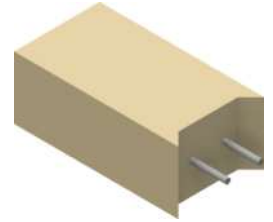


Features:

- Flameproof inorganic construction
- High temperature potting compound
- LVM – Low resistance wire or ribbon element
- NVM – Non-inductively Ayrton Perry winding
- WVM – Precision wirewound element
- RoHS compliant, REACH compliant, lead free, and halogen free



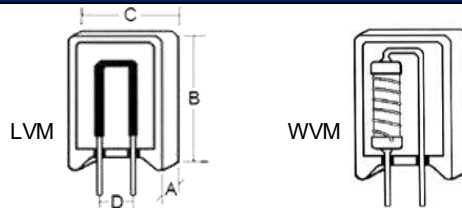
Electrical Specifications

Type/Code	Power Rating (W) @ 70°C	Voltage Rating (V)	TCR (ppm/°C)	Ohmic Range (Ω) and Tolerance			
				0.5%	1%	5%	10%
LVM5	5	√(P*R)	± 50 ppm to ± 400 ppm depending on value	-	0.01 - 0.1		
LVM7	7	√(P*R)		-	0.02 - 0.15		
LVM10	10	√(P*R)		-	0.02 - 0.15		
NVM5	5	350	< 1Ω = ± 90 ppm/°C	-		0.1 - 2.4K	-
NVM7	7	500	1Ω to 10Ω = ± 50 ppm/°C	-		0.1 - 3.9K	-
NVM10	10	700	> 10Ω = ± 20 ppm/°C	-		0.1 - 3.9K	-
WVM5	5	350	< 1Ω = ± 90 ppm/°C	0.1 - 5K			-
WVM7	7	500	1Ω to 10Ω = ± 50 ppm/°C	0.1 - 8K			-
WVM10	10	700	> 10Ω = ± 20 ppm/°C	0.1 - 8K			-

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

Resistance Temperature Coefficient Standard

Mechanical Specifications



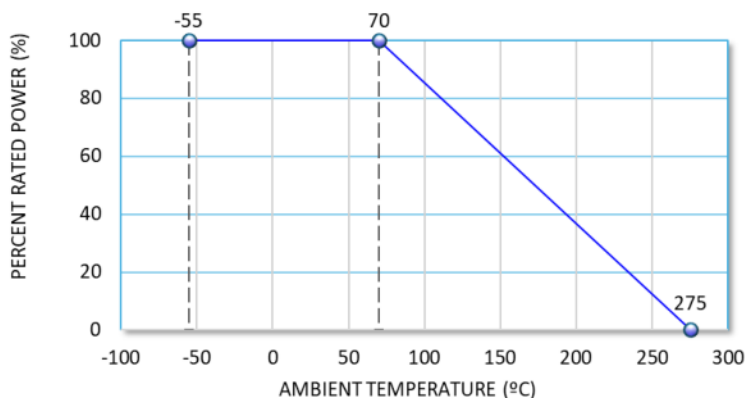
Type/Code	A	B	C	D	Lead Diameter	Lead Length	Unit
LVM5, NVM5, WVM5	0.380 ± 0.039 9.65 ± 0.99	0.990 ± 0.059 25.15 ± 1.50	0.520 ± 0.039 13.21 ± 0.99	0.200 ± 0.059 5.08 ± 1.50	0.032 ± 0.002 0.81 ± 0.05	0.175 ± 0.032 4.45 ± 0.81	inches mm
LVM7, NVM7, WVM7	0.380 ± 0.039 9.65 ± 0.99	1.520 ± 0.059 38.61 ± 1.50	0.520 ± 0.039 13.21 ± 0.99	0.200 ± 0.059 5.08 ± 1.50	0.036 ± 0.002 0.91 ± 0.05	0.175 ± 0.032 4.45 ± 0.81	inches mm
LVM10, NVM10, WVM10	0.480 ± 0.039 12.19 ± 0.99	1.375 ± 0.059 34.93 ± 1.50	0.635 ± 0.039 16.13 ± 0.99	0.300 ± 0.059 7.62 ± 1.50	0.036 ± 0.002 0.91 ± 0.05	0.175 ± 0.032 4.45 ± 0.81	inches mm

Performance Characteristics

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

Operating temperature range is -55 to +275°C

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.

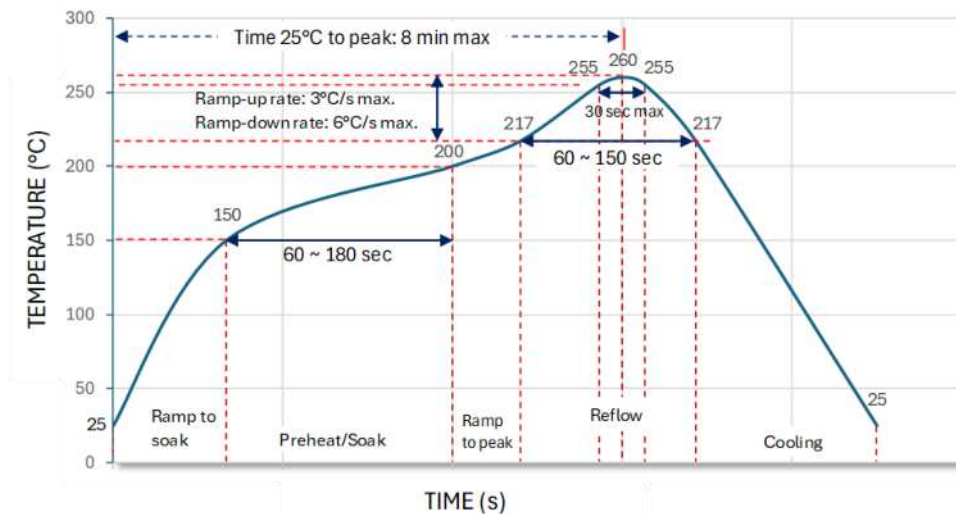
Maximum number of reflow cycles: 3.

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. = Difference 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 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)
LVM	Ceramic Housed Vertical Mount Low Resistance Resistor (Ribbon Element)	Radial	YES	100% Matte SN	Jan-06	06/01
NVM	Ceramic Housed Vertical Mount Wirewound Resistor (Standard WW)	Radial	YES	100% Matte Sn	Always	Always
WVM	Ceramic Housed Vertical Mount Wirewound Resistor (Precision Wirewound)	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

