

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 | | | | |
| 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 V Characteristic 2 digit significant figure, followed by a multiplier 4R7 = 4.7 Ω 102 = 1000 Ω | Tolerance for "U" Characteristic only B = \pm 0.1 % D = \pm 0.5 % F = \pm 1.0 % Tolerance for "V" Characteristic is not listed and is as specified by MIL-PRF-26 | B12 = Bulk pack S70 = Tape/reel (smaller than 5 W) S73 = Tape/reel (5 W and higher) |

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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Как с нами связаться

Телефон: 8 (812) 309 58 32 (многоканальный)

Факс: 8 (812) 320-02-42

Электронная почта: org@eplast1.ru

Адрес: 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.