

# 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><br>V | RESISTANCE RANGE <sup>(3)</sup><br>$\Omega$ | TOLERANCE<br>$\pm\%$ | TEMPERATURE COEFFICIENT<br>$\pm$ ppm/ $^{\circ}\text{C}$ |
|                                    |                  | $P_{25^{\circ}\text{C}}$ <sup>(1)</sup><br>W | $P_{70^{\circ}\text{C}}$ <sup>(1)</sup><br>W | $P_{125^{\circ}\text{C}}$ <sup>(1)</sup><br>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<br>(See Standard Electrical Specifications table)   | RESISTANCE VALUE<br><b>R</b> = $\Omega$<br><b>K</b> = $\text{k}\Omega$<br><b>M</b> = $\text{M}\Omega$<br><b>G</b> = $\text{G}\Omega$<br><b>910R</b> = 910 $\Omega$<br><b>10M0</b> = 10 $\text{M}\Omega$<br><b>1G00</b> = 1.0 $\text{G}\Omega$ | TOLERANCE CODE<br><b>D</b> = $\pm 0.5\%$<br><b>F</b> = $\pm 1\%$<br><b>G</b> = $\pm 2\%$<br><b>J</b> = $\pm 5\%$<br><b>K</b> = $\pm 10\%$ | TEMP. COEFFICIENT<br><b>H</b> = 50 ppm<br><b>K</b> = 100 ppm<br><b>N</b> = 200 ppm | PACKAGING <sup>(1)</sup><br><b>EL</b> = Lead (Pb)-free, lacer<br><b>EE</b> = Lead (Pb)-free, T/R (1/4, 3/8, 1/2, 3/4, 1 only)<br><b>LB</b> = Tin/lead, lacer<br><b>RC</b> = Tin/lead, T/R (1/4, 3/8, 1/2, 3/4, 1 only) | CONSTRUCTION<br>Blank = Standard<br><b>N</b> = Non-inductive<br><b>P</b> = 0.032" $\varnothing$ leads | SPECIAL<br>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**

- <sup>(1)</sup> 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**

- <sup>(1)</sup> 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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