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

Pb-free
RoHS COMPLIANT
HALOGEN FREE
GREEN (5-2008)

LINKS TO ADDITIONAL RESOURCES

3D Models

STANDARD ELECTRICAL SPECIFICATIONS

GLOBAL MODEL	HISTORICAL MODEL	POWER RATING $P_{25\,°C}$ W	RESISTANCE RANGE Ω ± 5 %	RESISTANCE RANGE Ω ± 10 %	WEIGHT (typical) g
AVT010	AVT-10	12	0.1 to 10.6K	0.1 to 10.6K	6.69
AVT012	AVT-12	12	0.1 to 10.6K	0.1 to 10.6K	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 26K	0.1 to 26K	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 54K	0.1 to 54K	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 131K	0.1 to 131K	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 398K	0.10 to 398K	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)

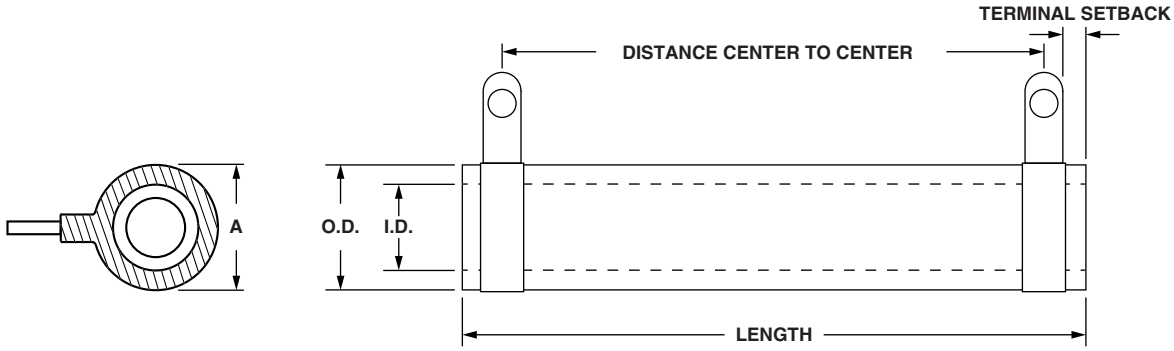
A	V	T	0	2	5	0	6	E	2	5	R	0	0	J	E		

GLOBAL MODEL (6 digits)	TERMINAL DESIGNATION (2 digits)	TERMINAL FINISH (1 digit)	VALUE (5 digits)	TOLERANCE (1 digit)	PACKAGING CODE (1 digit)	SPECIAL (up to 2 digits)
(see Standard Electrical Specifications Global Model column for options)	**05** **06** **14** **15** **20** **FC** = ferrule cap	**E** = lead (Pb)-free	**R** = decimal **K** = thousand **1R500** = 1.5 Ω **1K500** = 1.5 kΩ	**J** = ± 5 % **K** = ± 10 %	**E** = lead (Pb)-free cell and bulk pack	(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 %

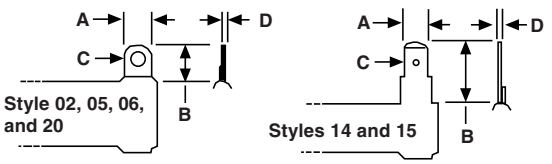
AVT-25	25 Ω	5 %	
HISTORICAL MODEL	RESISTANCE VALUE	TOLERANCE	SPECIAL

DIMENSIONS in inches (millimeters)



MODEL	A (MAX.)	CORE DIMENSIONS			TERMINAL SETBACK ± 0.031 (0.79)	DISTANCE CENTER TO CENTER (REF.)	DISTANCE CENTER TO CENTER QUICK CONNECT (REF.)	TERMINAL DESIGNATION		SLIDER MODEL NUMBER
		LENGTH	O.D. ± 0.031 (0.79)	I.D. ± 0.031 (0.79)				STANDARD	OPTIONAL (QUICK CONNECT)	
AVT010 AVT012	0.406 (10.31)	1.750 (44.45)	0.313 (7.95)	0.188 (4.78)	0.094 (2.39)	1.375 (34.93)	1.312 (33.32)	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)	1.562 (39.67)	02	14	70
AVT20A	0.563 (14.30)	2.000 (50.8)	0.438 (11.11)	0.313 (7.94)	0.094 (2.38)	1.625 (41.28)	1.625 (41.28)	02	14	70
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)	1.50 (38.10)	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)	1.50 (38.10)	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	-	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)	3.50 (88.90)	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)	3.563 (90.51)	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)	3.938 (100.01)	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)	4.500 (114.29)	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)	5.500 (139.70)	06	15	72
AVT080	1.313 (33.34)	4.000 (101.6)	1.125 (28.58)	0.750 (19.05)	0.219 (5.56)	3.187 (80.95)	3.250 (82.45)	20	15	73
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)	5.938 (150.81)	06	15	72
AVT130	1.313 (33.35)	6.500 (165.1)	1.125 (28.58)	0.750 (19.05)	0.282 (7.16)	5.561 (141.25)	5.624 (142.84)	20	15	73
AVT160	1.313 (33.35)	8.500 (215.9)	1.125 (28.58)	0.750 (19.05)	0.267 (6.78)	7.593 (192.86)	4.656 (118.25)	20	15	73
AVT175	1.313 (33.34)	8.500 (215.9)	1.125 (28.58)	0.750 (19.05)	0.219 (5.56)	7.687 (195.25)	7.750 (196.58)	20	15	73
AVT200 AVT225	1.313 (33.35)	10.500 (266.7)	1.125 (28.58)	0.750 (19.05)	0.266 (6.76)	9.593 (243.66)	9.656 (245.26)	20	15	73

TERMINAL DIMENSIONS in inches (millimeters)

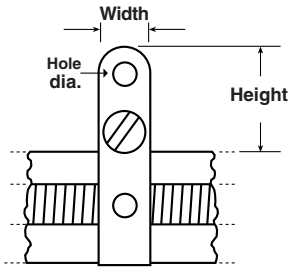


DIMENSIONS	TERMINAL STYLE					
	20	02	05	06	14	15
WIDTH A	0.375 (9.53)	0.188 (4.76)	0.188 (4.76)	0.250 (6.35)	0.188 (4.76)	0.250 (6.35)
HEIGHT B	0.594 (15.09)	0.413 (10.49)	0.413 (10.49)	0.520 (13.21)	0.583 (14.81)	0.657 (16.69)
DIAMETER C	0.204 (5.18)	0.133 (3.38)	0.133 (3.38)	0.172 (4.36)	0.050 (1.27)	0.065 (1.65)
THICKNESS D	0.032 (0.81)	0.020 (0.51)	0.020 (0.51)	0.020 (0.51)	0.020 (0.51)	0.032 (0.81)

Note

- Dimensions are for reference only. Dimensions indicated are without coating

AVT SLIDERS-DIMENSIONS in inches (millimeters)

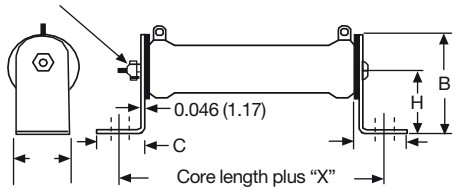


GLOBAL PART NUMBER (1) (RoHS-COMPLIANT)	GLOBAL PART NUMBER FOR EXTRA SLIDERS	SLIDER MODEL TYPE	DIMENSIONS		
			WIDTH	HEIGHT	HOLE DIAMETER
75008602E29	AVT010, AVT020	70	0.187 (4.75)	0.516 (13.11)	0.125 (3.18)
75008603E29	AVT025, AVT25B, AVT050, AVT50A, AVT075	71	0.250 (6.35)	0.719 (18.26)	0.141 (3.58)
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

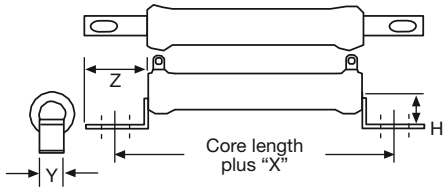
MOUNTING HARDWARE FOR AVT PRODUCTS - Dimensions in inches (millimeters)

91 = 100 Style Horizontal 1 High Bracket



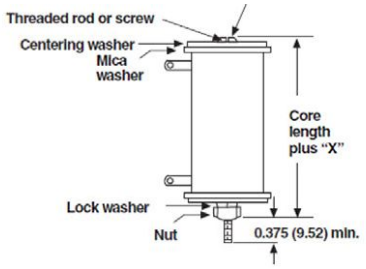
BRACKET TYPE	X	Y	Z	H	MOUNTING SLOT	C	B
101	1.063 (26.99)	0.500 (12.70)	0.950 (24.13)	1.000 (25.40)	0.219 x 0.438 (5.56 x 11.11)	0.750 (19.05)	1.375 (34.93)
102	1.063 (26.99)	0.750 (19.05)	0.859 (21.83)	1.250 (31.75)	0.219 x 0.438 (5.56 x 11.11)	0.750 (19.05)	1.750 (44.75)
103	1.063 (26.99)	1.250 (31.75)	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)

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)

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

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
AVT012	101	202	301
AVT020	101	N/A	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
AVT080	103	207	303
AVT100	102	206	302
AVT130	103	207	302
AVT160	103	207	303
AVT175	103	207	303
AVT200	103	207	303
AVT225	103	207	303

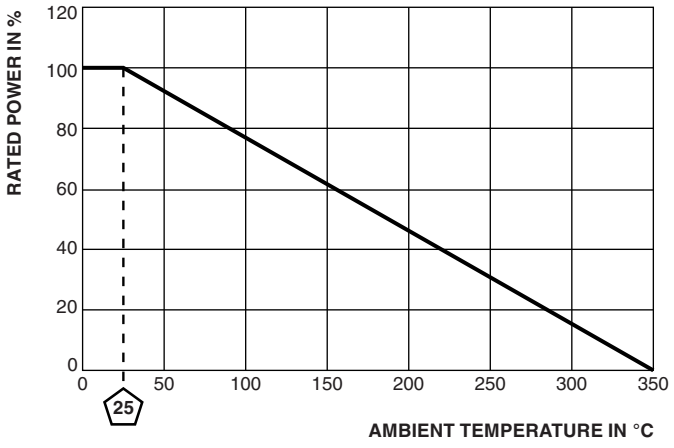
TECHNICAL SPECIFICATIONS

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	-	$(P \times R)^{0.5}$
Insultation Resistance	Ω	1M
Dielectric Voltage	V_{RMS}	1000 V_{AC} from terminal to mounting hardware
Creepage		Varies by wattage, see “Terminal Setback” in Dimensions table
Terminal Sleeves		n/a
Inductance	µH	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

DERATING



Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, “Vishay”), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay's knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Hyperlinks included in this datasheet may direct users to third-party websites. These links are provided as a convenience and for informational purposes only. Inclusion of these hyperlinks does not constitute an endorsement or an approval by Vishay of any of the products, services or opinions of the corporation, organization or individual associated with the third-party website. Vishay disclaims any and all liability and bears no responsibility for the accuracy, legality or content of the third-party website or for that of subsequent links.

Except as expressly indicated in writing, Vishay products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Vishay product could result in personal injury or death. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.