

# Metal Oxide Resistors, Special Purpose, High Voltage



## FEATURES

- Low TCR:  $\pm 200$  ppm/ $^{\circ}\text{C}$  standard;  $\pm 100$  ppm/ $^{\circ}\text{C}$ ;  $\pm 50$  ppm/ $^{\circ}\text{C}$  available
- Tolerance:  $\pm 1\%$  standard to 1 G $\Omega$ ;  $\pm 5\%$  above 1 G $\Omega$ ;  $\pm 0.5\%$  available in  $\pm 50$  ppm/ $^{\circ}\text{C}$  only. Special tolerance and/or temperature coefficient matching available.
- High voltage (up to 8 kV)
- For oil bath or open air operation
- Matched sets available
- Special testing available upon request
- Material categorization: For definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)


**RoHS\***  
COMPLIANT

### Note

\* Lead (Pb)-containing terminations are not RoHS-compliant. Exemptions may apply.

STANDARD ELECTRICAL SPECIFICATIONS								
GLOBAL MODEL	HISTORICAL MODEL	POWER RATING			MAXIMUM WORKING VOLTAGE <sup>(2)</sup> V	RESISTANCE RANGE <sup>(3)</sup> $\Omega$	TOLERANCE $\pm\%$	TEMPERATURE COEFFICIENT $\pm$ ppm/ $^{\circ}\text{C}$
		$P_{25^{\circ}\text{C}}$ <sup>(1)</sup> W	$P_{70^{\circ}\text{C}}$ <sup>(1)</sup> W	$P_{125^{\circ}\text{C}}$ <sup>(1)</sup> W				
RNX025	RNX-1/4	0.5	0.36	0.25	750	1M to 22M	0.5, 1, 2, 5, 10	50
						1K to 100M	1, 2, 5, 10	100, 200
						100 to 100K	1, 2, 5, 10	Non-inductive <sup>(4)</sup>
RNX038	RNX-3/8	1.0	0.72	0.5	1.5K	1M to 50M	0.5, 1, 2, 5, 10	50
						1K to 100M	1, 2, 5, 10	100
						1K to 1G	1, 2, 5, 10	200
RNX050	RNX-1/2	1.2	0.86	0.6	2K	100 to 100K	1, 2, 5, 10	Non-inductive <sup>(4)</sup>
						1M to 100M	0.5, 1, 2, 5, 10	50
						1K to 250M	1, 2, 5, 10	100
RNX075	RNX-3/4	2.0	1.44	1.0	3K	1K to 2G	1, 2, 5, 10	200
						100 to 100K	1, 2, 5, 10	Non-inductive <sup>(4)</sup>
						1M to 100M	0.5, 1, 2, 5, 10	50
RNX100	RNX-1	2.5	1.8	1.25	4K	1K to 500M	1, 2, 5, 10	100
						1K to 2G	1, 2, 5, 10	200
						100 to 1M	1, 2, 5, 10	Non-inductive <sup>(4)</sup>
RNX125	RNX-1-1/4	3.0	2.16	1.5	5K	1K to 500M	1, 2, 5, 10	100
						1K to 2G	1, 2, 5, 10	200
						100 to 1M	1, 2, 5, 10	Non-inductive <sup>(4)</sup>
RNX150	RNX-1-1/2	4.0	2.88	2.0	6K	1K to 500M	1, 2, 5, 10	100
						1K to 2G	1, 2, 5, 10	200
						100 to 1M	1, 2, 5, 10	Non-inductive <sup>(4)</sup>
RNX200	RNX-2	5.0	3.6	2.5	8K	1K to 500M	1, 2, 5, 10	100
						1K to 2G	1, 2, 5, 10	200
						100 to 1M	1, 2, 5, 10	Non-inductive <sup>(4)</sup>

### Notes

- All resistance values are calibrated at 100 V<sub>DC</sub>. Calibration at other voltages available.
  - Part marking: Print marked - DALE, model, value, tolerance, TCR, date code (model and date omitted on RNX-1/4)
  - Special modifications:
    - Special preconditioning (power aging, temperature cycling etc.) to customer specifications
    - Non-helixed resistors can be supplied for critical high frequency applications (non-inductive)
- (1) Increase wattage by 25 % for 0.032" (0.813 mm) diameter leads  
 (2) Continuous working voltage shall be  $\sqrt{P \times R}$  or maximum working voltage, whichever is less.  
 (3) For resistance values above and below those listed please contact us  
 (4) Non-inductive  $\pm 200$  ppm/ $^{\circ}\text{C}$  TCR only

TECHNICAL SPECIFICATIONS										
PARAMETER	UNIT	RNX025	RNX038	RNX050	RNX075	RNX100	RNX125	RNX150	RNX200	
Insulation Resistance	$\Omega$								$\geq 10^{11}$	
Category Temperature Range	$^{\circ}\text{C}$	Epoxy coated = - 55/+ 150; silicone coated = - 55/+ 225								

GLOBAL PART NUMBER INFORMATION						
New Global Part Numbering: RNX05010K0KKLB (preferred part numbering format)						
<div style="display: flex; justify-content: space-around; font-weight: bold; font-size: 1.2em;"> <span>R</span><span>N</span><span>X</span><span>0</span><span>5</span><span>0</span><span>1</span><span>0</span><span>K</span><span>0</span><span>K</span><span>K</span><span>L</span><span>B</span><span> </span><span> </span><span> </span><span> </span> </div>						
GLOBAL MODEL (See Standard Electrical Specifications table)	RESISTANCE VALUE <b>R</b> = $\Omega$ <b>K</b> = $\text{k}\Omega$ <b>M</b> = $\text{M}\Omega$ <b>G</b> = $\text{G}\Omega$ <b>910R</b> = 910 $\Omega$ <b>10M0</b> = 10 $\text{M}\Omega$ <b>1G00</b> = 1.0 $\text{G}\Omega$	TOLERANCE CODE <b>D</b> = $\pm 0.5\%$ <b>F</b> = $\pm 1\%$ <b>G</b> = $\pm 2\%$ <b>J</b> = $\pm 5\%$ <b>K</b> = $\pm 10\%$	TEMP. COEFFICIENT <b>H</b> = 50 ppm <b>K</b> = 100 ppm <b>N</b> = 200 ppm	PACKAGING <sup>(1)</sup> <b>EL</b> = Lead (Pb)-free, lacer <b>EE</b> = Lead (Pb)-free, T/R (1/4, 3/8, 1/2, 3/4, 1 only) <b>LB</b> = Tin/lead, lacer <b>RC</b> = Tin/lead, T/R (1/4, 3/8, 1/2, 3/4, 1 only)	CONSTRUCTION Blank = Standard <b>N</b> = Non-inductive <b>P</b> = 0.032" $\varnothing$ leads	SPECIAL Blank = Standard (Dash number) (Up to 3 digits) From <b>1 to 999</b> as applicable
Historical Part Number example: RNX-1/210K0KK (will continue to be accepted)						
RNX-1/2		10K0	K	K	L05	
HISTORICAL MODEL	CONSTRUCTION	RESISTANCE VALUE	TOLERANCE CODE	TEMP. COEFFICIENT	PACKAGING	

**Notes**

- (1) Some packaging codes are model specific
- For additional information on packaging, refer to the Through-Hole Resistor Packaging document ([www.vishay.com/doc?31544](http://www.vishay.com/doc?31544)).

DIMENSIONS in inches (millimeters)			
	GLOBAL MODEL	L	L <sub>1</sub> MAX.
	RNX025	0.290 ± 0.020 (7.37 ± 0.51)	0.358 (9.09)
	RNX038	0.420 ± 0.020 (10.67 ± 0.51)	0.470 (11.94)
	RNX050	0.540 ± 0.020 (13.72 ± 0.51)	0.595 (15.11)
	RNX075	0.790 ± 0.020 (20.07 ± 0.51)	0.845 (21.46)
	RNX100	1.040 ± 0.020 (26.42 ± 0.51)	1.100 (27.94)
	RNX125	1.290 ± 0.020 (32.77 ± 0.51)	1.350 (34.29)
	RNX150	1.540 ± 0.020 (39.12 ± 0.51)	1.600 (40.64)
RNX200	2.040 ± 0.020 (51.82 ± 0.51)	2.100 (53.34)	

**Note**

- (1) Available with 0.032" (0.813 mm) leads  $\pm 0.002$ " (0.051 mm)



MATERIAL SPECIFICATIONS	
Element	High temperature fired cermet film
Core	High purity 96 % alumina
Coating	Flame-retardant epoxy on RNX025 and RNX038, flameproof silicone on RNX050 to RNX200
Termination	Standard lead material is solder-coated copper. Solderable and weldable.

MECHANICAL SPECIFICATIONS	
Terminal Strength	5 pound pull test
Solderability	Continuous satisfactory coverage when tested in accordance with MIL-STD-202, method 208





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