

Metal Oxide Resistors, Special Purpose, High Voltage



FEATURES

- Low TCR: ± 200 ppm/ $^{\circ}\text{C}$ standard; ± 100 ppm/ $^{\circ}\text{C}$; ± 50 ppm/ $^{\circ}\text{C}$ available
- Tolerance: $\pm 1\%$ standard to 1 G Ω ; $\pm 5\%$ above 1 G Ω ; $\pm 0.5\%$ available in ± 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


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 ⁽²⁾ V | RESISTANCE RANGE ⁽³⁾ Ω | TOLERANCE $\pm\%$ | TEMPERATURE COEFFICIENT \pm ppm/ $^{\circ}\text{C}$ |
| | | $P_{25^{\circ}\text{C}}$ ⁽¹⁾ W | $P_{70^{\circ}\text{C}}$ ⁽¹⁾ W | $P_{125^{\circ}\text{C}}$ ⁽¹⁾ 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 ⁽⁴⁾ |
| 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 ⁽⁴⁾ |
| | | | | | | 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 ⁽⁴⁾ |
| | | | | | | 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 ⁽⁴⁾ |
| 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 ⁽⁴⁾ |
| 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 ⁽⁴⁾ |
| 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 ⁽⁴⁾ |

Notes

- All resistance values are calibrated at 100 V_{DC}. 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 ± 200 ppm/ $^{\circ}\text{C}$ TCR only

| TECHNICAL SPECIFICATIONS | | | | | | | | | | |
|----------------------------|--------------------|---|--------|--------|--------|--------|--------|--------|----------------|--|
| PARAMETER | UNIT | RNX025 | RNX038 | RNX050 | RNX075 | RNX100 | RNX125 | RNX150 | RNX200 | |
| Insulation Resistance | Ω | | | | | | | | $\geq 10^{11}$ | |
| 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 ⁽¹⁾ | CONSTRUCTION | SPECIAL |
|--|--|--|--|--|---|---|
| | R = Ω K = $\text{k}\Omega$ M = $\text{M}\Omega$ G = $\text{G}\Omega$ 910R = 910 Ω 10M0 = 10 $\text{M}\Omega$ 1G00 = 1.0 $\text{G}\Omega$ | D = $\pm 0.5\%$ F = $\pm 1\%$ G = $\pm 2\%$ J = $\pm 5\%$ K = $\pm 10\%$ | H = 50 ppm K = 100 ppm N = 200 ppm | EL = Lead (Pb)-free, lacer EE = Lead (Pb)-free, T/R (1/4, 3/8, 1/2, 3/4, 1 only) LB = Tin/lead, lacer RC = Tin/lead, T/R (1/4, 3/8, 1/2, 3/4, 1 only) | Blank = Standard N = Non-inductive P = 0.032" \varnothing leads | Blank = Standard (Dash number) (Up to 3 digits) From 1 to 999 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).

DIMENSIONS in inches (millimeters)

1.50 ± 0.125 (38.10 \pm 3.18)
 0.025 ± 0.002 ⁽¹⁾ (0.64 \pm 0.05)
 $0.140 \pm 0.015 - 0.010$ (3.56 \pm 0.38 - 0.25)

| GLOBAL MODEL | L | L ₁ 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 ± 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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