

RNV Series

High Voltage Anti-moisture Metal Film Resistor

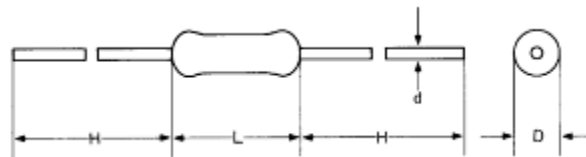
Stackpole Electronics, Inc.

Resistive Product Solutions

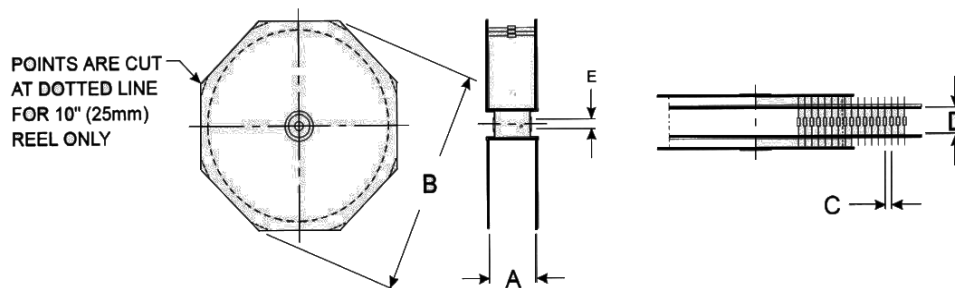
- Features:
- High voltage surge handling per IEC 60065.14.1, up to 7KV
 - High tolerance to prolonged exposure to temperature and humidity stress
 - Ideal for applications requiring high stability, reliability and voltage handling; including power inverters, AC adapters and switching power supplies



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)	± 100 ppm/°C ± 200 ppm/°C	100K - 6.8M 100K - 15M



Mechanical Specifications					
Type / Code	L	D	d	H	Unit
RNV14	0.236 ± 0.012	0.094 ± 0.008	0.022 ± 0.002	1.102 ± 0.079	inches
	6.00 ± 0.30	2.40 ± 0.20	0.55 ± 0.05	28.00 ± 2.00	mm

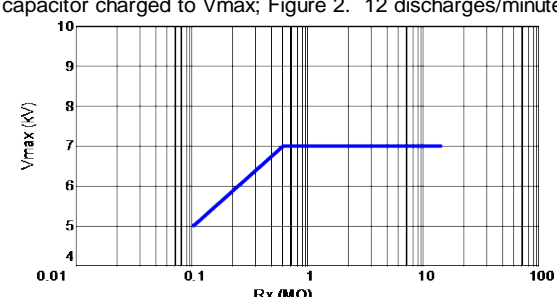


Packaging Specifications						
Type / Code	A Max. ⁽¹⁾	B Max.	C	D ⁽²⁾	Tape	Unit
RNV14	2.756 ± 0.118	11.811 ± 0.197	0.197 ± 0.020	$2.047 + 0.020 / -0.00$	0.250	inches
	70.00 ± 3.00	300.00 ± 5.00	5.00 ± 0.50	$52.00 + 0.50 / -0.00$	6.35	mm

Dimension "E": This is a non-critical dimension that does not have a tolerance in the standard.

Range of diameters is from 0.547" (13.9 mm) to 1.5" (38.1 mm)

- (1) Reference value only. The "A" dimension shall be governed by the overall length of the taped component. The distance between flanges shall be 0.59" (1.5 mm) to 0.315" (8 mm) greater than the overall component.
- (2) The given dimension "D" expresses the standard width spacing. A 26 mm narrow spacing is available as option "N" packaging code.

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)	±100 ppm/°C (100K - 6.8M) ±200 ppm/°C (100K - 15M)	Measured resistance (R ₀ ohm) at room temperature (t °C) then measured again at 100°C higher than room temperature $ppm/°C = (R - R_0) / R_0 \times 10^6 / ((T + 100) - t)$
Overload (short time)	Resistance variation within ±(1% + 0.05 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 ±(0.5% + 0.05 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 ±(0.5% + 0.05 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 ±(0.5% + 0.05 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°C ± 5°C) up to 4 ± 0.8mm from the resistor body and held for 5 ± 0.5 seconds.
Rapid Change of Temperature	Resistance variation within ±(0.5% + 0.05 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 ±(1.5% + 0.05 ohm)	Temperature 40°C ± 2°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 ±(1.5% + 0.05 ohm)	In constant temperature chamber 70°C ± 2°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 ±(1.5% + 0.05 ohm)	Resistor was put into a bath at fixed temp of -55°C ± 3°C for 2 hours. After measured, left at room temp for 1 hour, then measured again.
Heat Resistance	Resistance variation within ±(1.5% + 0.05 ohm)	Resistor was put into a bath at fixed temp of 155°C ± 3°C for 16 hours. After measured, left at room temp for 1 hour, then measured again.
High Voltage Surge Test	Resistance variation within ±(1% + 0.05 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°C

How to Order

