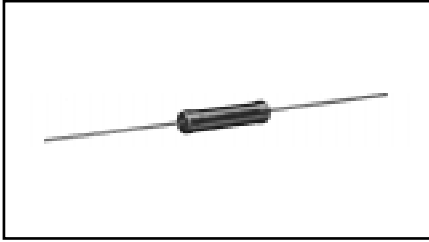




MODEL RS Wirewound Resistors

*Military, MIL-R-26 Qualified, Type RW
Precision Power, Silicone Coated*



FEATURES

- Complete welded construction
- High-temperature silicone coating
- Meets applicable requirements of MIL-R-26
- Available in non-inductive styles (Type NS) with Aryton-Perry winding for lowest reactive components
- Over 44 million unit-hours of testing with no catastrophic failures have proven failure rate of less than 0.0066% per 1000 hours (at 60% confidence) with full rated power at + 25°C. A failure is defined as $\pm 1\%$ resistance change.

STANDARD ELECTRICAL SPECIFICATIONS

DALE MODEL	MIL-R-26 TYPE	DALE RATING		RESISTANCE RANGE (Ohms) MIL. RANGE SHOWN IN BOLD FACE				MAXIMUM * WORKING VOLTAGE		WEIGHT (Grams)
		U ±.05% thru ±5%	V ±3% & ±5%	±.05%	±.1%	±.25%	±.5%, ±1% ±3%, ±5%	U	V	
RS-1/8	—	.125 W	—	—	—	—	.1 - 1.4k	8.5	—	.15
RS-1/4	—	.4 W	—	1 - 1k	.499 - 1k	.499 - 3.4k	.1 - 3.4k	20	—	.21
RS-1/2	—	.75 W	—	1 - 1.3k	.499 - 1.3k	.499 - 4.9k	.1 - 4.9k	29	—	.23
RS-1A	—	1.0 W	—	1 - 2.74k	.499 - 2.74k	.499 - 10.4k	.1 - 10.4k	52	—	.34
RS-1A-300	RW70	1.0 W	—	—	.499 - 2.74k	.499 - 2.74k	.1 - 2.74k	—	—	—
RS-1M	—	1.0W	—	1 - 1.32k	.499 - 1.67k	.499 - 6.85k	.1 - 6.85k	41	—	.30
RS-2	—	4.0 W	5.5 W	.499 - 12.7k	.499 - 12.7k	.1 - 47.1k	.1 - 47.1k	210	250	2.10
RS-2M	—	3.0W	—	.499 - 4.49k	.499 - 4.49k	.1 - 18.74k	.1 - 18.74k	95	—	.65
RS-2B	—	3.0 W	3.75 W	.499 - 6.5k	.499 - 6.5k	.1 - 24.5k	.1 - 24.5k	140	157	.70
RS-2B-300	RW79	3.0 W	—	—	.499 - 6.49k	.1 - 6.49k	.1 - 6.49k	—	—	—
RS-2C	—	2.5 W	3.25 W	.499 - 8.6k	.499 - 8.6k	.1 - 32.3k	.1 - 32.3k	138	157	1.6
RS-2C-17	—	2.5 W	3.25 W	.499 - 6.8k	.499 - 8.6k	.1 - 32.3k	.1 - 32.3k	138	157	1.6
RS-2C-23**	RW69	2.5 W	3.25 W	—	—	—	.1 - 2.0k	130	150	1.6
RS-5	—	5.0 W	6.5 W	.499 - 25.7k	.499 - 25.7k	.1 - 95.2k	.1 - 95.2k	360	410	4.2
RS-5-69	RW74	5.0 W	—	—	.499 - 24.3k	.1 - 24.3k	.1 - 24.3k	—	—	—
RS-5-70**	RW67	5.0 W	6.5 W	—	—	—	.1 - 8.5k	320	365	4.2
RS-7	—	7.0 W	9.0 W	.499 - 41.4k	.499 - 41.4k	.1 - 154k	.1 - 154k	504	576	4.7
RS-10	—	10.0 W	13.0 W	.499 - 73.4k	.499 - 73.4k	.1 - 273k	.1 - 273k	858	978	9.0
RS-10-38	RW78	10.0 W	—	—	.499 - 71.5k	.1 - 71.5k	.1 - 71.5k	—	—	—
RS-10-39**	RW68	10.0 W	13.0 W	—	—	—	.1 - 20k	765	875	9.0

* Maximum working voltage determined at .0008" [.020mm] diameter wire resistance values. ** Standard tolerance is $\pm 5\%$.1 ohm and above, $\pm 10\%$ below 1 ohm. $\pm 3\%$ available. **Note:** Shaded area indicates most popular models.

ELECTRICAL SPECIFICATIONS

Resistance Tolerance: $\pm .05\%$, $\pm .1\%$, $\pm .25\%$, $\pm .5\%$, $\pm 1\%$, $\pm 3\%$, $\pm 5\%$.

Temperature Coefficient: $\pm 90\text{PPM}/^\circ\text{C}$, below 1 ohm. $\pm 50\text{PPM}/^\circ\text{C}$, 1 ohm - 9.9 ohm. $\pm 20\text{PPM}/^\circ\text{C}$, 10 ohm and above. (Consult factory for special TC requirements.)

Dielectric Strength: 500 VAC for RS-1/8 through RS-1A models. 1000 volts for all others.

Insulation Resistance: 1000 Megohm minimum dry. 100 Megohm minimum after moisture test.

Short Time Overload: 5 seconds at 5 times rated power for 3.25 watt size and smaller. 5 seconds at 10 times rated power for 4 watt size and larger.

MECHANICAL SPECIFICATIONS

Solderability: MIL-R-26 Type - Meets requirements of MIL-STD-202, Method 208. Standard RS (Non-MIL Styles) - 60/40 electro tin plated terminals to facilitate soldering.

Terminal Strength: 5 pound pull test = RS-1/8 thru RS-1A models. 10 pound pull test = all others.

MATERIAL SPECIFICATIONS

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

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

End Caps: Stainless steel.

Coating: Special high temperature silicone.

Standard Terminals: Tinned Copperweld®.

Weldable Leads: Weldable lead materials are available from Dale® on a standard stocking basis and can be specified by adding the dash number shown below to the standard part number. Consult factory for charges on special lead materials. Grade "A" Nickel, untinned -53 (Example: RS-1A-53).

Deviations for RS-1/8: Endcaps will be nickel-silver alloy and terminals will be tinned copper.

DIMENSIONAL CONFIGURATIONS				
[Numbers in brackets indicate millimeters]				
MODEL	A	B (Max.)	C	D ± .002 [.051]
RS-1/8	.155 ± .015 [3.94 ± .381]	.170 [4.32]	.065 ± .015 [1.65 ± .381]	.020 [.508]*
RS-1/4	.250 ± .031 [6.35 ± .787]	.281 [7.14]	.085 ± .020 [2.16 ± .508]	.020 [.508]
RS-1/2	.312 ± .016 [7.92 ± .406]	.328 [8.33]	.078 ± .016 - .031 [1.98 ± .406 - .787]	.020 [.508]
RS-1A RS-1A-300	.406 ± .031 [10.31 ± .787]	.437 [11.10]	.094 ± .031 [2.39 ± .787]	.020 [.508]
RS-1M	.285 ± .025 [7.24 ± .635]	.311 [7.90]	.110 ± .015 [2.79 ± .381]	.020 [.508]
RS-2	.625 ± .062 [15.88 ± 1.57]	.765 [19.43]	.250 ± .031 [6.35 ± .787]	.040 [1.02]
RS-2M	.500 ± .062 [12.70 ± 1.57]	.562 [14.27]	.185 ± .015 [4.70 ± .381]	.032 [.813]
RS-2B RS-2B-300	.560 ± .062 [14.22 ± 1.57]	.622 [15.80]	.187 ± .031 [4.75 ± .787]	.032 [.813]
RS-2C	.500 ± .062 [12.70 ± 1.57]	.593 [15.06]	.218 ± .031 [5.54 ± .787]	.040 [1.02]
RS-2C-17	.500 ± .062 [12.70 ± 1.57]	.593 [15.06]	.218 ± .031 [5.54 ± .787]	.032 [.813]
RS-2C-23	.500 ± .062 [12.70 ± 1.57]	.593 [15.06]	.218 ± .031 [5.54 ± .787]	.032 [.813]
RS-5	.875 ± .062 [22.23 ± 1.57]	1.0 [25.4]	.312 ± .031 [7.92 ± .787]	.040 [1.02]
RS-5-69	.875 ± .062 [22.23 ± 1.57]	.937 [23.80]	.312 ± .031 [7.92 ± .787]	.040 [1.02]
RS-5-70	.875 ± .062 [22.23 ± 1.57]	1.0 [25.4]	.312 ± .031 [7.92 ± .787]	.040 [1.02]
RS-7	1.22 ± .062 [30.99 ± 1.57]	1.28 [32.51]	.312 ± .031 [7.92 ± .787]	.040 [1.02]
RS-10	1.78 ± .062 [45.21 ± 1.57]	1.87 [47.50]	.375 ± .031 [9.53 ± .787]	.040 [1.02]
RS-10-38	1.78 ± .062 [45.21 ± 1.57]	1.84 [46.74]	.375 ± .031 [9.53 ± .787]	.040 [1.02]
RS-10-39	1.78 ± .062 [45.21 ± 1.57]	1.87 [47.50]	.375 ± .031 [9.53 ± .787]	.040 [1.02]

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

DERATING	
<p>Dale® RS style resistors have an operating temperature range of -55°C to +275°C (Characteristic U) or -55°C to +350°C (Characteristic V). See Electrical Specifications table. They must be derated at high ambient temperatures according to the curves below.</p>	
<p>CHARACTERISTIC U: Resistors are available in any tolerance.</p> <p>CHARACTERISTIC V: Resistors are available in ±3% and ±5% tolerance.</p>	

ENVIRONMENTAL PERFORMANCE *	
TEST	DALE MAXIMUM
Temperature Coefficient	± 90PPM/°C, below 1Ω ± 50PPM/°C, 1Ω - 9.9Ω ± 20PPM/°C, 10Ω and above
Thermal Shock	± (.2% + .05Ω) ΔR
Short Time Overload	± (.2% + .05Ω) ΔR
Dielectric	± (.1% + .05Ω) ΔR
Low Temperature Storage	± (.2% + .05Ω) ΔR
High Temperature Exposure	± (.5% + .05Ω) ΔR
Moisture Resistance	± (.2% + .05Ω) ΔR
Shock	± (.1% + .05Ω) ΔR
Vibration	± (.1% + .05Ω) ΔR
Load Life	± (.5% + .05Ω) ΔR
Terminal Strength	± (.1% + .05Ω) ΔR

* All ΔR figures shown are maximum, based on units with an initial tolerance of ±1% and maximum operating temperature of +275°C.

APPLICABLE MIL SPECIFICATIONS

MIL-R-26F: Designed especially for precision and non-precision power wirewound resistors. The RS series meets the requirements of MIL-R-26F as well as MIL-R-26C and MIL-R-23379. However, this does not imply qualification. Contact factory for latest Government QPL information.

SPECIAL MODIFICATIONS

1. Terminals can be supplied in any commercial material with several type finishes.
2. Terminal lengths and diameters can be varied.
3. Various elements available for special TC.
4. Special configuration available on request.
5. Tolerances available to ±.01% on most models.
6. Special matching available (TC and tolerance).

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). Four conditions apply:

1. For NS models, divide maximum resistance values by two.
 2. For NS models, multiply maximum working voltage by .707.
 3. For NS models, maximum weights may slightly exceed those shown on low values.
 4. Body O.D. on NS-2C may exceed that of the RS-2C by .010" [.254mm].
- NS-1/8 NS-1/2 NS-1M NS-2B NS-5 NS-10
NS-1/4 NS-1A NS-2 NS-2C NS-7

POWER RATING

Dale® RS models have two power ratings, depending on operating temperature and stability requirements.

CHARACTERISTIC U

1. +275°C maximum hotspot temperature.
2. ±.5% maximum ΔR in 2000 hour load life.

CHARACTERISTIC V

1. +350°C maximum hotspot temperature.
2. ±3% maximum ΔR in 2000 hour load life.

PART MARKING	
<p>— Dale — Model — Value — Tolerance — Date code</p>	

HOW TO ORDER		
RS-1A	10Ω	±1%
MODEL	RESISTANCE	TOLERANCE

PACKAGING
See Packaging Methods - Wirewound Resistors at the back of the catalog. Some standard reel pack methods trim the leads to a shorter length than shown in the Dimensional Outline.