Features:

- Flameproof inorganic construction
- High temperature potting compound
- VM – Wirewound element
- MVM – Metal oxide element for higher values
- RoHS compliant, lead free and halogen free

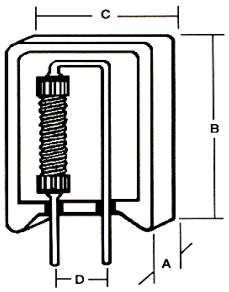
Electrical Specifications

Type / Code	Power Rating (W) @ 70ºC	Voltage Rating (V)	TCR (ppm/°C)	Ohmic Range (Ω) and Tolerance	
				5%	10%
VM2	2	250	< 1 Ω = ± 800 ppm/ºC > 1 Ω = ± 300 ppm/ºC	0.056 - 100	
VM3	3	300		0.1 - 100	
VM5	5	350		0.1 - 100	
VM7	7	500		0.39 - 470	
VM10	10	700		0.56 - 680	
MVM2	2	250	± 200 ppm/ºC	0.1 - 51 K	-
MVM3	3	300		0.1 - 51 K	-
MVM5	5	350		0.1 - 51 K	-
MVM7	7	500		510 - 51 K	-
MVM10	10	700		750 - 51 K	-

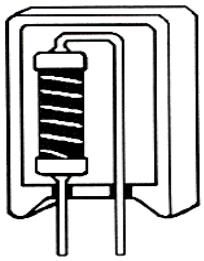
Maximum Working Voltage is limited by $\sqrt{P*R}$ unless specified otherwise.

Mechanical Specifications

VM:



MVM:

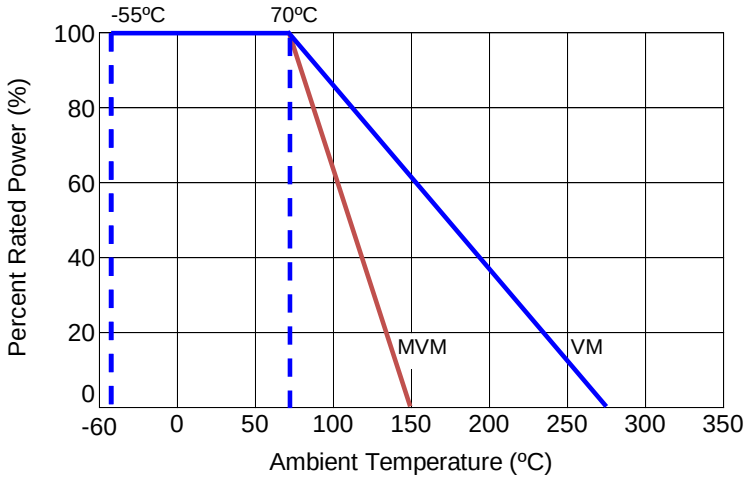


Type / Code	A	B	C	D	Lead Diameter	Lead Length	Unit
VM2 / MVM2	0.276 ± 0.039 7.00 ± 1.00	0.807 ± 0.039 20.50 ± 1.00	0.433 ± 0.039 11.00 ± 1.00	0.197 ± 0.039 5.00 ± 1.00	0.031 ± 0.002 0.80 ± 0.05	0.138 ± 0.020 3.50 ± 0.50	inches mm
VM3 / MVM3	0.335 ± 0.039 8.50 ± 1.00	0.984 ± 0.039 25.00 ± 1.00	0.492 ± 0.039 12.50 ± 1.00	0.197 ± 0.039 5.00 ± 1.00	0.031 ± 0.002 0.80 ± 0.05	0.138 ± 0.020 3.50 ± 0.50	inches mm
VM5 / MVM5	0.374 ± 0.039 9.50 ± 1.00	0.984 ± 0.039 25.00 ± 1.00	0.512 ± 0.039 13.00 ± 1.00	0.197 ± 0.039 5.00 ± 1.00	0.031 ± 0.002 0.80 ± 0.05	0.138 ± 0.020 3.50 ± 0.50	inches mm
VM7 / MVM7	0.374 ± 0.039 9.50 ± 1.00	1.535 ± 0.059 39.00 ± 1.50	0.512 ± 0.039 13.00 ± 1.00	0.197 ± 0.039 5.00 ± 1.00	0.031 ± 0.002 0.80 ± 0.05	0.138 ± 0.020 3.50 ± 0.50	inches mm
VM10 / MVM10	0.472 ± 0.039 12.00 ± 1.00	1.378 ± 0.039 35.00 ± 1.00	0.630 ± 0.039 16.00 ± 1.00	0.295 ± 0.039 7.50 ± 1.00	0.031 ± 0.002 0.80 ± 0.05	0.138 ± 0.020 3.50 ± 0.50	inches mm

Performance Characteristics	
Test	Test Results
Moisture Resistance	± 5%
Thermal Shock	± 2%
Load Life @ 70°C - 1000 hours	± 5%
Resistance to Soldering Heat	± 2%
Short Time Overload - 5 X Pn for 5 seconds	± 2%
Dielectric Withstanding Voltage	± 2%

Operational temperature range is -55°C to 275°C for VM and -55°C to 150°C for MVM.

Power Derating Curve:



Recommended Solder Profile

This information is intended as a reference for solder profiles for Stackpole resistive components. These profiles should be compatible with most soldering processes. These are only recommendations. Actual numbers will depend on board density, geometry, packages used, etc., especially those cells labeled with "*".

100% Matte Tin / RoHS Compliant Terminations

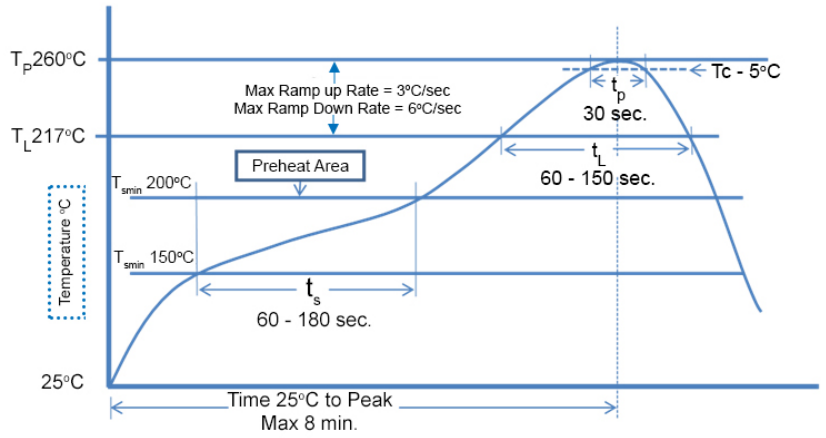
Soldering iron recommended temperatures: 330°C to 350°C with minimum duration.
Maximum number of reflow cycles: 3.

Wave Soldering			
Description	Maximum	Recommended	Minimum
Preheat Time	80 seconds	70 seconds	60 seconds
Temperature Diff.	140°C	120°C	100°C
Solder Temp.	260°C	250°C	240°C
Dwell Time at Max.	10 seconds	5 seconds	*
Ramp DN (°C/sec)	N/A	N/A	N/A

Temperature Diff. = Defference between final preheat stage and soldering stage.

Convection IR Reflow			
Description	Maximum	Recommended	Minimum
Ramp Up (°C/sec)	3°C/sec	2°C/sec	*
Dwell Time > 217°C	150 seconds	90 seconds	60 seconds
Solder Temp.	260°C	245°C	*
Dwell Time at Max.	30 seconds	15 seconds	10 seconds
Ramp DN (°C/sec)	6°C/sec	3°C/sec	*

Recommended Lead Free Resistor Reflow Profile



RoHS Compliance

Stackpole Electronics has joined the worldwide effort to reduce the amount of lead in electronic components and to meet the various regulatory requirements now prevalent, such as the European Union's directive regarding "Restrictions on Hazardous Substances" (RoHS 3). As part of this ongoing program, we periodically update this document with the status regarding the availability of our compliant components. All our standard part numbers are compliant to EU Directive 2011/65/EU of the European Parliament as amended by Directive (EU) 2015/863/EU as regards the list of restricted substances.

RoHS Compliance Status						
Standard Product Series	Description	Package / Termination Type	Standard Series RoHS Compliant	Lead-Free Termination Composition	Lead-Free Mfg. Effective Date (Std Product Series)	Lead-Free Effective Date Code (YY/WW)
VM	Ceramic Housed Vertical Mount Wirewound Resistor (Standard WW)	Radial	YES	100% Matte Sn	Jan-06	06/01
MVM	Ceramic Housed Vertical Mount Wirewound Resistor (Metal Oxide)	Radial	YES	100% Matte Sn	Jan-06	06/01

"Conflict Metals" Commitment

We at Stackpole Electronics, Inc. are joined with our industry in opposing the use of metals mined in the "conflict region" of the Eastern Democratic Republic of the Congo (DRC) in our products. Recognizing that the supply chain for metals used in the electronics industry is very complex, we work closely with our own suppliers to verify to the extent possible that the materials and products we supply do not contain metals sourced from this conflict region. As such, we are in compliance with the requirements of Dodd-Frank Act regarding Conflict Minerals.

Compliance to "REACH"

We certify that all passive components supplied by Stackpole Electronics, Inc. are SVHC (Substances of Very High Concern) free and compliant with the requirements of EU Directive 1907/2006/EC, "The Registration, Evaluation, Authorization and Restriction of Chemicals", otherwise referred to as REACH. Contact us for complete list of REACH Substance Candidate List.

Environmental Policy

It is the policy of Stackpole Electronics, Inc. (SEI) to protect the environment in all localities in which we operate. We continually strive to improve our effect on the environment. We observe all applicable laws and regulations regarding the protection of our environment and all requests related to the environment to which we have agreed. We are committed to the prevention of all forms of pollution.

How to Order

1	2	3	4	5	6	7	8	9
V	**M**	**3**	**J**	**B**	**2**	**R**	**2**	**0**

Product Series	
VM	Standard WW
MVM	Metal Oxide

Power Rating	
Size	W
2	2
3	3
5	5
7	7
10	10

Tolerance	
Code	Tol
J	5%
K	10%

Packaging			
Code	Description	Size	Quantity
B	Bulk	VM2, MVM2	1800
		VM3, MVM3	1500
		VM5, MVM5	1500
		VM7, MVM7	800
		VM10, MVM10	600

Resistance Value
Four characters with the multiplier used as the decimal holder. "L" used as multiplier of 10^{-3} for any value under 0.1 ohm.
0.056 ohm = 56L0
0.1 ohm = R100
680 ohm = 680R
51 Kohm = 51K0