

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: $\pm 1\%$; $\pm 2\%$; $\pm 5\%$; $\pm 10\%$
- High Voltage (up to 45 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/ $^{\circ}\text{C}$
		$P_{25^{\circ}\text{C}}$ W ⁽¹⁾	$P_{70^{\circ}\text{C}}$ W ⁽¹⁾	$P_{125^{\circ}\text{C}}$ W ⁽¹⁾				
ROX050	ROX-1/2	2.0	1.4	1.0	2K	1M to 100M	1, 2, 5, 10	50
						1K to 100M	1, 2, 5, 10	100
						1K to 1G	1, 2, 5, 10	200
ROX075	ROX-3/4	3.0	2.16	1.5	5K	1M to 100M	1, 2, 5, 10	50
						1K to 500M	1, 2, 5, 10	100
						1K to 3G	1, 2, 5, 10	200
ROX100	ROX-1	4.0	2.88	2.0	7.5K	100 to 1M	1, 2, 5, 10	Non-inductive ⁽⁴⁾
						1M to 100M	1, 2, 5, 10	50
						1K to 500M	1, 2, 5, 10	100
ROX150	ROX-1-1/2	5.0	3.6	2.5	11K	1K to 3G	1, 2, 5, 10	200
						100 to 1M	1, 2, 5, 10	Non-inductive ⁽⁴⁾
						1M to 100M	1, 2, 5, 10	50
ROX200	ROX-2	6.0	4.32	3.0	15K	1K to 500M	1, 2, 5, 10	100
						1K to 3G	1, 2, 5, 10	200
						100 to 1M	1, 2, 5, 10	Non-inductive ⁽⁴⁾
ROX300	ROX-3	10.0	7.2	5.0	22.5K	1M to 500M	1, 2, 5, 10	50
						1K to 1G	1, 2, 5, 10	100
						1K to 3G	1, 2, 5, 10	200
ROX400	ROX-4	12.0	8.64	6.0	30K	400 to 10M	1, 2, 5, 10	Non-inductive ⁽⁴⁾
						1M to 500M	1, 2, 5, 10	50
						1K to 1G	1, 2, 5, 10	100
ROX500	ROX-5	16.0	11.52	8.0	37.5K	1K to 3G	1, 2, 5, 10	200
						500 to 10M	1, 2, 5, 10	Non-inductive ⁽⁴⁾
						1M to 500M	1, 2, 5, 10	50
ROX600	ROX-6	20.0	14.4	10.0	45K	1K to 1G	1, 2, 5, 10	100
						1K to 3G	1, 2, 5, 10	200
						500 to 10M	1, 2, 5, 10	Non-inductive ⁽⁴⁾

Notes

- All resistance values are calibrated at 100 V_{DC}. Calibration at other voltages available.
- $\pm 1\%$ not available above 1 G Ω
- Part marking: Print marked - Dale, model, value, tolerance, temperature coefficient, date code
- (1) Increase wattage by 40 % for 0.040" (1.02 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	ROX050	ROX075	ROX100	ROX150	ROX200	ROX300	ROX400	ROX500	ROX600
Insulation Resistance	Ω	$\geq 10^{11}$								
Category Temperature Range	$^{\circ}\text{C}$	Epoxy coated = - 55/+ 180; Silicone coated = - 55/+ 230								

GLOBAL PART NUMBER INFORMATION

New Global Part Numbering: ROX300100MGNF5 (preferred part numbering format)

R O X 3 0 0 1 0 0 M G N F 5

GLOBAL MODEL (See Electrical Specifications table)	RESISTANCE VALUE R = Ω K = kΩ M = MΩ G = GΩ 910R = 910 Ω 10M0 = 10 MΩ 1G00 = 1.0 GΩ	TOLERANCE CODE F = ± 1 % G = ± 2 % J = ± 5 % K = ± 10 %	TEMP. COEFFICIENT H = 50 ppm K = 100 ppm N = 200 ppm	PACKAGING (1) EL = Lead (Pb)-free, lacer (all, except 3, 4, 5, 6) EE = Lead (Pb)-free, T/R (1/2, 3/4, 1 only) EM = Lead (Pb)-free, foam (3, 4, 5, 6 only) LB = Tin/lead, lacer (all, except 3, 4, 5, 6) RF = Tin/lead, T/R (1/2, 3/4, 1 only) F5 = Tin/lead, foam (3, 4, 5, 6 only)	CONSTRUCTION (Up to 2 digits) Blank = Standard N = Non-inductive P = 0.040 Ø leads S = Solid body, axial T = Threaded terminals Y = One end axial, one threaded terminal	SPECIAL Blank = Standard (Dash number) (Up to 3 digits) From 1 to 999 as applicable
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Historical Part Number example: ROX-3100MGN (will continue to be accepted)

ROX-3		100M	G	N	F05
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)



GLOBAL MODEL	STYLE N, P, S		STYLE T	STYLE Y
	A	B	C	C MAX.
ROX050	0.550 ± 0.032 (13.97 ± 0.81)	0.700 (17.78)	N/A	N/A
ROX075	0.800 ± 0.032 (20.32 ± 0.81)	0.900 (22.86)	1.168 ± 0.022 (29.66 ± 0.56)	1.050 (26.67)
ROX100	0.920 ± 0.032 (23.37 ± 0.81)	1.020 (25.91)	1.288 ± 0.022 (32.72 ± 0.56)	1.170 (29.72)
ROX150	1.550 ± 0.032 (39.37 ± 0.81)	1.650 (41.91)	1.918 ± 0.022 (48.72 ± 0.56)	1.800 (45.72)
ROX200	2.050 ± 0.032 (52.07 ± 0.81)	2.150 (54.61)	2.418 ± 0.022 (61.42 ± 0.56)	2.300 (58.42)
ROX300	3.050 ± 0.032 (77.47 ± 0.81)	3.150 (80.01)	3.418 ± 0.022 (86.82 ± 0.56)	3.300 (83.82)
ROX400	4.050 ± 0.032 (102.87 ± 0.81)	4.150 (105.41)	4.418 ± 0.022 (112.22 ± 0.56)	4.300 (109.22)
ROX500	5.050 ± 0.032 (128.27 ± 0.81)	5.150 (130.81)	5.418 ± 0.022 (137.62 ± 0.56)	5.300 (134.62)
ROX600	6.050 ± 0.032 (153.67 ± 0.81)	6.150 (156.21)	6.418 ± 0.022 (163.02 ± 0.56)	6.300 (160.02)



MECHANICAL SPECIFICATIONS	
Terminal Strength	10 pound pull test
Solderability	Continuous satisfactory coverage when tested in accordance with MIL-STD-202, Method 208

MATERIAL SPECIFICATIONS	
Element	High temperature fired cermet film
Core	High purity 96 % alumina, tubular or solid
Coating	Blue flame-retardant epoxy on ROX050 thru ROX200. Black flameproof silicone on ROX300 thru ROX600
Termination	Standard lead material is solder-coated copper; solderable and weldable. 0.032" (0.813 mm) style P 0.040" (1.02 mm) available



VOLTAGE COEFFICIENT



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