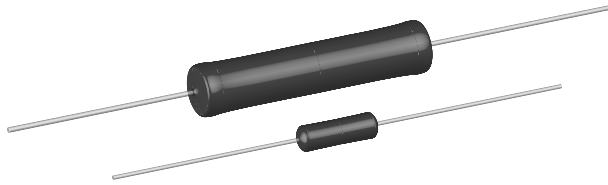


# Wirewound Resistors, Military, MIL-PRF-26 Qualified, Type RW, Precision Power, Silicone Coated



### FEATURES

- High temperature coating
- 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
- Lead (Pb)-Free version is RoHS Compliant



RoHS\*  
COMPLIANT

### STANDARD ELECTRICAL SPECIFICATIONS

GLOBAL MODEL	HISTORICAL MODEL	MIL-PRF-26 TYPE	POWER RATING**** P <sub>25°C</sub> W		RESISTANCE RANGE MIL. RANGE SHOWN IN BOLD FACE Ω					WEIGHT (Typical) g
			U ± 0.05% thru ± 5%	V ± 3% thru ± 10%	± 0.05%	± 0.1%	± 0.25%	± 0.5% & ± 1%	± 3%, ± 5%, ± 10%	
RS1/8	RS-18	—	0.125	—	—	—	—	0.1 - 950	0.1 - 950	0.15
RS1/4	RS-1/4	—	0.4	—	1 - 1k	0.499 - 1k	0.499 - 3.4k	0.1 - 3.4k	0.1 - 3.4k	0.21
RS1/2	RS-1/2	—	0.75	—	1 - 1.3k	0.499 - 1.3k	0.499 - 4.9k	0.1 - 4.9k	0.1 - 4.9k	0.23
RS01A	RS-1A	—	1.0	—	1 - 2.74k	0.499 - 2.74k	0.499 - 10.4k	0.1 - 10.4k	0.1 - 10.4k	0.34
RS01A...300	RS-1A-300	<b>RW70***</b>	1.0 1.0	—	—	0.499 - 2.74k	0.499 - 10.4k	0.1 - 10.4k <b>0.1 - 2.74k</b>	0.1 - 10.4k	0.34
RS01M	RS-1M	—	1.0	—	1 - 1.32k	0.499 - 1.67k	0.499 - 6.85k	0.1 - 6.85k	0.1 - 6.85k	0.30
RS002	RS-2	—	4.0	5.5	0.499 - 12.7k	0.499 - 12.7k	0.1 - 47.1k	0.1 - 47.1k	0.1 - 47.1k	2.10
RS02M	RS-2M	—	3.0	—	0.499 - 4.49k	0.499 - 4.49k	0.1 - 18.74k	0.1 - 18.74k	0.1 - 18.74k	0.65
RS02B	RS-2B	—	3.0	3.75	0.499 - 6.5k	0.499 - 6.5k	0.1 - 24.5k	0.1 - 24.5k	0.1 - 24.5k	0.70
RS02B...300	RS-2B-300	<b>RW79***</b>	3.0 3.0	—	—	0.499 - 6.5k	0.1 - 24.5k	0.1 - 24.5k <b>0.1 - 6.49k</b>	0.1 - 24.5k	0.70
RS02C	RS-2C	—	2.5	3.25	0.499 - 8.6k	0.499 - 8.6k	0.1 - 32.3k	0.1 - 32.3k	0.1 - 32.3k	1.6
RS02C...17	RS-2C-17	—	2.5	3.25	0.499 - 8.6k	0.499 - 8.6k	0.1 - 32.3k	0.1 - 32.3k	0.1 - 32.3k	1.6
RS02C...23	RS-2C-23	<b>RW69**</b>	—	3.25 3.0	—	—	—	—	0.1 - 32.3k <b>0.1 - 2.0k</b>	16
RS005	RS-5	—	5.0	6.5	0.499 - 25.7k	0.499 - 25.7k	0.1 - 95.2k	0.1 - 95.2k	0.1 - 95.2k	4.2
RS005...69	RS-5-69	<b>RW74***</b>	5.0 5.0	—	—	0.499 - 25.7k	0.1 - 95.2k	0.1 - 95.2k <b>0.1 - 24.3k</b>	0.1 - 95.2k	4.2
RS005...70	RS-5-70	<b>RW67**</b>	—	6.5 6.5	—	—	—	—	0.1 - 95.2k <b>0.1 - 8.2k</b>	4.2
RS007	RS-7	—	7.0	9.0	0.499 - 41.4k	0.499 - 41.4k	0.1 - 154k	0.1 - 154k	0.1 - 154k	4.7
RS010	RS-10	—	10.0	13.0	0.499 - 73.4k	0.499 - 73.4k	0.1 - 273k	0.1 - 273k	0.1 - 273k	9.0
RS010...38	RS-10-38	<b>RW78***</b>	10.0 10.0	—	—	0.499 - 73.4k	0.1 - 273k	0.1 - 273k <b>0.1 - 71.5k</b>	0.1 - 273k	9.0
RS010...39	RS-10-39	<b>RW68**</b>	—	13.0 11.0	—	—	—	—	0.1 - 273k <b>0.1 - 20k</b>	9.0

\*\* Available tolerance for these Mil parts is ± 5% for 1Ω and above, ± 10% below 1Ω.

\*\*\* Available tolerance for these Mil parts is ± 0.5% & ± 1% for resistance values 0.1Ω and above, ± 0.1% for resistance values 0.499Ω and above..

\*\*\*\* Vishay Dale RS models have two power ratings depending on operation temperature and stability requirements.

NOTE: Shaded area indicates most popular models.

### GLOBAL PART NUMBER INFORMATION

New Global Part Numbering: RS02C10K00FS7017 (preferred part numbering format)

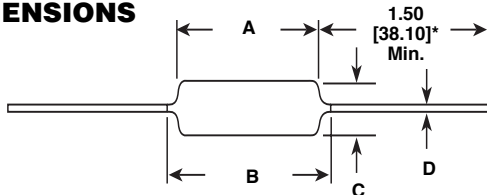
R S 0 2 C 1 0 K 0 0 F S 7 0 1 7

GLOBAL MODEL	RESISTANCE VALUE	TOLERANCE CODE	PACKAGING	SPECIAL
RS02C	R = Decimal K = Thousand 15R00 = 15Ω 10K00 = 10KΩ	A = ± 0.05% B = ± 0.1% C = ± 0.25% D = ± 0.5% F = ± 1.0% J = ± 5.0% K = 10.0%	*E70 = Lead Free, Tape/Reel (smaller than RS005) *E73 = Lead Free, Tape/Reel (RS005 & larger) *E12 = Lead Free, Bulk <b>Lead Free is not available on RW military type</b> *(Lead Free parts to be released Q1 2005) S70 = Tin/Lead, Tape/Reel (smaller than RS005) S73 = Tin/Lead, Tape/Reel (RS005 & larger) B12 = Tin/Lead, Bulk	(Dash Number) (up to 3 digits) From 1-999 as applicable

Historical Part Number example: RS-2C-17 10KΩ 1% S70 (will continue to be accepted)

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

\* Pb containing terminations are not RoHs compliant, exemptions may apply

**Wirewound Resistors, Military, MIL-PRF-26 Qualified,  
Type RW, Precision Power, Silicone Coated**
**Vishay Dale**
**DIMENSIONS**


\*On some standard reel pack methods, the leads may be trimmed to a shorter length than shown.

**NOTE:** RS-1/8 terminal length will be 1.0" [25.4mm] minimum.

**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®.

**NOTE:** Military "RW" parts are only available with 60/40 Sn/Pb finish.

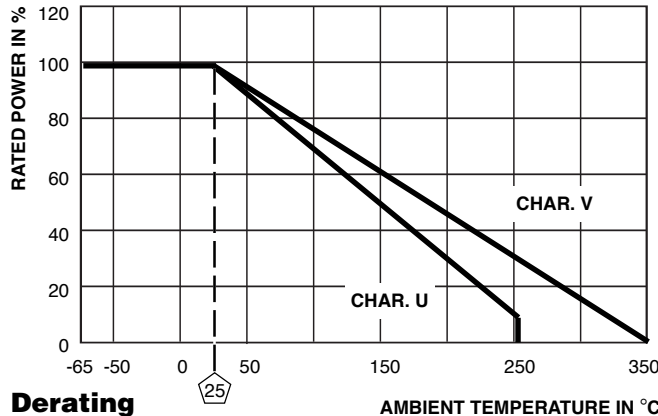
**End Caps:** Stainless steel

**Deviations for RS-1/8:** Thermoset silicone molded construction,

endcaps will be nickel-silver alloy and terminals will be tinned copper

**Part Marking:** DALE, Model, Wattage\*, Value, Tolerance, Date Code

\*Wattage marked on part will be "U" characteristic


**Derating**
**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 (NS-5, for example).

GLOBAL MODEL	DIMENSIONS in inches [millimeters]			
	A	B (Max.)**	C	D
RS1/8	0.155 ± 0.015 [3.94 ± 0.381]	—	0.065 ± 0.015 [1.65 ± 0.381]	0.020 ± 0.002 [0.508 ± 0.051]
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]

\*\*B (Max.) dimension is clean lead to clean lead.

Two conditions apply:

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

TECHNICAL SPECIFICATIONS		
PARAMETER	UNIT	RS RESISTOR CHARACTERISTICS
Temperature Coefficient	ppm/°C	± 90 for below 1 Ω, ± 50 for 1 Ω to 9.9 Ω, ± 20 for 10 Ω and above
Dielectric Withstanding Voltage	V <sub>AC</sub>	500 minimum for RS-1/8 thru RS-1A, 1000 minimum for all others
Maximum Working Voltage	V	(P x R) <sup>1/2</sup>
Insulation Resistance	Ω	1000 Megohm minimum dry, 100 Megohm minimum after moisture test
Terminal Strength	lb	5 minimum for RS-1/8 thru RS-1A, 10 minimum for all others
Solderability	—	MIL-PRF-26 type - Meets requirements of ANSI J-STD-002
Operating Temperature Range	°C	Characteristic U = - 65/+ 250, Characteristic V = - 65/+ 350

PERFORMANCE*			
TEST	CONDITIONS OF TEST	TEST LIMITS	
		Characteristic U	Characteristic V
Thermal Shock	Rated power applied until thermally stable, then a min. of 15 minutes at - 55°C	± (0.2% + 0.05Ω) ΔR	± (2.0% + 0.05Ω) ΔR
Short Time Overload	5 x rated power (3.75 watt and smaller), 10 x rated power (4 watt and larger) for 5 seconds	± (0.2% + 0.05Ω) ΔR	± (2.0% + 0.05Ω) ΔR
Dielectric Withstanding Voltage	500 minimum for RS-1/8 thru RS-1A, 1000 for all others, duration of 1 minute	± (0.1% + 0.05Ω) ΔR	± (0.1% + 0.05Ω) ΔR
Low Temperature Storage	- 65°C for 24 hours	± (0.2% + 0.05Ω) ΔR	± (2.0% + 0.05Ω) ΔR
High Temperature Exposure	250 hours at: U = + 250°C, V = + 350°C	± (0.5% + 0.05Ω) ΔR	± (2.0% + 0.05Ω) ΔR
Moisture Resistance	MIL-STD-202 Method 106, 7b not applicable	± (0.2% + 0.05Ω) ΔR	± (2.0% + 0.05Ω) ΔR
Shock, Specified Pulse	MIL-STD-202 Method 213, 100g's for 6 milliseconds, 10 shocks	± (0.1% + 0.05Ω) ΔR	± (0.2% + 0.05Ω) ΔR
Vibration, High Frequency	Frequency varied 10 to 2000Hz, 20g peak, 2 directions 6 hours each	± (0.1% + 0.05Ω) ΔR	± (0.2% + 0.05Ω) ΔR
Load Life	2000 hours at rated power, + 25°C, 1.5 hours "ON", 0.5 hours "OFF"	± (0.5% + 0.05Ω) ΔR	± (3.0% + 0.05Ω) ΔR
Terminal Strength	5 to 10 sec., 5 or 10 lb pull test (depending on size), torsion test - 3 alternating directions, 360° each	± (0.1% + 0.05Ω) ΔR	± (1.0% + 0.05Ω) ΔR

\*All ΔR figures shown are maximum, based upon testing requirements per MIL-PRF-26.

### MILITARY PART ORDERING EXAMPLES

To help in ordering, the following are examples of military part numbers cross-referenced to Vishay Dale part numbers. For complete information on military part numbering, consult the specific military specification.

#### WIREWOUND RESISTORS:

**MIL-PRF-26** (Basic [RW]) (Established Reliability alternate MIL-PRF-39007 [RWR])

**RW Type**

**Vishay Dale Type**

**RW80**   **U**   **49R9**   **F**   ⇒   **G-3**   **49.9Ω**   **1%**

1   2   3   4   ⇒   1   3   4

**RW67**   **V**   **101**   ⇒   **RS-5-70**   **100Ω**   **5%**

1   2   3   ⇒   1   3   4

1. Style
2. Characteristic
3. Resistance Value\*
4. Tolerance

**MIL-PRF-18546** (Basic [RE]) (Established Reliability alternate MIL-PRF-39009 [RER])

**RE Type**

**Vishay Dale Type**

**RE65**   **G**   **1001**   ⇒   **RH-10**   **1kΩ**   **1%**

1   2   3   ⇒   1   3   4

1. Style
2. Characteristic
3. Resistance Value\*
4. Tolerance

**MIL-PRF-39007** (Established Reliability [RWR]) (Basic is MIL-PRF-26 [RW])

**RWR Type**

**Vishay Dale Type**

**RWR74**   **S**   **10R1**   **F**   **R**   ⇒   **ESS-5**   **10.1Ω**   **1%**   **R**

1   2   3   4   5   ⇒   1   3   4   5

1. Style
2. Characteristic
3. Resistance Value\*
4. Tolerance
5. Failure Rate Level

**MIL-PRF-39009** (Established Reliability [RER]) (Basic is MIL-PRF-18549 [RE])

**RER Type**

**Vishay Dale Type**

**RER65**   **F**   **1001**   **R**   ⇒   **ERH-10**   **1kΩ**   **1%**   **R**

1   3   2   4   ⇒   1   2   3   4

1. Style
2. Resistance Value
3. Tolerance
4. Failure Rate Level

**MIL-PRF-49465** (Basic [RLV]) (Established Reliability-None)

**RLV Type**

**Vishay Dale Type**

**M49465**   **06**   **I**   **R0100**   **F**   ⇒   **LVR-3-26**   **0.01Ω**   **1%**

1   2   3   4   5   ⇒   1   4   5

1. Style
2. Specification Sheet Number
3. Characteristic
4. Resistance Value\*
5. Tolerance

\*See the following page for Military decade resistance table.



<b>STANDARD RESISTANCE VALUES FOR THE 10 TO 100 DECADE</b>							
* (B) 0.1 (D) 0.5	(F) 1.0	* (B) 0.1 (D) 0.5	(F) 1.0	* (B) 0.1 (D) 0.5	(F) 1.0	* (B) 0.1 (D) 0.5	(F) 1.0
10.0	10.0	17.8	17.8	31.6	31.6	56.2	56.2
10.1		18.0	18.0	32.0		56.9	
10.2	10.2	18.2	18.2	32.4	32.4	57.6	57.6
10.4		18.4		32.8		58.3	
10.5	10.5	18.7	18.7	33.2	33.2	59.0	59.0
10.6		18.9		33.6		59.7	
10.7	10.7	19.1	19.1	34.0	34.0	60.4	60.4
10.9		19.3		34.4		61.2	
11.0	11.0	19.6	19.6	34.8	34.8	61.9	61.9
11.1		19.8		35.2		62.6	
11.3	11.3	20.0	20.0	35.7	35.7	63.4	63.4
11.4		20.3		36.1		64.2	
11.5	11.5	20.5	20.5	36.5	36.5	64.9	64.9
11.7		20.8		37.0		65.7	
11.8	11.8	21.0	21.0	37.4	37.4	66.5	66.5
12.0		21.3		37.9		67.3	
12.1	12.1	21.5	21.5	38.3	38.3	68.1	68.1
12.3		21.8		38.8		69.0	
12.4	12.4	22.1	22.1	39.2	39.2	69.8	69.8
12.6		22.3		39.7		70.6	
12.7	12.7	22.6	22.6	40.2	40.2	71.5	71.5
12.9		22.9		40.7		72.3	
13.0	13.0	23.2	23.2	41.2	41.2	73.2	73.2
13.2		23.4		41.7		74.1	
13.3	13.3	23.7	23.7	42.2	42.2	75.0	75.0
13.5		24.0		42.7		75.9	
13.7	13.7	24.3	24.3	43.2	43.2	76.8	76.8
13.8		24.6		43.7		77.7	
14.0	14.0	24.9	24.9	44.2	44.2	78.7	78.7
14.2		25.2		44.8		79.6	
14.3	14.3	25.5	25.5	45.3	45.3	80.6	80.6
14.5		25.8		45.9		81.6	
14.7	14.7	26.1	26.1	46.4	46.4	82.5	82.5
14.9		26.4		47.0		83.5	
15.0	15.0	26.7	26.7	47.5	47.5	84.5	84.5
15.2		27.1		48.1		85.6	
15.4	15.4	27.4	27.4	48.7	48.7	86.6	86.6
15.6		27.7		49.3		87.6	
15.8	15.8	28.0	28.0	49.9	49.9	88.7	88.7
16.0		28.4		50.5		89.8	
16.2	16.2	28.7	28.7	51.1	51.1	90.9	90.9
16.4		29.1		51.7		92.0	
16.5	16.5	29.4	29.4	52.3	52.3	93.1	93.1
16.7		29.8		53.0		94.2	
16.9	16.9	30.1	30.1	53.6	53.6	95.3	95.3
17.2		30.5		54.2		96.5	
17.4	17.4	30.9	30.9	54.9	54.9	97.6	97.6
17.6		31.2		55.6		98.8	

\* Listing of resistance values for the B and D tolerance does not guarantee that all of these resistance values are available for all resistor models.

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