

FIXED HIGH VOLTAGE RESISTORS

KAMAYA OHM

RNV

•Features

- 1. High maximum working voltage, excellent for surge applications.
- 2. IEC Publ. 65 applies to RNV1.
- 3. Approved to UL, c-UL, BSI and VDE standards.

[RNV1]

- UL, c-UL, File No. E151897
510k ohm~910k ohm : 125V max.
960k ohm~11M ohm : 250V max.
- BSI No.7778
BS EN 60065:1994 (BS 415:1994) : Sub-clauses 9.3.5,14.1 (a) and (b)
- VDE No.VDE-Reg.-Nr.10149
DIN EN VDE (EN 60065:1994-04,14.1a)

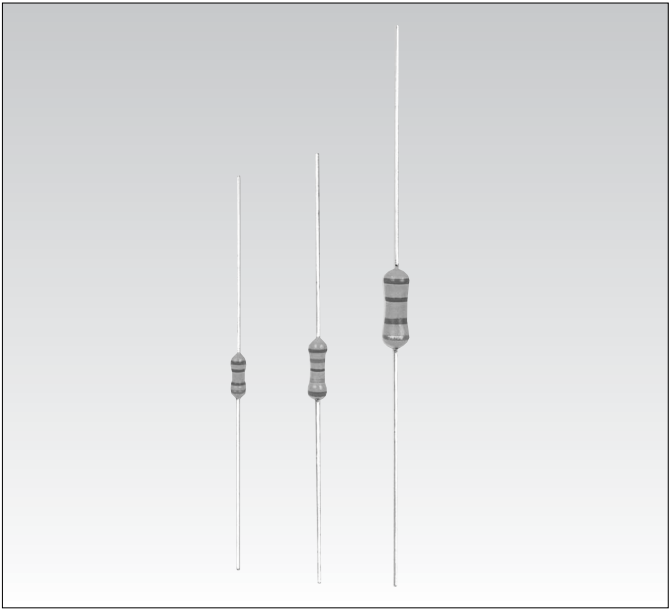


[RNV1/2]

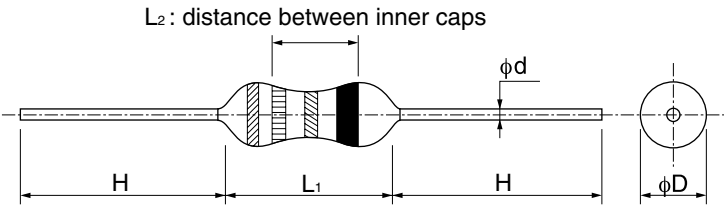
- UL, c-UL, File No. E151897
510k ohm~910k ohm : 125V max.
960k ohm~8.2M ohm : 250V max.



- 4. Stability Class : 5%



•Dimensions

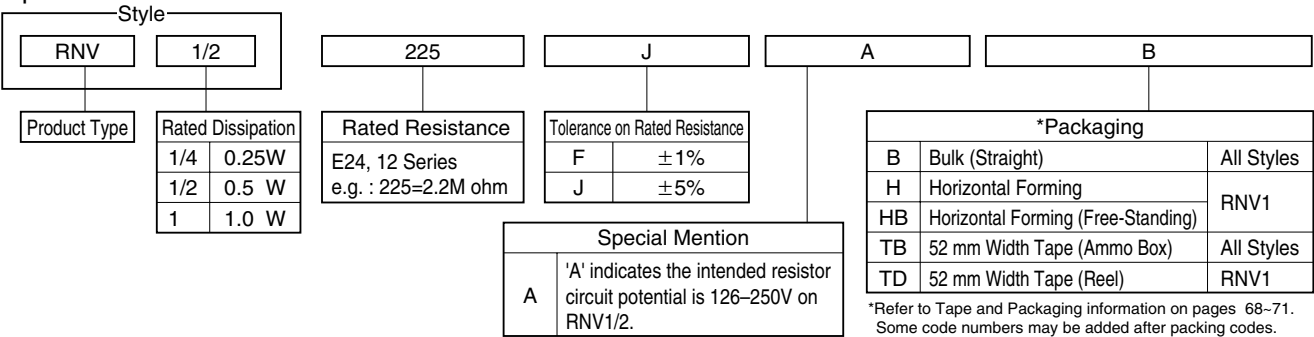


Unit : mm						
Style	L1	L2	D	H	d	*Unit Weight/pc.
RNV 1/4	6.5 ±0.5	—	2.5 ±0.4	30 ±3	0.6 ±0.05	232mg
RNV 1/2	9.0 ±1.0	—	3.1 ±0.5		0.7 ±0.05	412mg
RNV 1	12.0 ^{+1.0} _{-1.5}	6.0min.	4.0 ±1.0	37 ±2	0.7 ±0.1	703mg

*Value for Reference

•Part Number Description

Example



*Refer to Tape and Packaging information on pages 68~71.
Some code numbers may be added after packing codes.

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RNV

●Ratings

Style	Rated Dissipation at 70°C W	Limiting Element Voltage V	Temperature Coefficient of Resistance 10 ⁻⁶ /°C	Rated Resistance Range	Tolerance on Rated Resistance	Preferred Number Series for Resistors	Isolation Voltage V	Category Temperature Range °C
RNV 1/4	0.25	1,600	±350	91k ohm ~ 6.8M ohm	F (±1%) J (±5%)	E24	500	-55~+155
RNV 1/2	0.5	2,000		100k ohm ~ 8.2M ohm				
RNV 1	1.0		±350	470k ohm ~ 4.7M ohm	J (±5%)	E12		
		-600~+500	5.6M ohm ~ 12M ohm					

Note1. Rated Voltage = $\sqrt{(\text{Rated Dissipation}) \times (\text{Rated Resistance})}$. (d.c. or a.c. r.m.s. Voltage)

Note2. Limiting Element Voltage can only be applied to resistors when the resistance value is equal to or higher than the critical resistance value.

Note3. Critical Resistance Value is the resistance value at which the rated voltage is equal to the limiting element voltage.

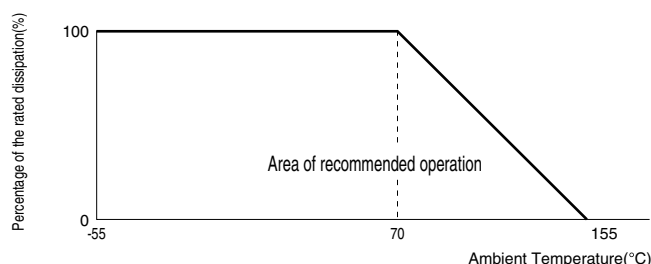
●Derating Curve

The derated values of dissipation for temperatures in excess of 70°C shall be indicated by the following Curve.

●Climatic Category

55/155/56

Lower Category Temperature -55°C
Upper Category Temperature +155°C
Duration of the Damp heat, Steady-State Test 56 days



●Performance Characteristics JIS C 5201-1 : 1998

Description		Requirements	Test Methods
Voltage proof		No breakdown or flashover	Clause 4.7 V-block method 500V a.c., 60s
Variation of resistance with temperature		See Ratings Table	Clause 4.8 Measuring temperature : +20°C/-55°C/ +20°C/+155°C/+20°C
Overload		$\Delta R \leq \pm(0.5\% + 0.05 \text{ ohm})$ No visible damage, legible marking	Clause 4.13 The applied voltage shall be 2.5 times of the rated voltage or following whichever is the less severe, 5s. RNV1/4 : 2,000V RNV1/2 : 3,000V RNV1 : 4,000V
Overloadability		Within ±20%	Conditioned at 40°C, 95%R.H., for 21 days. RNV1/4, 1/2 : Charged to capacitor (0.01μF) for 2.5 seconds. According to following and discharge for 2.5 seconds, total of 10 cycles. RNV1/4 : 100k ohm > R : 2kV 100k ohm ≤ R : 3kV RNV1/2 : 100k ohm ≤ R < 360k ohm : 5kV 360k ohm ≤ R < 1.0M ohm : 7kV 1.0M ohm ≤ R < 8.2M ohm : 10kV RNV1 : Charged 10kV to capacitor (1,000pF) for 1 second and discharge for 4 seconds, total of 50 cycles.
Robustness of terminations	Tensile	$\Delta R \leq \pm(1\% + 0.05 \text{ ohm})$ No visible damage	Clause 4.16.2 10N for 5~10s
	Bending	$\Delta R \leq \pm(1\% + 0.05 \text{ ohm})$ No visible damage	Clause 4.16.3 5N twice
	Torsion	$\Delta R \leq \pm(1\% + 0.05 \text{ ohm})$ No visible damage	Clause 4.16.4 180°C, 2 rotation
Solderability		In accordance with Clause 4.17.4.5	Clause 4.17 235°C, 2s
Resistance to soldering heat		$\Delta R \leq \pm(1\% + 0.05 \text{ ohm})$ No visible damage, legible marking	Clause 4.18 After immersion into the flux, the immersion into solder shall be carried out in Solder bath at 350°C for 3.5s.
Rapid change of temperature		$\Delta R \leq \pm(1\% + 0.05 \text{ ohm})$ No visible damage	Clause 4.19 5 cycles between -55°C and +155°C.
Climatic sequence		$\Delta R \leq \pm(5\% + 0.1 \text{ ohm})$ Insulation resistance : $R \geq 100\text{M ohm}$ No visible damage	Clause 4.23 Dry/Damp heat(12+12h cycle), first cycle./ Cold/Damp heat(12+12h cycle), remaining cycle./ D.C.Load.
Damp test, steady state		$\Delta R \leq \pm(5\% + 0.1 \text{ ohm})$ Insulation resistance : $R \geq 100\text{M ohm}$ No visible damage, legible marking	Clause 4.24 40°C, 95%R.H., 56 days, test a), b) and c) of Clause 4.24.2.1
Endurance at 70°C		$\Delta R \leq \pm(5\% + 0.1 \text{ ohm})$ No visible damage Insulation resistance : $R \geq 1\text{G ohm}$	Clause 4.25.1 Rated voltage, 1.5h "ON", 0.5h "OFF", 70°C, 1,000h.
Endurance at the upper category temperature		$\Delta R \leq \pm(5\% + 0.1 \text{ ohm})$ No visible damage Insulation resistance : $R \geq 1\text{G ohm}$	Clause 4.25.3 155°C, no-load, 1,000h.