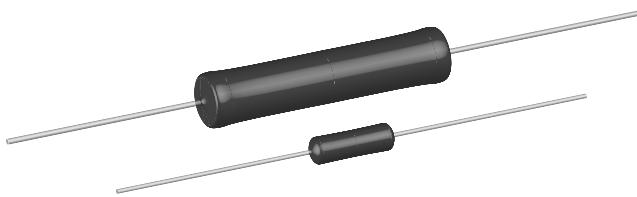


Wirewound Resistors, Industrial, Precision Power, Silicone Coated, Axial Lead


Notes

* Pb containing terminations are not RoHS compliant, exemptions may apply

** Please see document "Vishay Material Category Policy": www.vishay.com/doc?99902

FEATURES

- High temperature coating (> 350 °C)
- Complete welded construction
- Meets applicable requirements of MIL-PRF-26
- Available in non-inductive styles (type NS) with Aryton-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


RoHS*
COMPLIANT
GREEN**
*(IS-2008)****
Available
STANDARD ELECTRICAL SPECIFICATIONS

GLOBAL MODEL	HIST. MODEL	POWER RATING ⁽¹⁾ $P_{25\text{ °C}} = 0.4 \text{ W}$ $U = \pm 0.05\%$ to $\pm 5\%$	POWER RATING ⁽¹⁾ $P_{25\text{ °C}} = 0.75 \text{ W}$ $V = \pm 3\%$ to $\pm 10\%$	RESISTANCE RANGE $\pm 0.05\%$	RESISTANCE RANGE $\pm 0.1\%$	RESISTANCE RANGE $\pm 0.25\%$	RESISTANCE RANGE $\pm 0.5\%$, $\pm 1\%$	RESISTANCE RANGE $\pm 3\%$, $\pm 5\%$, $\pm 10\%$	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 not available as lead (Pb)-free: RS01A...300, RS02B...300, RS02C...23, RS005...69, RS005...70, RS010...38, RS010...39

• Shaded area indicates most popular models

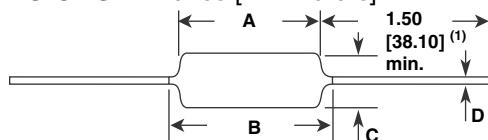
(1) Vishay Dale RS models have two power ratings depending on operation temperature and stability requirements. Models not available for characteristic V are: RS1/4, RS1/2, RS01A, RS01A...300, RS01M, RS02M, RS02B...300, RS005...69, and RS010...38

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 $R = \text{Decimal}$ $K = \text{Thousand}$ $15R00 = 15 \Omega$ $10K00 = 10 \text{ k}\Omega$	TOLERANCE CODE $A = 0.05\%$ $B = 0.1\%$ $C = 0.25\%$ $D = 0.5\%$ $F = 1.0\%$ $J = 5.0\%$ $K = 10.0\%$	PACKAGING $E70 = \text{Lead (Pb)-free, tape/reel (smaller than RS005)}$ $E73 = \text{Lead (Pb)-free, tape/reel (RS005 and larger)}$ $E12 = \text{Lead (Pb)-free, bulk}$	SPECIAL (Dash Number) (up to 3 digits) From 1 to 999 as applicable												

Historical Part Numbering example: RS-2C-17 10 kΩ 1% S70

RS-2C-17	10 kΩ	1%	S70
HISTORICAL MODEL	RESISTANCE VALUE	TOLERANCE CODE	PACKAGING

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

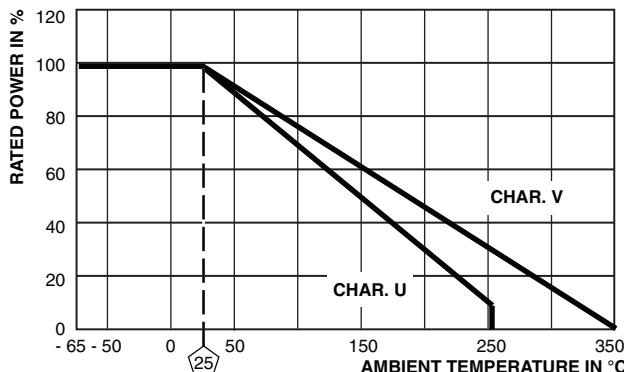
Standard Terminals: 100 % Sn, or 60/40 Sn/Pb coated Copperweld®

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	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]
RS01A...300				
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	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]
RS02B...300				
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	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]
RS02C...23				
RS005	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]
RS005...69				
RS005...70				
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	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...39				
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 0.010"

TECHNICAL SPECIFICATIONS

PARAMETER	UNIT	RS RESISTOR CHARACTERISTICS	
		CHARACTERISTIC U	CHARACTERISTIC V
Temperature Coefficient	ppm/°C	± 20 for 10 Ω and above, ± 50 for 1 Ω to 9.9 Ω, ± 90 for 0.5 Ω to 0.99 Ω	
Maximum Working Voltage	V	$(P \times R)^{1/2}$	
Insulation Resistance	Ω	1000 MΩ minimum dry, 100 MΩ minimum after moisture test	
Operating Temperature Range	°C	Characterisitic 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

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