1.5 (1.50) 8+/-1.0 (.314)</td>
<td>A 8+/-1.0 (.314) C 10</td>
</tr>
<tr>
<td>HS52</td>
<td>3.0</td>
<td>1.0</td>
<td>15.0</td>
<td>30</td>
<td>100K (1G)</td>
<td>see UR-series</td>
<td>52.0+/-1.5 (2.04) 6+/-1.0 (.314)</td>
<td>A 8+/-1.0 (.314) C 10</td>
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<tr>
<td>HS76</td>
<td>4.5</td>
<td>1.5</td>
<td>22.5</td>
<td>40</td>
<td>1M (1G)</td>
<td>upto 10T</td>
<td>76.0+/-2 (3.0) 8+/-1.5 (.314)</td>
<td>A 10</td>
</tr>
<tr>
<td>HS102</td>
<td>6.0</td>
<td>2.0</td>
<td>32.0</td>
<td>50</td>
<td>1M (1G)</td>
<td>upto 100T</td>
<td>102+/-2 (4.01) 9+/-1.0 (.354)</td>
<td>A 1.0</td>
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<tr>
<td>HS117</td>
<td>7.0</td>
<td>2.3</td>
<td>35.0</td>
<td>60</td>
<td>1M (1G)</td>
<td>1K~900K</td>
<td>117+/-2 (4.6) 9+/-1.0 (.354)</td>
<td>A 1.0</td>
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<tr>
<td>HS127</td>
<td>7.5</td>
<td>2.5</td>
<td>37.0</td>
<td>65</td>
<td>1M (1G)</td>
<td>1K~900K</td>
<td>127+/-2 (5.0) 9+/-1.0 (.354)</td>
<td>A 1.0</td>
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<tr>
<td>HS137</td>
<td>8.0</td>
<td>2.7</td>
<td>40.0</td>
<td>70</td>
<td>1M (1G)</td>
<td>1K~900K</td>
<td>137+/-2 (5.4) 9+/-1.0 (.354)</td>
<td>A 1.0</td>
</tr>
<tr>
<td>HS152</td>
<td>9.0</td>
<td>3.0</td>
<td>48.0</td>
<td>77</td>
<td>1M (1G)</td>
<td>upto 100T</td>
<td>152+/-2 (6.0) 9+/-1.0 (.354)</td>
<td>A 1.0</td>
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</table>

+ Custom dimension & specification, Ohmic Value available upon request.
+ Voltage restricted by the rated power.
+ Above Electrical specification applicable for: From HS15 to HS24: 0.1MD to 200MD. From HS39 to HS152: 0.1MD to 1GD only
1) in fully epoxy/silicone rubber molded case condition, precision high voltage dividers required very long life stability in harsh condition
2) Vdc, Vrms standard.
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**DIMENSIONS [mm]**

![DIMENSIONS Diagram]

**DERATING CURVE**

![DERATING CURVE Diagram]

**APPLICATION GUIDE ; HS SERIES**

- Automated Test (ATE)
- Medical (Imaging)
- Ion Source
- Chromatography (Gas)
- Medical (Radiation Therapy)
- Military, Radar, Laser, Plasma
- Measurements (High Voltage)
- HV Capacitor Charging, Discharging
- Electric Power Transmission
- High Voltage
- Medical (Blood Analyzers)
- Corona Generators
- Multichannel Analyzers
- Ozone Generating
- Detectors
- Nuclear Instrumentation
- Electron Beam
- Pulse Generators
- Surface Analysis
- C T , MRI
- Electrophoresis
- Image Intensifier
- Surface Analysis
- Piezo. Focusing (Poling)
- High Voltage Dividers
- Stress Testing
- Agricultural Sensors
- Klystron, Magnetron, Microwave

**SPECIFICATIONS**

- **Resistance Tolerance:**
  - 1%  2%  5%  &  0.5%. And special tolerance
  - (from 0.1MΩ to 100MΩ : 0.1%, 0.25% as special order
  - available upon request for HS15  HS19  HS25 )
- **Endurable Harsh to Environment (Temperature):**
  - -55ºC to +195°C, Max.
  - brokable temperature on resistives is 600°C (for 70 min.)
- **Temperature Coefficient of Resistance:**
  - Std. 75ppm/°C referenced to 25°C,
  - ΔR taken at -25°C and +70°C,
  - Other special TCR on request
  - (20ppm/°C, 35ppm/°C, 50ppm/°C, 60ppm/°C, 85ppm/°C)
- **Overload/Voltage:**
  - 5 times rated power with applied voltage not to exceed
  - 1.5 times maximum continuous operating voltage for 5 seconds ΔR 0.2% max.
- **Thermal Shock:**
  - Mil-Std-202, Method- 107, Cond. C, ΔR 0.2% max.
- **Load Life:**
  - 1.000 hours at rated power ΔR 0.2% max.
- **Moisture Resistance:**
  - Mil-Std-202, Method 106, ΔR 0.25% max.
- **Lead Material:**
  - Tinned plated copper solderable semi-flexible axial wire.
- **Insulation Resistance:**
  - 10,000MΩ Min.
- **Termination Cap of Material:**
  - Tinned Cap.
- **Encapsulation:**
  - Epoxy conformal.
- **Resistive Material:**
  - Thick Film.
- **Contact method between Resistives and**
- **Termination Caps:**
  - Individual Conductive Pads . So, called “NCR” Non-contact resistance.

* Rated power , and voltage of %

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cf.: The described specifications & dimensions subject to change without notice.