

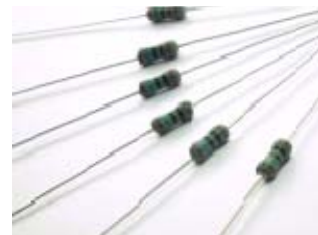
RNV Series

High Voltage Anti-moisture Metal Film Resistor

Stackpole Electronics, Inc.

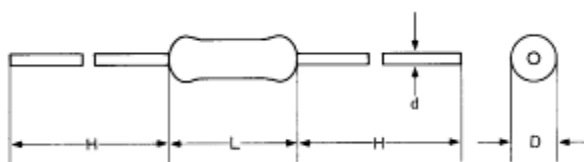
Resistive Product Solutions

- Features:
- High voltage surge handling per IEC 60065.14.1, up to 7KV
 - High tolerance to prolonged exposure to temperature and humidity stress
 - Ideal for applications requiring high stability, reliability and voltage handling; including power inverters, AC adapters and switching power supplies



Electrical Specifications

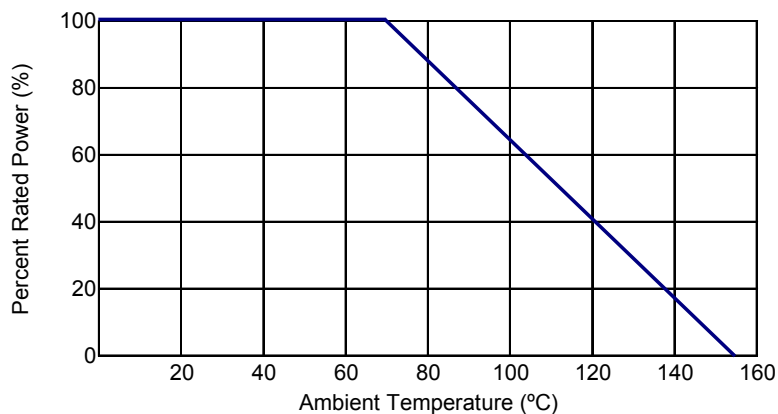
Type / Code	Power Rating (Watts) @ 70°C	Maximum Working Voltage	Maximum Overload Voltage	Resistance Temperature Coefficient	Ohmic Range (Ω) and Tolerance
					1% and 5%
RNV14	0.25W	1600V (DC) 1150V (RMS)	3200V (DC) 2300V (RMS)	±200 ppm/°C	100K - 15M



Mechanical Specifications

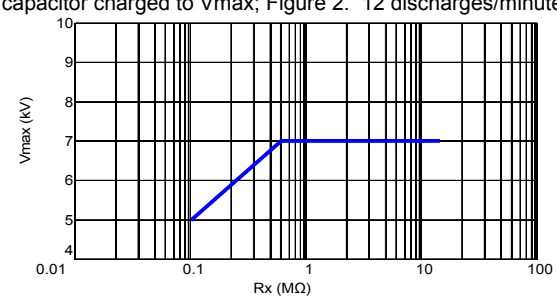
Type / Code	L	D	d	H	Units
RNV14	0.236 ± 0.012	0.094 ± 0.008	0.022 ± 0.002	1.102 ± 0.12	inches
	6.0 ± 0.3	2.4 ± 0.2	0.55 ± 0.05	28.0 ± 0.3	mm

Power Derating Curve:



How to Order

1	2	3	4	5	6	7	8	9	10	11	12
R	N	V	1	4	F	T	L	1	0	0	K
Product Series		Size	Power	Tolerance		Packaging			TCR		Resistance Value
RNV	High Voltage Metal Film	14	0.25W	Code	Tol	Code	Description	Size	Quantity	Code	ppm
				F	1%	A	Tape Box (52mm)	14	2,000	L	200
				J	5%	T	Tape and Reel		5,000		
											Four characters with the multiplier used as the decimal holder.
											100 Kohm = 100K
											1 Mohm = 1M00
											15 Mohm = 15M0

Performance Characteristics		
Item	Performance	Test Method
Solvent Resistance	No serious scratches on the insulating surface	Resistor was dipped into solvent for 5 ± 0.5 minutes
Temperature Coefficient Resistance (TCR)	Within $\pm 200 \text{ ppm}/^\circ\text{C}$	Measured resistance (R_0 ohm) at room temperature (t $^\circ\text{C}$) then measured again at 100°C higher than room temperature $\text{ppm}/^\circ\text{C} = (R - R_0)/R_0 \times 10^6 / (T + 100 - t)$
Overload (short time)	Resistance variation within $\pm(1\% + 0.05 \text{ ohm})$	Applied DC voltage 2.5 times the rated voltage for 5 seconds ON, 45 seconds OFF. Repeated cycle 10 times. Maximum Overload voltage is not more than 2 x Max Working Voltage
Voltage Proof	Resistance variation within $\pm(0.5\% + 0.05 \text{ ohm})$	Resistor was clamped in the through of a 90°C metallic V-block and was tested at provided AC potential voltage for 1 minute. Test voltage: max overload voltage. Test voltage: 500V (AC)
Vibration	Resistance variation within $\pm(0.5\% + 0.05 \text{ ohm})$	Applied 1.5mm amplitude vibration to two directions, perpendicular to each other, for 6 hours each. Total 12 hours. Vibrating frequency is 10HZ - 2000HZ - 10HZ cycle in 20 minutes. Repeat cycle.
Insulation Resistance	10^4 M ohm or more	Resistor was clamped in the through of a 90°C metallic V-block at DC 100V for 1 minute
Robustness of Terminations	Resistance variation within $\pm(0.5\% + 0.05 \text{ ohm})$ and no mechanical damage	Tensile test: The body of the part is fixed. The tensile force was applied gradually up to 10N. Twist test: Terminal lead was rotated 360° of the original axis of the bent terminal, alternating direction for 3 rotations.
Resistance to Soldering Heat	No mechanical and electrical deterioration	Resistance to wave soldering condition: Temperature/Time-Profile in accordance to the CECC00802. Max Temperature/Time: 260°C , 10 seconds
Solderability	More than 95% of the lead surface was covered by new solder after the leads were dipped in the solder	Dipped the lead into a solder bath (temperature $245^\circ\text{C} \pm 5^\circ\text{C}$) up to $4 \pm 0.8 \text{ mm}$ from the resistor body and held for 5 ± 0.5 seconds.
Rapid Change of Temperature	Resistance variation within $\pm(0.5\% + 0.05 \text{ ohm})$	Test: -55°C for 30 min., 25°C for 30 sec., 155°C for 30 min. 25°C for 30 sec. Resistance changed after continuous 5 cycles.
Damp Heat	Resistance variation within $\pm(1.5\% + 0.05 \text{ ohm})$	Temperature $40^\circ\text{C} \pm 2^\circ\text{C}$, relative humidity 90~95%, inside bath for 1.5 hour and shut voltage 0.5 hour. Repeated cycle for 1,000 hours. Room temperature for 1 hour after test, then measured
Endurance at 70°C	Resistance variation within $\pm(1.5\% + 0.05 \text{ ohm})$	In constant temperature chamber $70^\circ\text{C} \pm 2^\circ\text{C}$, applied rated DC voltage for 1.5 hour and shut voltage for 0.5 hour. Cycle repeated for 1,000 hours.
Cold Resistance	Resistance variation within $\pm(1.5\% + 0.05 \text{ ohm})$	Resistor was put into a bath at fixed temp of $-55^\circ\text{C} \pm 3^\circ\text{C}$ for 2 hours. After measured, left at room temp for 1 hour, then measured again.
Heat Resistance	Resistance variation within $\pm(1.5\% + 0.05 \text{ ohm})$	Resistor was put into a bath at fixed temp of $155^\circ\text{C} \pm 3^\circ\text{C}$ for 16 hours. After measured, left at room temp for 1 hour, then measured again.
High Voltage Surge Test	Resistance variation within $\pm(1\% + 0.05 \text{ ohm})$	In accordance with IEC60065.14.1, 50 discharges from a 1nF capacitor charged to V_{max} ; Figure 2. 12 discharges/minute 

Operating Temperature Range: -55°C to $+155^\circ\text{C}$