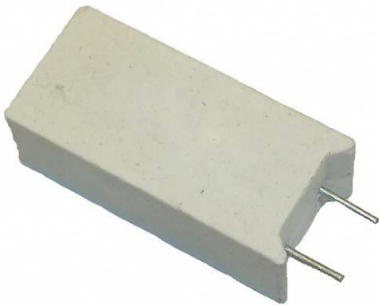


# VM5JB51R0 Datasheet

[www.digi-electronics.com](http://www.digi-electronics.com)



<https://www.DiGi-Electronics.com>

DiGi Electronics Part Number	VM5JB51R0-DG
Manufacturer	<a href="#">Stackpole Electronics Inc</a>
Manufacturer Product Number	VM5JB51R0
Description	RES 51 OHM 5% 5W RADIAL
Detailed Description	51 Ohms ±5% 5W Through Hole Resistor Radial Flame Proof, Moisture Resistant, Safety Wirewound

This model VM5JB51R0 is available at DiGi Electronics.

DiGi Electronics offers a global database of semiconductor and electronic component datasheets.

We welcome your inquiries regarding pricing, lead time, or other product-related questions.

 [Request a Quote](#)

 [Datasheet Search](#)



Tel: +00 852-30501935

RFQ Email: [Info@DiGi-Electronics.com](mailto:Info@DiGi-Electronics.com)

DiGi is a global authorized distributor of electronic components.

## Purchase and inquiry

Manufacturer Product Number:

VM5JB51R0

Series:

VM

Resistance:

51 Ohms

Power (Watts):

5W

Features:

Flame Proof, Moisture Resistant, Safety

Operating Temperature:

-55°C ~ 250°C

Supplier Device Package:

-

Height - Seated (Max):

1.024" (26.00mm)

Failure Rate:

-

Manufacturer:

Stackpole Electronics Inc

Product Status:

Active

Tolerance:

±5%

Composition:

Wirewound

Temperature Coefficient:

±300ppm/°C

Package / Case:

Radial

Size / Dimension:

0.512" L x 0.374" W (13.00mm x 9.50mm)

Number of Terminations:

2

## Environmental & Export classification

RoHS Status:

ROHS3 Compliant

REACH Status:

REACH Unaffected

HTSUS:

8533.21.0080

Moisture Sensitivity Level (MSL):

Not Applicable

ECCN:

EAR99

# VM / MVM Series

## Ceramic Housed Vertical Mount Resistor

Stackpole Electronics, Inc.  
Resistive Product Solutions

### Features:

- Flameproof inorganic construction
- High temperature potting compound
- VM – Wirewound element
- MVM – Metal oxide element for higher values
- RoHS compliant, REACH compliant, halogen free, and lead free without exemption



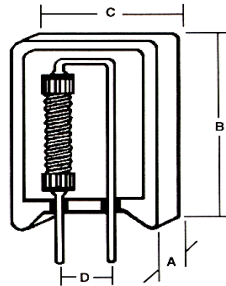
### Electrical Specifications

Type/Code	Power Rating (W) @ 70°C	Voltage Rating (V)	TCR (ppm/°C)	Ohmic Range (Ω) and Tolerance	
				5%	10%
VM2	2	250	< 1Ω = ± 700 ppm/°C ≥ 1Ω = ± 200 ppm/°C	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/°C	0.1 - 51K	-
MVM3	3	300		0.1 - 51K	-
MVM5	5	350		0.1 - 51K	-
MVM7	7	500		510 - 51K	-
MVM10	10	700		750 - 51K	-

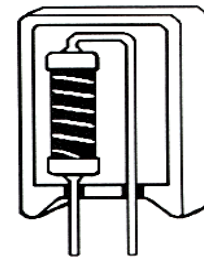
Maximum Working Voltage is limited by  $\sqrt{P \cdot R}$  unless specified otherwise.

### Mechanical Specifications

VM:



MVM:



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

# VM / MVM Series

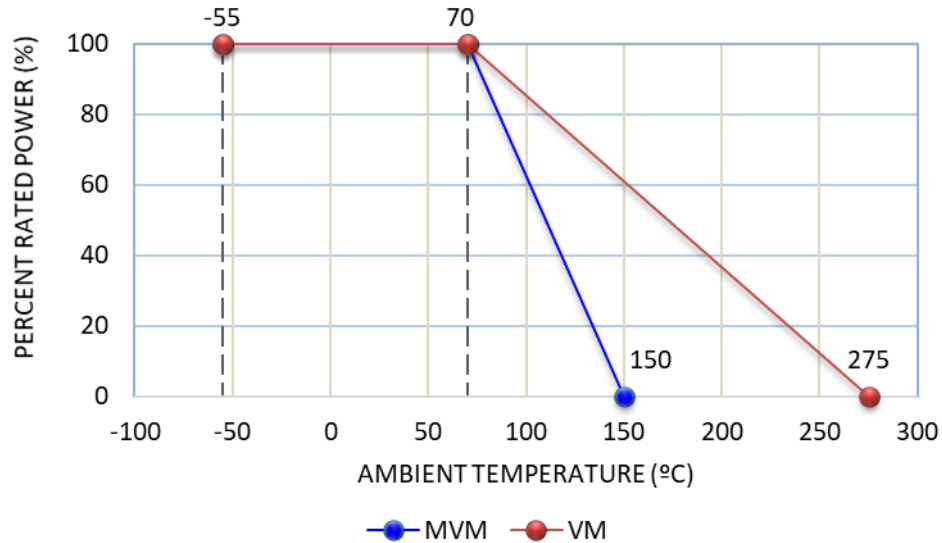
## Ceramic Housed Vertical Mount Resistor

Stackpole Electronics, Inc.  
Resistive Product Solutions

Performance Characteristics	
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 to 275°C for VM and -55 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. = Difference between final preheat stage and soldering stage.

# VM / MVM Series

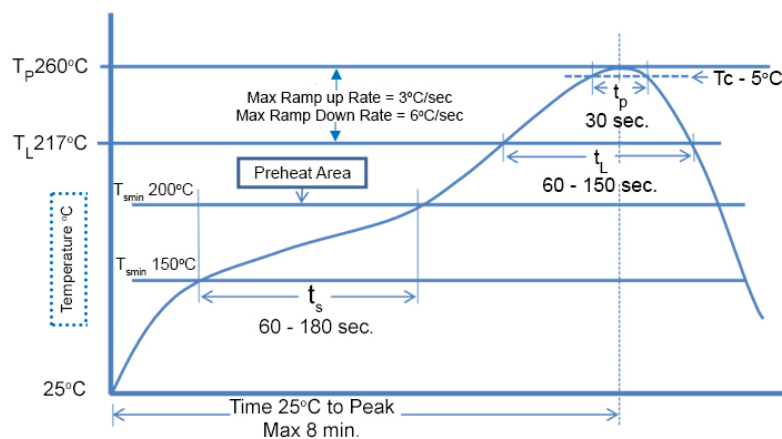
## Ceramic Housed Vertical Mount Resistor

Stackpole Electronics, Inc.  
Resistive Product Solutions

### 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

# VM / MVM Series

## Ceramic Housed Vertical Mount Resistor

Stackpole Electronics, Inc.  
Resistive Product Solutions

### “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



## OUR CERTIFICATE

DiGi provide top-quality products and perfect service for customer worldwide through standardization, technological innovation and continuous improvement. DiGi through third-party certification, we stricly control the quality of products and services. Welcome your RFQ to

Email: [Info@DiGi-Electronics.com](mailto:Info@DiGi-Electronics.com)



Tel: +00 852-30501935

RFQ Email: [Info@DiGi-Electronics.com](mailto:Info@DiGi-Electronics.com)

DiGi is a global authorized distributor of electronic components.