

# 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)**

R
N
X
0
5
0
1
0
K
0
K
K
L
B
 
 
 
 

GLOBAL MODEL (See Standard Electrical Specifications table)	RESISTANCE VALUE	TOLERANCE CODE	TEMP. COEFFICIENT	PACKAGING <sup>(1)</sup>	CONSTRUCTION	SPECIAL
	<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 $\text{G}\Omega$	<b>D</b> = $\pm 0.5\%$ <b>F</b> = $\pm 1\%$ <b>G</b> = $\pm 2\%$ <b>J</b> = $\pm 5\%$ <b>K</b> = $\pm 10\%$	<b>H</b> = 50 ppm <b>K</b> = 100 ppm <b>N</b> = 200 ppm	<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)	Blank = Standard <b>N</b> = Non-inductive <b>P</b> = 0.032" $\varnothing$ leads	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)

$1.50 \pm 0.125$  (38.10  $\pm$  3.18)  
 $0.025 \pm 0.002$  <sup>(1)</sup> (0.64  $\pm$  0.05)  
 $0.140 + 0.015 - 0.010$  (3.56 + 0.38 - 0.25)

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