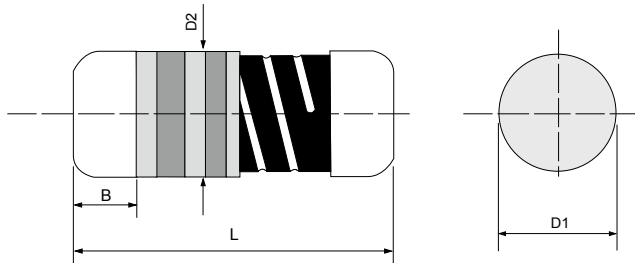


RHVM Series

High Voltage MELF Resistor



1. Specifications Per

• IEC 60115-1

2. Features

- Handles much higher working voltage than general purpose resistors
- Pure tin-plated termination for excellent solderability
- SMD enabled structure
- Anti-surge features available
- VDE0860 Compliance.
- Products meet RoHS requirements and do not contain substances of very high concern identified by European Chemicals Agency

■ DIMENSIONS

Type	Body Length (L, mm)	Cap Diameter (D1, mm)	Body Diameter (D2, mm)	Soldering Spot (B, mm)	Net Weight Per 1000 pcs
RHVM16	3.52 ± 0.15	1.35 ± 0.1	D1+0.02/ -0.15	0.6 Min.	17 grams
RHVM25	5.90 ± 0.20	2.20 ± 0.1	D1+0.02/ -0.2	1.0 Min.	66 grams
RHVM50	8.50 ± 0.50	3.00 ± 0.2	D1+0.05/ -0.35	1.3 Min.	186 grams
RHVM100	10.5 ± 0.50	4.00 ± 0.5	D1+0.05/ -0.45	1.6 Min.	446 grams
RHVM200	12.6 ± 0.60	4.60 ± 0.5	D1+0.05/ -0.50	1.8 Min.	750 grams
RHVM300	14.6 ± 0.60	5.10 ± 0.5	D1+0.05/ -0.50	2.0 Min.	1000 grams

■ GENERAL SPECIFICATIONS

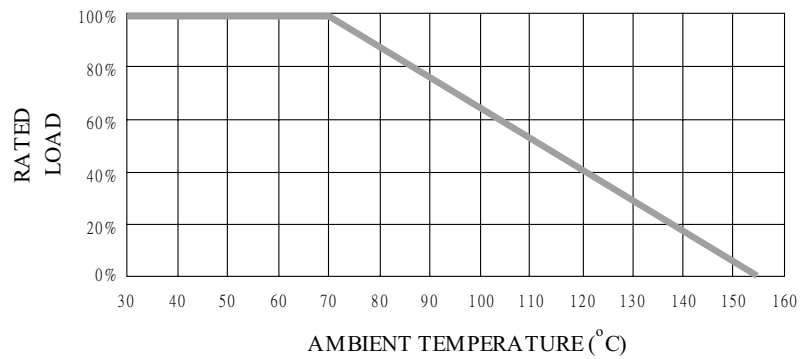
Type	Power Rating (at 70°C)	Maximum Working Voltage	Maximum Overload Voltage	Minimum Resistance	Maximum Resistance	Resistance Tolerance	Available Resistance Values
RHVM16	1/6W	600V	1,250V DC 900V RMS	56KΩ	22MΩ	±1%~±5%	E-24/E-96
RHVM25	1/4W	1,250V DC 900V RMS	2,400V DC 1,800V RMS	91KΩ	24MΩ	±1%~±5%	E-24/E-96
RHVM50	1/2W	2,800V DC 2,000V RMS	5,600V DC 4,000V RMS	100KΩ	33MΩ	±1%~±5%	E-24/E-96
RHVM100	1W	4,200V DC 3,000V RMS	8,400V DC 6,000V RMS	100KΩ	68MΩ	±1%~±5%	E-24/E-96
RHVM200	2W	6,300V DC 4,500V RMS	11,200V DC 8,000V RMS	100KΩ	68MΩ	±1%~±5%	E-24/E-96
RHVM300	3W	8,400V DC 6,000V RMS	14,000V DC 10,000V RMS	100KΩ	68MΩ	±1%~±5%	E-24/E-96

Special sizes, values, and specifications not listed available on special order.

RHVM Series

High Voltage MELF Resistor

POWER DERATING CURVE



TECHNICAL SUMMARY

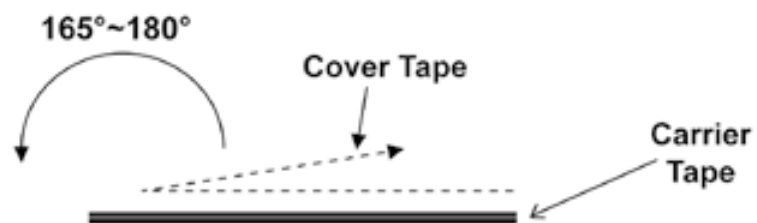
Characteristics	Limits
Dielectric Withstanding Voltage, VAC or DC	RHVM16: 300 RHVM25: 500 RHVM50: 700 RHVM100, RHVM200, RHVM300: 1000
Temperature Coefficient, PPM / °C*	±200, ±400, ±800, ±1200
Operating Temperature Range, °C	-55 ~ +155
Insulation Resistance, MΩ	>10 ⁴
Failure Rate in Time, pcs / 10 ⁹ device hours	< 5
Tin Whisker (JESD201 Temperature Cycling & High Temp. /Humidity Storage), μm	< 5

* Not applicable to all resistance values. Please check with us regarding the PPM of specific resistance value(s).

COVER TAPE PEELING SPECIFICATION

Recommended peeling force:

RHVM16, RHVM25: 50±5gf RHVM50, RHVM100: 70±10gf RHVM200, RHVM300: 80±10gf



RHVM Series

High Voltage MELF Resistor

TECHNICAL SUMMARY

Characteristics	Limits
Dielectric Withstanding Voltage, VAC or DC	HVM16: 300 HVM25: 500 HVM50: 700 HVM100, HVM200, HVM300: 1000
Temperature Coefficient, PPM / °C*	±200, ±400, ±800, ±1200
Operating Temperature Range, °C	-55 ~ +155
Insulation Resistance, MΩ	>10 ⁴
Failure Rate in Time, pcs / 10 ⁹ device hours	< 5
Tin Whisker (JESD201 Temperature Cycling & High Temp. /Humidity Storage), μm	< 5

* Not applicable to all resistance values. Please check with us regarding the PPM of specific resistance value(s).

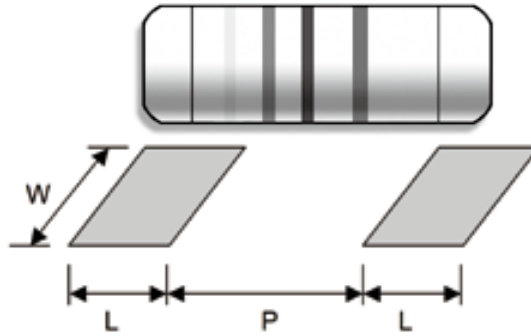
PERFORMANCE SPECIFICATIONS

Characteristics	Test Conditions	Limits
Short Time Overload	IEC 60115-1 4.13 5 seconds 2.5x rated voltage (not over max. overload voltage)	±2%
Load Life In Humidity	IEC 60115-1 4.24 56 days rated load (not over max. working voltage) at (40±2)°C and (93±3)% relative humidity	±3%
Load Life	IEC 60115-1 4.25.1 Rated load (not over max. working voltage) 1,000 hours with 1.5 hours ON, 0.5 hours OFF, at (70±2)°C	±3%
Periodic Electric Overload	IEC 60115-1 4.39 3.9x rated voltage (not over max. overload voltage) with 0.1s ON, 2.5s OFF for 1,000 cycles	±2.5%
Resistance To Soldering Heat	IEC 60115-1 4.18.2 Dip the resistor into a solder bath measured (260±5)°C and hold it for a 10±1 seconds	±1%
Solderability	IEC 60115-1 4.17.2 Solder area covered after (235±3)°C/(2±0.2) seconds with flux applied	95% min.coverage
Vibration	IEC 60115-1 4.22 Six hours in each parallel and axial direction with a simple harmonic motion having an amplitude of 0.75mm and 10 to 500 Hz.	±1%
Thermal Endurance	IEC 60115-1 4.25.3 1000 hours at 155°C without load	±1%
Thermal Shock	IEC 60115-1 4.19 -55°C 30minutes, +155°C 30minutes, 5 cycles	±2%
Single pulse high voltage overload	IEC 60115-1 4.27 10 pulses of 10/700μs at 10x rated voltage (not over max. overload voltage) with interval of 60 sec.	±2%
Electrostatic discharge (Human body model)	IEC 60115-1 4.38 3 positive & 3 negative discharges with 4KV source	±2.5%
Climatic test	IEC 60115-1 4.23 4.23.2 - dry heat: 16 hours 155°C 4.23.3 - damp heat: 24 hours 55°C with 95% relative humidity 4.23.4 - cold: 2 hours -55°C 4.23.5 - negative air pressure: 2 hour 8.5KPa at (25±10)°C 4.23.6 - damp heat cyclic: 5 days 55°C with 95% relative humidity 4.23.7 - DC load: rated voltage at -55°C and 155°C each 1 Min.	±2%
Bending test	IEC 60115-1 4.33 Pressing depth 2mm, 3 times	±1%
Flammability	IEC 60115-1 4.35 Needle flame test 10s	No burning after 30s

RHVM Series

High Voltage MELF Resistor

■ SUGGESTED PAD LAYOUT



Type	Soldering Mode	Pad Length (L, mm, Min.)	Pad Spacing (P, mm)	Pad Width (W, mm, Min.)
RHVM16	Reflow	1.3	1.6 ± 0.1	1.6
	Wave	1.5	1.5 ± 0.1	1.8
RHVM25	Reflow	2.0	3.0 ± 0.1	3.0
	Wave	2.5	3.0 ± 0.1	3.0
RHVM50	Reflow	3.0	4.9 ± 0.3	3.7
	Wave	3.5	4.8 ± 0.3	4.0
RHVM100	Reflow	4.0	6.2 ± 0.4	5.0
	Wave	4.5	6.0 ± 0.4	5.0
RHVM200	Reflow	4.5	8.0 ± 0.4	5.5
	Wave	5.0	7.7 ± 0.4	5.5
RHVM300	Reflow	5.0	9.3 ± 0.4	6.5
	Wave	5.0	9.0 ± 0.4	6.0

For better heat dissipation / lower heat resistance, increase W & L.

■ PART NUMBER

Example: RHVM161/6W68KJ200ppmNIL

RHVM16	1/6W	68K	J	200ppm	NIL
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Type	Power	Resistance	Tolerance	TCR	Packaging
	1/6W	22R=22Ω 22K=22KΩ 1M=1MΩ R = 1 K = 10 ³ M = 10 ⁶ G = 10 ⁹	J (5%) K (10%) M (20%)	TCR 3-7-character code TYL=Typical TCR=±300ppm=300ppm	Nil = Bulk T/R = Tape and Reel T/B = Tape and Box