

Wirewound Resistors, Industrial Power, Vitreous Coated, Adjustable Tubular



FEATURES

- High temperature vitreous coating
- Complete welded construction
- Tight tolerance of 5 % for values above 1 Ω
- Excellent stability in operation (< 3 % change in resistance)
- Material categorization:
for definitions of compliance please see www.vishay.com/doc?99912



RoHS
COMPLIANT
HALOGEN
FREE
GREEN
(5-2008)

| STANDARD ELECTRICAL SPECIFICATIONS | | | | | |
|------------------------------------|------------------|---|---|--|-----------------------|
| GLOBAL MODEL | HISTORICAL MODEL | POWER RATING $P_{25^{\circ}\text{C}}$ W | RESISTANCE RANGE Ω $\pm 5\%$ | RESISTANCE RANGE Ω $\pm 10\%$ | WEIGHT (typical) g |
| AVT010 | AVT-10 | 12 | 0.1 to 10.2K | 0.1 to 10.2K | 6.69 |
| AVT020 | AVT-20 | 20 | 1.0 to 18K | 1.0 to 18K | 12.57 |
| AVT20A | - | 15 | 1.0 to 60K | 0.10 to 60K | 8.64 |
| AVT025 | AVT-25 | 25 | 0.1 to 23K | 0.1 to 23K | 20.72 |
| AVT25A | AVT-25A | 30 | 0.1 to 30K | 0.1 to 30K | 20.72 |
| AVT25B | AVT-25B | 30 | 0.1 to 24K | 0.1 to 24K | 14.25 |
| AVT050 | AVT-50 | 50 | 0.1 to 57K | 0.1 to 57K | 42.08 |
| AVT50A | AVT-50A | 60 | 0.1 to 75K | 0.1 to 75K | 65.64 |
| AVT50B | AVT-50B | 70 | 0.1 to 84.3K | 0.1 to 84.3K | 64.82 |
| AVT075 | AVT-75 | 75 | 0.1 to 85.5K | 0.1 to 85.5K | 106.37 |
| AVT75A | AVT-75A | 90 | 0.1 to 114K | 0.1 to 114K | 183.82 |
| AVT080 | - | 90 | 1.0 to 190K | 0.10 to 190K | 121.58 |
| AVT100 | AVT-100 | 100 | 0.1 to 132K | 0.1 to 132K | 91.37 |
| AVT130 | AVT-130 | 130 | 0.1 to 192K | 0.1 to 192K | 192.36 |
| AVT160 | AVT-160 | 175 | 0.1 to 398K | 0.1 to 398K | 250.8 |
| AVT175 | - | 175 | 1.0 to 500K | 0.10 to 500K | 250.8 |
| AVT200 | AVT-200 | 225 | 0.1 to 337K | 0.1 to 337K | 309.97 |
| AVT225 | AVT-225 | 225 | 0.1 to 337K | 0.1 to 337K | 309.97 |



| GLOBAL PART NUMBER INFORMATION | | | | | | | | | | | | | | | | | |
|---|--|--|---|---|--|---|---|---|---|---|---|---|---|---|---|--|--|
| Global Part Numbering example: AVT02506E25R00JE (visit www.vishay.net SAP parts manual for all options) | | | | | | | | | | | | | | | | | |
| A | V | T | 0 | 2 | 5 | 0 | 6 | E | 2 | 5 | R | 0 | 0 | J | E | | |
| GLOBAL MODEL (6 digits) (see Standard Electrical Specifications Global Model column for options) | TERMINAL DESIGNATION (2 digits) 05 06 14 15 20 FC = ferrule cap | TERMINAL FINISH (1 digit) E = lead (Pb)-free | VALUE (5 digits) R = decimal K = thousand 1R500 = 1.5 Ω 1K500 = 1.5 kΩ | TOLERANCE (1 digit) J = ± 5 % K = ± 10 % | PACKAGING CODE (1 digit) E = lead (Pb)-free cell and bulk pack | SPECIAL (up to 2 digits) (dash number) from 1 to 99 as applicable 91 = 100 style horizontal high bracket 92 = 200 style push-in bracket 93 = 300 style thru-bolt bracket NI = non-inductive NP = non-inductive + 92 style push-in bracket NH = non-inductive + 91 style horizontal bracket NV = non-inductive + style vertical bracket | | | | | | | | | | | |
| Historical Part Number example: AVT-25-25-5 % | | | | | | | | | | | | | | | | | |
| AVT-25 | 25 Ω | 5 % | | | | | | | | | | | | | | | |
| HISTORICAL MODEL | RESISTANCE VALUE | TOLERANCE | | | | SPECIAL | | | | | | | | | | | |

| DIMENSIONS in inches (millimeters) | | | | | | | | | |
|------------------------------------|------------------|-------------------|---------------------------|---------------------------|--|---|----------------------|--------------------------------|---------------------------|
| | | | | | | | | | |
| MODEL | A (MAX.) | CORE DIMENSIONS | | | TERMINAL SETBACK ± 0.031 (0.79) | DISTANCE CENTER TO CENTER (REF.) | TERMINAL DESIGNATION | | SLIDER MODEL NUMBER |
| | | LENGTH | O.D. ± 0.031 (0.79) | I.D. ± 0.031 (0.79) | | | STANDARD | OPTIONAL (QUICK CONNECT) | |
| AVT010 | 0.406 (10.31) | 1.750 (44.45) | 0.313 (7.95) | 0.188 (4.78) | 0.094 (2.39) | 1.375 (34.93) | 05 | 14 | 70 |
| AVT020 | 0.563 (14.30) | 2.000 (50.8) | 0.438 (11.13) | 0.260 (6.60) | 0.094 (2.39) | 1.625 (41.28) | 02 | 14 | 70 |
| AVT20A | 0.563 (14.30) | 1.500 (38.10) | 0.438 (11.11) | 0.313 (7.94) | 0.094 (2.38) | 0.937 (23.80) | 02 | 14 | - |
| AVT025 | 0.668 (17.48) | 2.000 (50.8) | 0.563 (14.30) | 0.313 (7.95) | 0.094 (2.39) | 1.562 (39.67) | 06 | 15 | 71 |
| AVT25A | 0.906 (23.01) | 2.000 (50.8) | 0.750 (19.05) | 0.500 (12.7) | 0.094 (2.39) | 1.562 (39.67) | 06 | 15 | 72 |
| AVT25B | 0.770 (19.56) | 2.000 (50.8) | 0.625 (15.88) | 0.453 (11.51) | 0.094 (2.39) | 1.562 (39.67) | 06 | 15 | 71 |
| AVT050 | 0.688 (17.48) | 4.000 (101.6) | 0.563 (14.30) | 0.313 (7.95) | 0.094 (2.39) | 3.562 (90.47) | 06 | 15 | 71 |
| AVT50A | 0.906 (23.01) | 4.000 (101.6) | 0.750 (19.05) | 0.500 (12.70) | 0.062 (1.57) | 3.626 (92.10) | 06 | 15 | 71 |
| AVT50B | 0.906 (23.01) | 4.500 (114.3) | 0.750 (19.05) | 0.547 (13.89) | 0.125 (3.18) | 4.000 (101.60) | 06 | 15 | 72 |
| AVT075 | 0.688 (17.48) | 6.000 (152.4) | 0.563 (14.30) | 0.313 (7.95) | 0.094 (2.39) | 5.562 (141.27) | 06 | 15 | 71 |
| AVT75A | 0.906 (23.01) | 6.000 (152.4) | 0.750 (19.05) | 0.500 (12.70) | 0.094 (2.39) | 5.562 (141.27) | 06 | 15 | 72 |
| AVT080 | 1.313 (33.34) | 4.000 (101.6) | 1.125 (28.58) | 0.750 (19.05) | 0.219 (5.56) | 2.812 (71.42) | 20 | 15 | - |
| AVT100 | 0.906 (23.01) | 6.500 (165.1) | 0.750 (19.05) | 0.500 (12.70) | 0.125 (3.18) | 6.000 (152.40) | 06 | 15 | 72 |
| AVT130 | 1.313 (33.35) | 6.500 (165.1) | 1.125 (28.58) | 0.750 (19.05) | 0.282 (7.16) | 5.374 (136.50) | 20 | 15 | 73 |
| AVT160 | 1.313 (33.35) | 8.500 (215.9) | 1.125 (28.58) | 0.750 (19.05) | 0.267 (6.78) | 7.404 (188.06) | 20 | 15 | 73 |
| AVT175 | 1.313 (33.34) | 8.500 (215.9) | 1.125 (28.58) | 0.750 (19.05) | 0.219 (5.56) | 7.312 (185.72) | 20 | 15 | - |
| AVT200 | 1.313 (33.35) | 10.500 (266.7) | 1.125 (28.58) | 0.750 (19.05) | 0.266 (6.76) | 9.406 (238.91) | 20 | 15 | 73 |

| TERMINAL DIMENSIONS in inches (millimeters) | | | | | | | |
|---|------------------|-----------------|-----------------|------------------|------------------|------------------|--|
| DIMENSIONS | TERMINAL STYLE | | | | | | |
| | 20 | 02 | 05 | 06 | 14 | 15 | |
| A | 0.375 (9.53) | 0.188 (4.76) | 0.188 (4.76) | 0.250 (6.35) | 0.188 (4.76) | 0.250 (6.35) | |
| B | 0.562 (14.27) | 0.393 (9.98) | 0.393 (9.98) | 0.500 (12.70) | 0.563 (14.29) | 0.594 (15.08) | |
| C (HOLE DIAMETER) | 0.204 (5.18) | 0.133 (3.38) | 0.133 (3.38) | 0.172 (4.36) | 0.050 (1.27) | 0.065 (1.65) | |
| D | 0.020 (0.51) | 0.020 (0.51) | 0.020 (0.51) | 0.020 (0.51) | 0.020 (0.51) | 0.031 (0.79) | |

| AVT SLIDERS-DIMENSIONS in inches (millimeters) | | | | | | |
|--|---|--|-------------------------|--------------|---------------|------------------|
| | GLOBAL PART NUMBER ⁽¹⁾ (RoHS COMPLIANT) | GLOBAL PART NUMBER FOR EXTRA SLIDERS | SLIDER MODEL TYPE | DIMENSIONS | | |
| | | | | WIDTH | HEIGHT | HOLE DIAMETER |
| | 75008602E29 | AVT010, AVT020 | 70 | 0.187 (4.75) | 0.516 (13.11) | 0.125 (3.18) |
| | 75008603E29 | AVT025, AVT25B, AVT050, AVT50A, AVT075 | 71 | 0.250 (6.35) | 0.719 (18.26) | 0.141 (3.58) |
| | 75008604E29 | AVT25A, AVT50B, AVT75A, AVT100 | 72 | 0.250 (6.35) | 0.844 (21.44) | 0.141 (3.58) |
| | 75008605E29 | AVT130, AVT160, AVT200, AVT225 | 73 | 0.312 (7.92) | 0.797 (20.24) | 0.170 (4.32) |

Note

⁽¹⁾ Order HEI slider with global part number.

MOUNTING HARDWARE FOR AVT PRODUCTS - Dimensions in inches (millimeters)

91 = 100 Style Horizontal 1 High Bracket


| BRACKET TYPE | X | Y | Z | H | MOUNTING SLOT | C | B |
|--------------|------------------|------------------|------------------|------------------|---------------------------------|------------------|------------------|
| 101 | 1.063 (26.99) | 0.500 (12.70) | 0.950 (24.13) | 1.000 (25.40) | 0.219 x 0.438 (5.56 x 11.11) | 0.750 (19.05) | 1.375 (34.93) |
| 102 | 1.063 (26.99) | 0.750 (19.05) | 0.859 (21.83) | 1.250 (31.75) | 0.219 x 0.438 (5.56 x 11.11) | 0.750 (19.05) | 1.750 (44.75) |
| 103 | 1.063 (26.99) | 1.250 (31.75) | 1.000 (25.40) | 1.500 (38.10) | 0.281 x 0.563 (7.14 x 14.29) | 0.927 (23.55) | 2.125 (53.98) |

93 = 300 Style Thru-Bolt Bracket


| BRACKET TYPE | X (APPROXIMATE) | THREAD |
|--------------|-----------------|-----------|
| 301 | 0.373 (9.47) | 8 to 32 |
| 302 | 0.271 (6.88) | 8 to 32 |
| 303 | 0.463 (11.76) | 1/4 to 20 |

92 = 200 Style Push-In Bracket


| BRACKET TYPE | X | H | Y | Z | HOLE (DIA.) |
|--------------|------------------|------------------|------------------|------------------|--------------------------------|
| 202 | 0.478 (12.14) | 0.250 (6.35) | 0.125 (3.175) | 0.375 (9.53) | 0.170 (4.32) |
| 203 | 0.583 (14.80) | 0.580 (14.73) | 0.188 (4.78) | 0.460 (11.68) | 0.115 (2.92) |
| 204 | 0.700 (17.78) | 0.578 (14.68) | 0.250 (6.35) | 0.500 (12.70) | 0.156 (3.96) |
| 205 | 0.846 (21.49) | 0.800 (20.32) | 0.375 (9.53) | 0.600 (15.24) | 0.343 x 0.213 (8.71 x 5.46) |
| 206 | 0.846 (21.49) | 0.800 (20.62) | 0.375 (9.53) | 0.600 (15.24) | 0.343 x 0.213 (8.71 x 5.46) |
| 207 | 0.700 (17.78) | 1.125 (28.58) | 0.500 (12.70) | 0.687 (17.45) | 0.250 x 0.188 (6.35 x 4.78) |

MOUNTING HARDWARE

| GLOBAL MODEL | AVAILABLE BRACKET TYPES BY MODEL | | |
|--------------|--|--------------------------------|----------------------------------|
| | 91 = 100 STYLE HORIZONTAL 1 HIGH BRACKET | 92 = 200 STYLE PUSH-IN BRACKET | 93 = 300 STYLE THRU-BOLT BRACKET |
| AVT010 | 101 | 202 | 301 |
| AVT020 | 101 | 203 | 301 |
| AVT20A | 101 | 203 | 301 |
| AVT025 | 102 | 204 | 301 |
| AVT25A | 102 | 206 | 302 |
| AVT25B | 102 | 205 | 301 |
| AVT050 | 102 | 204 | 302 |
| AVT50A | 102 | 206 | 302 |
| AVT50B | 102 | 208 | 302 |
| AVT075 | 102 | 204 | 301 |
| AVT75A | 102 | 206 | 302 |
| AVT100 | 102 | 206 | 302 |
| AVT130 | 103 | 207 | 302 |
| AVT175 | 103 | 207 | 303 |
| AVT200 | 103 | 207 | 303 |
| AVT225 | 103 | 207 | 303 |

| TECHNICAL SPECIFICATIONS | | |
|--|------------------|---|
| PARAMETER | UNIT | RESISTOR CHARACTERISTICS |
| Power Rating | W | 12 to 225 |
| Resistance Range | Ω | 1 to 398K |
| Resistance Tolerance | % | 5, 10 |
| Temperature Coefficient | ppm/°C | ± 260 for 20 Ω and above, ± 400 for 1 Ω to 19.99 Ω |
| Operating Temperature | °C | -55 °C to 350 °C |
| Temperature Rise | °C | 325 °C above an ambient of 25 °C |
| Maximum Altitude | f.a.s.l. | 10 000 |
| Short-Term Overload | - | 10x rated power for 5 s |
| Surge Windings | | Available |
| Maximum Working Voltage | - | $(P \times R)^{0.5}$ |
| Insulation Resistance | Ω | 1M |
| Dielectric Voltage | V _{RMS} | 1000 V _{AC} |
| Creepage | | Varies by wattage, see "Terminal Setback" in Dimensions table |
| Terminal Sleeves | | n/a |
| Inductance | μ H | Varies by wattage and resistance |
| Non-Inductive Winding | | Available |
| Terminal Strength | lb | 10 lbs |
| Electrical or Mechanical Customization | | Contact factory: ww2dresistors@vishay.com |

| MATERIAL SPECIFICATIONS | |
|-------------------------|---|
| Element | Copper-nickel alloy or nickel-chrome alloy, depending on resistance value |
| Core | Cordierite, steatite |
| Coating | Special high temperature vitreous enamel |
| Standard Terminals | Tinned alloy 42 |
| Optional Terminals | Alloy 42 |
| Terminal Bands | Alloy 42 |
| Part Marking | HEI, model, wattage, value, tolerance, date code |





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JONHON

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