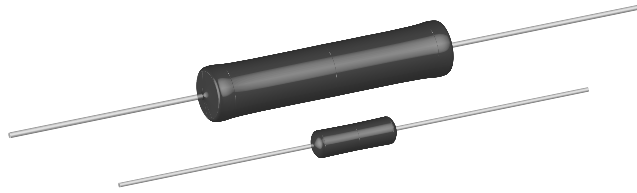


Wirewound Resistors, Industrial, Precision Power, Silicone Coated



FEATURES

- High temperature coating (> 350 °C)
- Complete welded construction
- Meets applicable requirements of MIL-PRF-26
- Available in non-inductive styles (type NS) with Ayrton-Perry winding for lowest reactive components
- Excellent stability in operation (typical resistance shift < 0.5 %)
- MIL-PRF-26 qualified, type RW resistors can be found at: www.vishay.com/doc?30281
- Compliant to RoHS Directive 2002/95/EC



STANDARD ELECTRICAL SPECIFICATIONS									
GLOBAL MODEL	HIST. MODEL	POWER RATING ⁽¹⁾ $P_{25\text{ }^\circ\text{C}} W$ $U \pm 0.05\%$ to $\pm 5\%$	POWER RATING ⁽¹⁾ $P_{25\text{ }^\circ\text{C}} W$ $V \pm 3\%$ to $\pm 10\%$	RESISTANCE RANGE Ω $\pm 0.05\%$	RESISTANCE RANGE Ω $\pm 0.1\%$	RESISTANCE RANGE Ω $\pm 0.25\%$	RESISTANCE RANGE Ω $\pm 0.5\%$, $\pm 1\%$	RESISTANCE RANGE Ω $\pm 3\%$, $\pm 5\%$, $\pm 10\%$	WEIGHT (typical) g
RS1/4	RS-1/4	0.4	-	1 to 1K	0.499 to 1K	0.499 to 3.4K	0.1 to 3.4K	0.1 to 3.4K	0.21
RS1/2	RS-1/2	0.75	-	1 to 1.3K	0.499 to 1.3K	0.499 to 4.9K	0.1 to 4.9K	0.1 to 4.9K	0.23
RS01A	RS-1A	1.0	-	1 to 2.74K	0.499 to 2.74K	0.499 to 10.4K	0.1 to 10.4K	0.1 to 10.4K	0.34
RS01A...300	RS-1A-300	1.0	-	-	0.499 to 2.74K	0.499 to 10.4K	0.1 to 10.4K	0.1 to 10.4K	0.34
RS01M	RS-1M	1.0	-	1 to 1.32K	0.499 to 1.67K	0.499 to 6.85K	0.1 to 6.85K	0.1 to 6.85K	0.30
RS002	RS-2	4.0	5.5	0.499 to 12.7K	0.499 to 12.7K	0.1 to 47.1K	0.1 to 47.1K	0.1 to 47.1K	2.10
RS02M	RS-2M	3.0	-	0.499 to 4.49K	0.499 to 4.49K	0.1 to 18.74K	0.1 to 18.74K	0.1 to 18.74K	0.65
RS02B	RS-2B	3.0	3.75	0.499 to 6.5K	0.499 to 6.5K	0.1 to 24.5K	0.1 to 24.5K	0.1 to 24.5K	0.70
RS02B...300	RS-2B-300	3.0	-	-	0.499 to 6.5K	0.1 to 24.5K	0.1 to 24.5K	0.1 to 24.5K	0.70
RS02C	RS-2C	2.5	3.25	0.499 to 8.6K	0.499 to 8.6K	0.1 to 32.3K	0.1 to 32.3K	0.1 to 32.3K	1.6
RS02C...17	RS-2C-17	2.5	3.25	0.499 to 8.6K	0.499 to 8.6K	0.1 to 32.3K	0.1 to 32.3K	0.1 to 32.3K	1.6
RS02C...23	RS-2C-23	-	3.25	-	-	-	-	0.1 to 32.3K	1.6
RS005	RS-5	5.0	6.5	0.499 to 25.7K	0.499 to 25.7K	0.1 to 95.2K	0.1 to 95.2K	0.1 to 95.2K	4.2
RS005...69	RS-5-69	5.0	-	-	0.499 to 25.7K	0.1 to 95.2K	0.1 to 95.2K	0.1 to 95.2K	4.2
RS005...70	RS-5-70	-	6.5	-	-	-	-	0.1 to 95.2K	4.2
RS007	RS-7	7.0	9.0	0.499 to 41.4K	0.499 to 41.4K	0.1 to 154K	0.1 to 154K	0.1 to 154K	4.7
RS010	RS-10	10.0	13.0	0.499 to 73.4K	0.499 to 73.4K	0.1 to 273K	0.1 to 273K	0.1 to 273K	9.0
RS010...38	RS-10-38	10.0	-	-	0.499 to 73.4K	0.1 to 273K	0.1 to 273K	0.1 to 273K	9.0
RS010...39	RS-10-39	-	13.0	-	-	-	-	0.1 to 273K	9.0

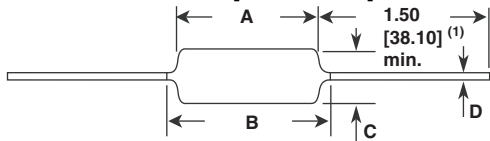
Notes

- Models are not available lead (Pb)-free: RS01A...300, RS02B...300, RS02C...17, RS02C...23, RS005...69, RS005...70, RS010...38, RS010...39
- Shaded area indicates most popular models
- Vishay Dale RS models have two power ratings depending on operation temperature and stability requirements

GLOBAL PART NUMBER INFORMATION																
Global Part Numbering example: RS02C10K00FS7017																
R	S	0	2	C	1	0	K	0	0	F	S	7	0	1	7	
GLOBAL MODEL (See Standard Electrical Specifications Global Model column for options)	RESISTANCE VALUE R = Decimal K = Thousand 15R00 = 15 Ω 10K00 = 10 k Ω	TOLERANCE CODE A = 0.05 % B = 0.1 % C = 0.25 % D = 0.5 % F = 1.0 % J = 5.0 % K = 10.0 %		PACKAGING E70 = Lead (Pb)-free, tape/reel (smaller than RS005) E73 = Lead (Pb)-free, tape/reel (RS005 and larger) E12 = Lead (Pb)-free, bulk S70 = Tin/lead, tape/reel (smaller than RS005) S73 = Tin/lead, tape/reel (RS005 and larger) B12 = Tin/lead, bulk				SPECIAL (Dash Number) (up to 3 digits) From 1 to 999 as applicable								
Historical Part Numbering example: RS-2C-17 10 k Ω 1 % S70																
RS-2C-17 HISTORICAL MODEL		10 k Ω RESISTANCE VALUE		1 % TOLERANCE CODE		S70 PACKAGING										

* Pb containing terminations are not RoHS compliant, exemptions may apply
 ** Please see document "Vishay Material Category Policy": www.vishay.com/doc?99902

DIMENSIONS in inches [millimeters]



Note

(1) On some standard reel pack methods, the leads may be trimmed to a shorter length than shown

MATERIAL SPECIFICATIONS

Element: Copper-nickel alloy or nickel-chrome alloy, depending on resistance value

Core: Ceramic, steatite or alumina, depending on physical size

Coating: Special high temperature silicone

Standard Terminals: 100 % Sn, or 60/40 Sn/Pb coated Copperweld®

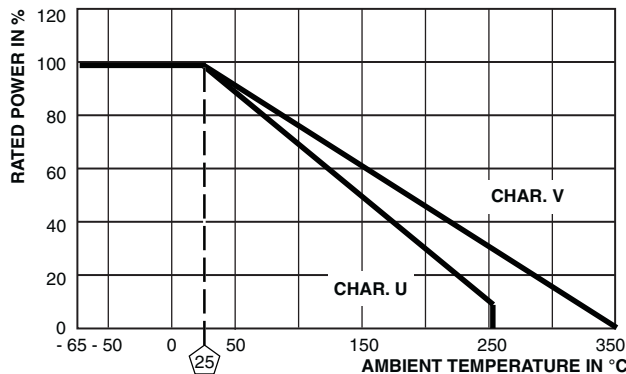
End Caps: Stainless steel

Part Marking: DALE, model, wattage (2), value, tolerance, date code

Note

(2) Wattage marked on part will be "U" characteristic

DERATING



GLOBAL MODEL	DIMENSIONS in inches [millimeters]			
	A	B (3) (max.)	C	D
RS1/4	0.250 ± 0.031 [6.35 ± 0.787]	0.281 [7.14]	0.085 ± 0.020 [2.16 ± 0.508]	0.020 ± 0.002 [0.508 ± 0.051]
RS1/2	0.312 ± 0.016 [7.92 ± 0.406]	0.328 [8.33]	0.078 + 0.016 - 0.031 [1.98 + 0.406 - 0.787]	0.020 ± 0.002 [0.508 ± 0.051]
RS01A RS01A...300	0.406 ± 0.031 [10.31 ± 0.787]	0.437 [11.10]	0.094 ± 0.031 [2.39 ± 0.787]	0.020 ± 0.002 [0.508 ± 0.051]
RS01M	0.285 ± 0.025 [7.24 ± 0.635]	0.311 [7.90]	0.110 ± 0.015 [2.79 ± 0.381]	0.020 ± 0.002 [0.508 ± 0.051]
RS002	0.625 ± 0.062 [15.88 ± 1.57]	0.765 [19.43]	0.250 ± 0.031 [6.35 ± 0.787]	0.040 ± 0.002 [1.02 ± 0.051]
RS02M	0.500 ± 0.062 [12.70 ± 1.57]	0.562 [14.27]	0.185 ± 0.015 [4.70 ± 0.381]	0.032 ± 0.002 [0.813 ± 0.051]
RS02B RS02B...300	0.560 ± 0.062 [14.22 ± 1.57]	0.622 [15.80]	0.187 ± 0.031 [4.75 ± 0.787]	0.032 ± 0.002 [0.813 ± 0.051]
RS02C	0.500 ± 0.062 [12.70 ± 1.57]	0.593 [15.06]	0.218 ± 0.031 [5.54 ± 0.787]	0.040 ± 0.002 [1.02 ± 0.051]
RS02C...17 RS02C...23	0.500 ± 0.062 [12.70 ± 1.57]	0.593 [15.06]	0.218 ± 0.031 [5.54 ± 0.787]	0.032 ± 0.002 [0.813 ± 0.051]
RS005 RS005...69 RS005...70	0.875 ± 0.062 [22.23 ± 1.57]	1.0 [25.4]	0.312 ± 0.031 [7.92 ± 0.787]	0.040 ± 0.002 [1.02 ± 0.051]
RS007	1.22 ± 0.062 [30.99 ± 1.57]	1.28 [32.51]	0.312 ± 0.031 [7.92 ± 0.787]	0.040 ± 0.002 [1.02 ± 0.051]
RS010 RS010...39	1.78 ± 0.062 [45.21 ± 1.57]	1.87 [47.50]	0.375 ± 0.031 [9.53 ± 0.787]	0.040 ± 0.002 [1.02 ± 0.051]
RS010...38	1.78 ± 0.062 [45.21 ± 1.57]	1.84 [46.74]	0.375 ± 0.031 [9.53 ± 0.787]	0.040 ± 0.002 [1.02 ± 0.051]

Note

(3) B (max.) dimension is clean lead to clean lead

NS NON-INDUCTIVE

Models of equivalent physical and electrical specifications are available with non-inductive (Aryton-Perry) winding. They are identified by substituting the letter N for R in the model number (NS005, for example).

Two conditions apply:

1. For NS models, divide maximum resistance values by two
2. Body O.D. on NS02C may exceed that of the RS02C by 010"

TECHNICAL SPECIFICATIONS

PARAMETER	UNIT	RS RESISTOR CHARACTERISTICS
Temperature Coefficient	ppm/°C	± 20 for 10 Ω and above, ± 50 for 1 Ω to 9.9 Ω, ± 90 for below 1 Ω
Maximum Working Voltage	V	(P x R) ^{1/2}
Insulation Resistance	Ω	1000 MΩ minimum dry, 100 MΩ minimum after moisture test
Operating Temperature Range	°C	Characteristic U = - 65 to + 250, characteristic V = - 65 to + 350

PERFORMANCE

TEST	CONDITIONS OF TEST	TEST LIMITS	
		CHARACTERISTIC U	CHARACTERISTIC V
Thermal Shock	Rated power applied until thermally stable, then a minimum of 15 min at - 55 °C	± (0.2 % + 0.05 Ω) ΔR	± (2.0 % + 0.05 Ω) ΔR
Short Time Overload	5 x rated power (3.75 W and smaller), 10 x rated power (4 W and larger) for 5 s	± (0.2 % + 0.05 Ω) ΔR	± (2.0 % + 0.05 Ω) ΔR
Dielectric Withstanding Voltage	500 V _{RMS} min. for RS1/4 thru RS01A, 1000 V _{RMS} for all others, duration of 1 min	± (0.1 % + 0.05 Ω) ΔR	± (0.1 % + 0.05 Ω) ΔR
Low Temperature Storage	- 65 °C for 24 h	± (0.2 % + 0.05 Ω) ΔR	± (2.0 % + 0.05 Ω) ΔR
High Temperature Exposure	250 h at: U = + 250 °C, V = + 350 °C	± (0.5 % + 0.05 Ω) ΔR	± (2.0 % + 0.05 Ω) ΔR
Moisture Resistance	MIL-STD-202 Method 106, 7b not applicable	± (0.2 % + 0.05 Ω) ΔR	± (2.0 % + 0.05 Ω) ΔR
Shock, Specified Pulse	MIL-STD-202 Method 213, 100 g's for 6 ms, 10 shocks	± (0.1 % + 0.05 Ω) ΔR	± (0.2 % + 0.05 Ω) ΔR
Vibration, High Frequency	Frequency varied 10 Hz to 2000 Hz, 20 g peak, 2 directions 6 h each	± (0.1 % + 0.05 Ω) ΔR	± (0.2 % + 0.05 Ω) ΔR
Load Life	2000 h at rated power, + 25 °C, 1.5 h "ON", 0.5 h "OFF"	± (0.5 % + 0.05 Ω) ΔR	± (3.0 % + 0.05 Ω) ΔR
Terminal Strength	Pull test 5 s to 10 s, 5 lb (RS1/4 thru RS01A), 10 lb for all others; torsion test - 3 alternating directions, 360° each	± (0.1 % + 0.05 Ω) ΔR	± (1.0 % + 0.05 Ω) ΔR



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.

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 and agree to fully indemnify and hold Vishay and its distributors harmless from and against any and all claims, liabilities, expenses and damages arising or resulting in connection with such use or sale, including attorneys fees, even if such claim alleges that Vishay or its distributor was negligent regarding the design or manufacture of the part. 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.