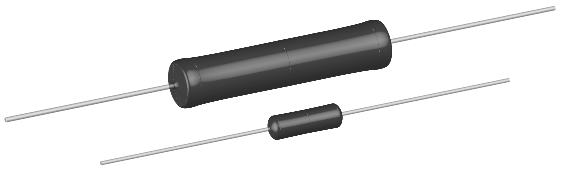
Vishay Dale

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



FEATURES

- From 1.4 to 4 times higher power ratings than conventional resistors of equivalent size
- High temperature coating
- Complete welded construction
- Meets applicable requirements of MIL-PRF-26
- Available in non-inductive styles (type GN) with Aryton-Perry winding for lowest reactive components
- Excellent stability in operation
- Lead (Pb)-Free version is RoHS Compliant

Pb-free Available

RoHS* COMPLIANT

STANDARD ELECTRICAL SPECIFICATIONS

GLOBAL MODEL	HISTORICAL MODEL	MIL-PRF-26	POWER RATING** $P_{25\,°C}$ W		RESISTANCE RANGE MIL. RANGE SHOWN IN BOLD FACE Ω				WEIGHT (Typical)
		TYPE	U ± 0.05 % thru ± 5 %	V ± 3 % & ± 5 %	± 0.05 %	± 0.1 %	± 0.25 %	± 0.5 %, ± 1 % ± 3 %, ± 5 %	g
G001...80	G-1-80	—	1.0	—	1.0 - 1k	0.499 - 1k	0.499 - 3.4k	0.1 - 3.4k	0.20
G001...380	G-1-380	**RW81**	**1.0**	**—**	**—**	**0.499 - 1k**	**0.499 - 1k**	**0.1 - 1k**	0.20
G002	G-2	—	1.5	—	1.0 - 1.3k	0.499 - 1.3k	0.499 - 4.9k	0.1 - 4.9k	0.21
G003...80	G-3-80	—	2.0	—	1.0 - 2.74k	0.499 - 2.74k	0.499 - 10.4k	0.1 - 10.4k	0.34
G003...380	G-3-380	**RW80**	**2.0**	**—**	**—**	**0.499 - 2.74k**	**0.499 - 2.74k**	**0.1 - 2.74k**	0.34
G005	G-5	—	4.0	5.0	0.499 - 6.5k	0.499 - 6.5k	0.1 - 24.5k	0.1 - 24.5k	0.80
G05C	G-5C	—	5.0	7.0	0.499 - 8.6k	0.499 - 8.6k	0.1 - 32.3k	0.1 - 32.3k	1.20
G010	G-10	—	7.0	10.0	0.499 - 25.7k	0.499 - 25.7k	0.1 - 95.2k	0.1 - 95.2k	3.60

**Vishay Dale G models have two power ratings, depending on operation temperature and stability requirements.
NOTE: Shaded area indicates most popular models.

TECHNICAL SPECIFICATIONS

PARAMETER	UNIT	G RESISTOR CHARACTERISTICS
Temperature Coefficient	ppm/°C	± 90 for below 1 Ω, ± 50 for 1 Ω to 9.9 Ω, ± 20 for 10 Ω and above
Dielectric Withstanding Voltage	V_{AC}	500 minimum for G-1-80 thru G-3-380, 1000 minimum for all others
Short Time Overload	–	5 x rated power for 5 seconds for G-1-80 thru G-5C (Characteristic U), 10 x rated power for 5 seconds for G-10
Maximum Working Voltage	V	$(P \times R)^{1/2}$
Insulation Resistance	Ω	1000 Megohm minimum dry, 100 Megohm minimum after moisture test
Terminal Strength	lb	5 minimum for G-1-80 thru G-3-380, 10 minimum for all others
Solderability	–	MIL-PRF-26 type - Meets requirements of ANSI J-STD-002 Non Mil type - Terminals are 60/40 electro tin plated to facilitate soldering
Operating Temperature Range	°C	Characteristic U = - 65/+ 250, Characteristic V = - 65/+ 350
Power Rating	–	Characteristic U - + 250 °C max. hot spot temperature, ± 0.5 % max. ΔR in 2000 hr. load life Characteristic V - + 350 °C max. hot spot temperature, ± 3.0 % max. ΔR in 2000 hr. load life

GLOBAL PART NUMBER INFORMATION

New Global Part Numbering: G00310R00FS7080 (preferred part numbering format)

G	0	0	3	1	0	R	0	0	F	S	7	0	8	0	

GLOBAL MODEL	RESISTANCE VALUE	TOLERANCE CODE	PACKAGING	SPECIAL
G003	**R** = Decimal **K** = Thousand **15R00** = 15 Ω **10K00** = 10K Ω	**A** = ± 0.05 % **B** = ± 0.1 % **C** = ± 0.25 % **D** = ± 0.5 % **F** = ± 1.0 % **J** = ± 5.0 % **K** = 10.0 %	**E70** = Lead (Pb)-Free, Tape/Reel (smaller than G010) **E73** = Lead (Pb)-Free, Tape/Reel (G010 & larger) **E12** = Lead (Pb)-Free, Bulk **Lead (Pb)-Free is not available on RW military type** **S70** = Tin/Lead, Tape/Reel (smaller than G010) **S73** = Tin/Lead, Tape/Reel (G010 & larger) **B12** = Tin/Lead, Bulk	(Dash Number) (up to 3 digits) From 1-999 as applicable

Historical Part Number example: G-3-80 10 Ω 1 % S70 (will continue to be accepted)

G-3-80	10 Ω	1 %	S70
HISTORICAL MODEL	RESISTANCE VALUE	TOLERANCE CODE	PACKAGING

* Pb containing terminations are not RoHS compliant, exemptions may apply

For technical questions, contact ww2bresistors@vishay.com

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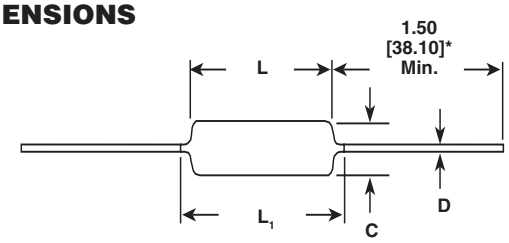
DIMENSIONS



*On some standard reel pack methods, the leads may be trimmed to a shorter length than shown.

MODEL	DIMENSIONS in inches [millimeters]			
	L	L_1 (Max.)**	C	D
G-1-80 G-1-380	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]
G-2	0.312 ± 0.016 [7.92 ± 0.406]	0.328 [8.33]	0.078 + 0.016 - 0.031 [1.98 + 0.406 - 0.787]	0.020 ± 0.002 [0.508 ± 0.051]
G-3-80 G-3-380	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]
G-5	0.562 ± 0.062 [14.27 ± 1.57]	0.622 [15.80]	0.188 ± 0.032 [4.78 ± 0.813]	0.032 ± 0.002 [0.813 ± 0.051]
G-5C	0.500 ± 0.062 [12.70 ± 1.57]	0.593 [15.06]	0.218 ± 0.032 [5.54 ± 0.813]	0.040 ± 0.002 [1.02 ± 0.051]
G-10	0.875 ± 0.062 [22.23 ± 1.57]	1.0 [25.4]	0.312 ± 0.032 [7.92 ± 0.813]	0.040 ± 0.002 [1.02 ± 0.051]

**L_1 (Max.) dimension is clean lead to clean lead.

MATERIAL SPECIFICATIONS

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

Core: Ceramic, Beryllium oxide or alumina, depending on resistor model

Coating: Special high temperature silicone

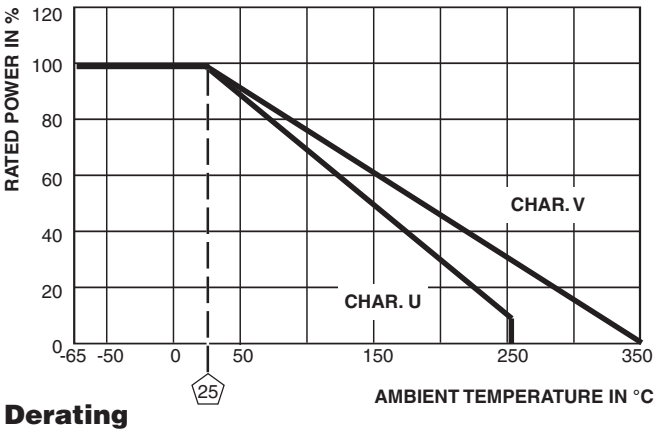
Standard Terminals: 100 % Sn, or 60/40 Sn/Pb coated Copperweld®.

NOTE: Military (RW) parts are only available with 60/40 Sn/Pb finish.

End Caps: Stainless steel

Part Marking: DALE, Model, Wattage*, Value, Tolerance, Date Code

*Wattage marked on part will be "U" characteristic



Derating

GN NON-INDUCTIVE

Models of equivalent physical and electrical specifications are available with non-inductive (Aryton-Perry) winding. They are identified by inserting the letter N after G in the model number (GN-5, for example). Two conditions apply:

1. For GN models, divide maximum resistance values by two
2. Body O.D. on GN-5C may exceed that of the G-5C by 0.010"

TERMINATION

When G resistors will be operated at full rated power, resistance welding or high temperature solder are the recommended termination methods. Termination should be made within 1/2 inch from end of resistor body.

PERFORMANCE

TEST	CONDITIONS OF TEST	TEST LIMITS (CHARACTERISTIC U)
Thermal Shock	Rated power applied until thermally stable, then a minimum of 15 minutes at - 55 °C	± (0.2 % + 0.05 Ω) ΔR
Short Time Overload	5 x power (G-1-80 thru G-5C), 10 x power (G-10) for 5 seconds	± (0.2 % + 0.05 Ω) ΔR
Dielectric Withstanding Voltage	1000 V rms, one minute	± (0.1 % + 0.05 Ω) ΔR
Low Temperature Storage	- 65 °C for 24 hours	± (0.2 % + 0.05 Ω) ΔR
High Temperature Exposure	250 hours at + 250° (Characteristic U)	± (0.5 % + 0.05 Ω) ΔR
Moisture Resistance	MIL-STD-202 Method 106, 7b not applicable	± (0.2 % + 0.05 Ω) ΔR
Shock, Specified Pulse	MIL-STD-202 Method 213, 100g's for 6 milliseconds, 10 shocks	± (0.1 % + 0.05 Ω) ΔR
Vibration, High Frequency	Frequency varied 10 to 2000 Hz, 20g peak, 2 directions 6 hours each	± (0.1 % + 0.05 Ω) ΔR
Load Life	2000 hours at rated power, + 25 °C, 1.5 hours “ON”, 0.5 hours “OFF”	± (0.5 % + 0.05 Ω) ΔR
Terminal Strength	5 to 10 sec., 5 or 10 lb pull test (depending on size), torsion test - 3 alternating directions, 360 °C each	± (0.1 % + 0.05 Ω) ΔR

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