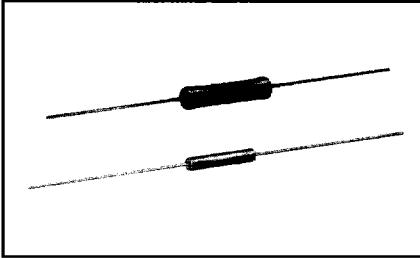


MODEL RS

Wirewound Resistors

Military, MIL-R-26 Qualified, Type RW

Precision Power, Silicone Coated and Molded



FEATURES

- Complete welded construction
- High-temperature silicone coating and molding
- 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.
- Coated models: RS-2, 2B, 2C, 5, 7 and 10. Molded models: RS-1/8 thru RS-1A.

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	
MOLDED	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
		RW70	1.0 W	—	—	.499-2.74k	.499-2.74k	.1-2.74k	—	—	—
COATED	RS-2	—	4.0 W	5.50 W	.499-12.7k	.499-12.7k	.1-47.1k	.1-47.1k	210	250	2.10
	RS-2B**	—	3.0 W	3.75 W	.499-6.5k	.499-6.5k	.1-24.5k	.1-24.5k	140	157	.70
		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	.499-8.6k	.499-8.6k	.1-32.3k	.1-32.3k	138	157	1.6
	RS-2C-23***	—	2.5 W	3.25 W	—	—	—	.1-19.9k	130	150	1.6
		RW69	2.5 W	3.25 W	—	—	—	.1-2.0k	130	150	1.6
	RS-5**	—	5.0 W	6.50 W	.499-25.7k	.499-25.7k	.1-95.2k	.1-95.2k	360	410	4.2
	RS-5-69	—	5.0 W	6.50 W	.499-24.5k	.499-24.5k	.1-91.0k	.1-91.0k	350	400	4.2
		RW74	5.0 W	—	—	.499-24.3k	.1-24.3k	.1-24.3k	—	—	—
	RS-5-70***	—	5.0 W	6.50 W	—	—	—	.1-58.5k	320	365	4.2
		RW67	5.0 W	6.50 W	—	—	—	.1-8.5k	320	365	4.2
	RS-7	—	7.0 W	9.00 W	.499-41.4k	.499-41.4k	.1-154k	.1-154k	504	576	4.7
	RS-10	—	10.0 W	13.00 W	.499-73.4k	.499-73.4k	.1-273k	.1-273k	858	978	9.0
	RS-10-38	—	10.0 W	13.00 W	.499-71.5k	.499-71.5k	.1-265k	.1-265k	846	966	9.0
		RW78	10.0 W	—	—	.499-71.5k	.1-71.5k	.1-71.5k	—	—	—
	RS-10-39***	—	10.0 W	13.00 W	—	—	—	.1-167k	765	875	9.0
		RW68	10.0 W	13.00 W	—	—	—	.1-20k	765	875	9.0

* Maximum working voltage determined at .0008" diameter wire resistance values.

*** Standard tolerance is $\pm 5\%$.1 ohm and above, $\pm 10\%$ below .1 ohm. 3% available.

** Values available down to .005 ohm in 1%, 3% and 5% tolerance and TC down to 50ppm at .22 ohm/20ppm at .5 ohm (RS-2B-32)

ELECTRICAL SPECIFICATIONS

Resistance Tolerance: $\pm 5\%$, $\pm 3\%$, $\pm 2\%$, $\pm 1\%$, $\pm .5\%$, $\pm .25\%$, $\pm .1\%$, $\pm .05\%$.

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 T.C. 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: The following 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).

Gold-plated Dumet (50 microinch) -52 (Example: RS-1A-52).

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

MODEL RS

DIMENSIONAL CONFIGURATIONS				
[Numbers in brackets indicate millimeters]				
Coated Model				
Moulded Model				
MODEL	A	B (Max.)	C	D
MOLDED	RS-1/8	.155 ± .015 [3.94 ± .381]	—	.065 ± .015 [1.65 ± .381]
	RS-1/4	.250 ± .015 [6.35 ± .381]	—	.078 ± .015 [1.98 ± .381]
	RS-1/2	.312 ± .015 [7.92 ± .381]	—	.078 ± .015 [1.98 ± .381]
	RS-1A	.422 ± .015 [10.72 ± .381]	—	.110 ± .015 [2.79 ± .381]
COATED	RS-2	.625 ± .062 [15.88 ± 1.57]	0.765 [19.43]	.250 ± .031 [6.35 ± .787]
	RS-2B	.560 ± .062 [14.22 ± 1.57]	0.622 [15.80]	.187 ± .031 [4.75 ± .787]
	RS-2C	.500 ± .062 [12.70 ± 1.57]	0.593 [15.06]	.218 ± .031 [5.54 ± .787]
	RS-2C-17	.500 ± .062 [12.70 ± 1.57]	0.593 [15.06]	.218 ± .031 [5.54 ± .787]
	RS-2C-23	.500 ± .062 [12.70 ± 1.57]	0.593 [15.06]	.218 ± .031 [5.54 ± .787]
	RS-5	.875 ± .062 [22.23 ± 1.57]	1.0 [25.4]	.312 ± .031 [7.92 ± .787]
	RS-5-69	.875 ± .062 [22.23 ± 1.57]	0.937 [23.80]	.312 ± .031 [7.92 ± .787]
	RS-5-70	.875 ± .062 [22.23 ± 1.57]	1.0 [25.4]	.312 ± .031 [7.92 ± .787]
	RS-7	1.22 ± .062 [30.94 ± 1.57]	1.28 [32.54]	.312 ± .031 [7.92 ± .787]
	RS-10	1.78 ± .062 [45.21 ± 1.57]	1.87 [47.50]	.375 ± .031 [9.53 ± .787]
	RS-10-38	1.78 ± .062 [45.21 ± 1.57]	1.84 [46.79]	.375 ± .031 [9.53 ± .787]
	RS-10-39	1.78 ± .062 [45.21 ± 1.57]	1.87 [47.50]	.375 ± .031 [9.53 ± .787]

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

DERATING	
Dale RS coated resistors have an operating temperature range of - 55°C to + 350°C. Dale RS molded resistors have an operating temperature range of - 55°C to + 275°C. They must be derated at high ambient temperatures according to the curves below.	
CHARACTERISTIC U: Coated or molded resistors are available in any tolerance.	
CHARACTERISTIC V: Coated resistors are available in 3% and 5% tolerance.	

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-26E: Designed especially for precision and non-precision power wirewound resistors. The RS series meet the requirements of this specification as well as the older MIL-R-26C and MIL-R-23379 specifications. 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 T.C.
4. Special configuration available on request.
5. Tolerances available to .01% on most models.
6. Special matching available (T.C. 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 part 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" [254].

NS-1/8 NS-1/2 NS-2 NS-2C NS-7
NS-1/4 NS-1A NS-2B NS-5 NS-10

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	
HOW TO ORDER	
RS-1A	10
MODEL	RESISTANCE
	TOLERANCE