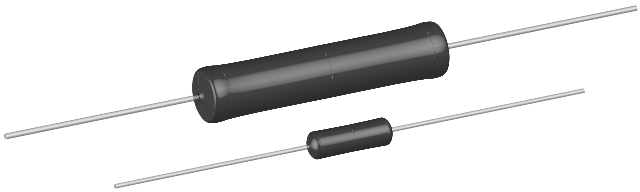
Wirewound Resistors, Military, MIL-PRF-26 Qualified, Type RW, Precision Power, Silicone Coated, Axial Lead



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 $P_{25\,°C}$ W CHARACTERISTIC U	POWER RATING $P_{25\,°C}$ W CHARACTERISTIC V	RESISTANCE RANGE Ω	TOLERANCE ± %	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 ± 5 % for 1 Ω and above, ± 10 % below 1 Ω

TECHNICAL SPECIFICATIONS

PARAMETER	UNIT	RW RESISTOR CHARACTERISTICS
Temperature Coefficient	ppm/°C	± 20 for 10 Ω and above, ± 50 for 1 Ω to 9.9 Ω, ± 90 for below 1 Ω
Maximum Working Voltage	V	$(P \times R)^{1/2}$
Insulation Resistance	Ω	1000 MΩ minimum dry, 100 MΩ minimum after moisture test
Solderability	-	MIL-PRF-26 type - meets requirements of ANSI J-STD-002
Operating Temperature Range	°C	Characterisitic 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

RW67
RW68
RW69
RW70
RW74
RW78
RW79
RW80
RW81

CHARACTERISTIC

U = Max. hotspot 275 °C
V = Max. hotspot 350 °C

RESISTANCE VALUE

U Characteristic
3 digit significant figure, followed by a multiplier
49R9 = 49.9 Ω
1000 = 100 Ω
1001 = 1000 Ω

V Characteristic
2 digit significant figure, followed by a multiplier
4R7 = 4.7 Ω
102 = 1000 Ω

TOLERANCE CODE

Tolerance for "**U**" Characteristic only
B = ± 0.1 %
D = ± 0.5 %
F = ± 1.0 %

Tolerance for "**V**" Characteristic is not listed and is as specified by MIL-PRF-26

PACKAGING CODE

B12 = Bulk pack
S70 = Tape/reel (smaller than 5 W)
S73 = Tape/reel (5 W and higher)

For technical questions, contact: ww2bresistors@vishay.com

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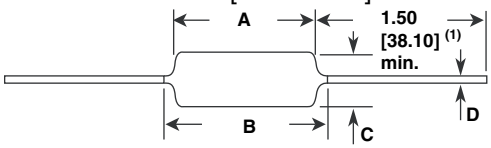
DIMENSIONS in inches [millimeters]



Note

(1) On some standard reel pack methods, the leads may be trimmed to a shorter length than shown

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

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

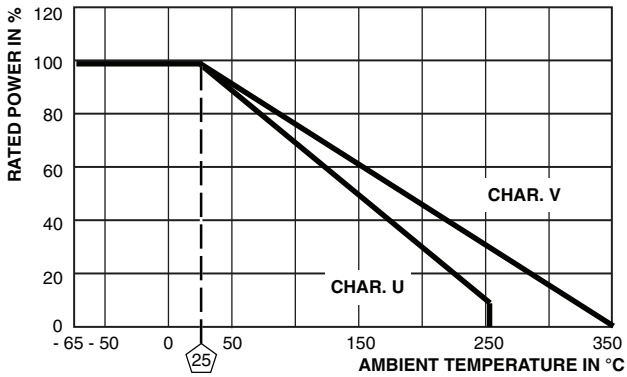
Standard Terminals: 60/40 Sn/Pb coated Copperweld®

End Caps: Stainless steel

MARKING

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