

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



FEATURES

- High temperature coating (> 350 °C)
- Complete welded construction
- Qualified to MIL-PRF-26
- Excellent stability in operation (typical resistance shift < 0.5 %)

STANDARD ELECTRICAL SPECIFICATIONS

MILITARY MODEL	VISHAY REFERENCE MODEL	POWER RATING $P_{25\text{ }^{\circ}\text{C}}$ W CHARACTERISTIC U	POWER RATING $P_{25\text{ }^{\circ}\text{C}}$ W CHARACTERISTIC V	RESISTANCE RANGE Ω	TOLERANCE $\pm$ %	WEIGHT (typical) g
RW81	G001...380	1.0	-	0.1 to 1K	0.1, 0.5, 1	0.20
RW70	RS01A...300	1.0	-	0.1 to 2.74K	0.1, 0.5, 1	0.34
RW80	G003...380	2.0	-	0.1 to 2.74K	0.1, 0.5, 1	0.34
RW79	RS02B...300	3.0	-	0.1 to 6.49K	0.1, 0.5, 1	0.70
RW69	RS02C...23	-	3.0	0.1 to 2.0K	5, 10	1.6
RW74	RS005...69	5.0	-	0.1 to 24.3K	0.1, 0.5, 1	4.2
RW67	RS005...70	-	6.5	0.1 to 8.2K	5, 10	4.2
RW78	RS010...38	10.0	-	0.1 to 71.5K	0.1, 0.5, 1	9.0
RW68	RS010...39	-	11.0	0.1 to 20K	5, 10	9.0

Note

- RW67, RW68, RW69 available tolerance for these MIL parts is $\pm$ 5 % for 1 Ω and above, $\pm$ 10 % below 1 Ω

TECHNICAL SPECIFICATIONS

PARAMETER	UNIT	RW RESISTOR CHARACTERISTICS
Temperature Coefficient	ppm/ $^{\circ}\text{C}$	$\pm$ 20 for 10 Ω and above, $\pm$ 50 for 1 Ω to 9.9 Ω , $\pm$ 90 for below 1 Ω
Maximum Working Voltage	V	$(P \times R)^{1/2}$
Insulation Resistance	Ω	1000 M Ω minimum dry, 100 M Ω minimum after moisture test
Solderability	-	MIL-PRF-26 type - meets requirements of ANSI J-STD-002
Operating Temperature Range	$^{\circ}\text{C}$	Characteristic U = - 65 to + 250, characteristic V = - 65 to + 350

MILITARY PART NUMBER INFORMATION

Military Part Numbering example: RW80U49R9FB12

R W 8 0 U 4 9 R 9 F B 1 2											
MIL TYPE	CHARACTERISTIC		RESISTANCE VALUE			TOLERANCE CODE			PACKAGING CODE		
RW67 RW68 RW69 RW70 RW74 RW78 RW79 RW80 RW81	U = Max. hotspot 275 $^{\circ}\text{C}$ V = Max. hotspot 350 $^{\circ}\text{C}$		U Characteristic 3 digit significant figure, followed by a multiplier 49R9 = 49.9 Ω 1000 = 100 Ω 1001 = 1000 Ω			Tolerance for "U" Characteristic only B = $\pm$ 0.1 % D = $\pm$ 0.5 % F = $\pm$ 1.0 %			B12 = Bulk pack S70 = Tape/reel (smaller than 5 W) S73 = Tape/reel (5 W and higher)		
			V Characteristic 2 digit significant figure, followed by a multiplier 4R7 = 4.7 Ω 102 = 1000 Ω			Tolerance for "V" Characteristic is not listed and is as specified by MIL-PRF-26					

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: 60/40 Sn/Pb coated Copperweld®

End Caps: Stainless steel

MILITARY MODEL	DIMENSIONS in inches [millimeters]			
	A	B ⁽²⁾ (max.)	C	D
RW81	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]
RW70 RW80	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]
RW79	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]
RW69	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]
RW74 RW67	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]
RW78	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]
RW68	1.875 ± 0.063 - 0.125 [47.63 ± 1.60 - 3.18]	1.94 [49.28]	0.344 ± 0.094 [8.74 ± 2.39]	0.040 ± 0.002 [1.02 ± 0.051]

Note

⁽²⁾ B (max.) dimension is clean lead to clean lead

MARKING	
MODELS: RW70, RW74, RW78, RW79, RW80, RW81	MODELS: RW67, RW68, RW69
Characteristic U Tolerance code: B = 01 %, D = 0.5 %, F = 1 %	Characteristic V Tolerance code: Not listed
Example Dale RW80U Model 1001F Characteristic, value 0703 Date code	Example Dale RW68 Model V100 Characteristic, value M0202 Date code

DERATING



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. (RW70, RW80, RW81), 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 (RW70, RW80, RW81), 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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