

# 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
- Tolerances:  $\pm 1\%$ ,  $\pm 2\%$ ,  $\pm 5\%$ ,  $\pm 10\%$
- High Voltage (up to 45 kV)
- For oil bath or open air operation
- Matched sets available
- Special testing available upon request
- Compliant to RoHS directive 2002/95/EC



RoHS\*  
COMPLIANT

STANDARD ELECTRICAL SPECIFICATIONS									
GLOBAL MODEL	HISTORICAL MODEL	POWER RATING			VOLTAGE RATING $V_{\equiv}$	RESISTANCE RANGE $\Omega$ <sup>(2)</sup>			
		$P_{25^{\circ}\text{C}}$ W <sup>(1)</sup>	$P_{70^{\circ}\text{C}}$ W <sup>(1)</sup>	$P_{125^{\circ}\text{C}}$ W <sup>(1)</sup>		200 ppm	100 ppm	50 ppm	NON-INDUCTIVE <sup>(3)</sup>
ROX050	ROX-1/2	2.0	1.4	1.0	2 kV	1K to 1G	1K to 100M	1M to 100M	-
ROX075	ROX-3/4	3.0	2.16	1.5	5 kV	1K to 3G	1K to 500M	1M to 100M	100R to 1M
ROX100	ROX-1	4.0	2.88	2.0	7.5 kV	1K to 3G	1K to 500M	1M to 100M	100R to 1M
ROX150	ROX-1-1/2	5.0	3.6	2.5	11 kV	1K to 3G	1K to 500M	1M to 100M	100R to 1M
ROX200	ROX-2	6.0	4.32	3.0	15 kV	1K to 3G	1K to 1G	1M to 500M	100R to 1M
ROX300	ROX-3	10.0	7.2	5.0	22.5 kV	1K to 3G	1K to 1G	1M to 500M	400R to 10M
ROX400	ROX-4	12.0	8.64	6.0	30 kV	1K to 3G	1K to 1G	1M to 500M	500R to 10M
ROX500	ROX-5	16.0	11.52	8.0	37.5 kV	1K to 3G	1K to 1G	1M to 500M	500R to 10M
ROX600	ROX-6	20.0	14.4	10.0	45 kV	1K to 3G	1K to 1G	1M to 500M	500R to 10M

**Notes**

- (1) Increase wattage by 40 % for 0.040" [1.02 mm] diameter leads
- (2) For resistance values above and below those listed please contact us
- (3) Non inductive  $\pm 200$  ppm/ $^{\circ}\text{C}$  TCR only
- All resistance values are calibrated at 100 V<sub>DC</sub>. Calibration at other voltages available.
- $\pm 1\%$  not available above 1 G $\Omega$
- Part marking: Print marked - DALE, model, value, tolerance, temperature coefficient, date code

TECHNICAL SPECIFICATIONS										
PARAMETER	UNIT	ROX050	ROX075	ROX100	ROX150	ROX200	ROX300	ROX400	ROX500	ROX600
Insulation Resistance	$\Omega$	$\geq 10^{11}$								
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					
---	---	---	---	---	---	---	---	---	---	---	---	---	---	--	--	--	--	--

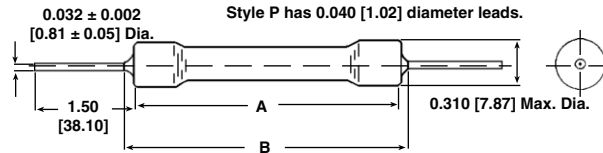
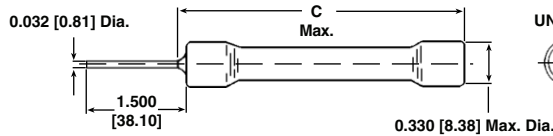
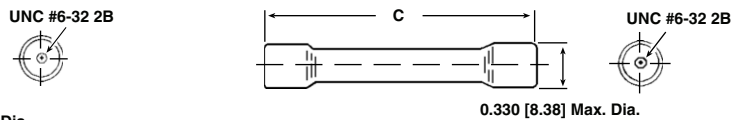
GLOBAL MODEL (See Electrical Specifications table)	RESISTANCE VALUE	TOLERANCE CODE	TEMP. COEFFICIENT	PACKAGING <sup>(4)</sup>	CONSTRUCTION	SPECIAL
	R = Decimal K = Thousand M = Million G = Billion 910R = 910 $\Omega$ 10M0 = 10 M $\Omega$ 1G00 = 1.0 G $\Omega$	F = $\pm 1\%$ G = $\pm 2\%$ J = $\pm 5\%$ K = $\pm 10\%$	H = 50 ppm K = 100 ppm N = 200 ppm	EL = Lead (Pb)-free, Lacer EE = Lead (Pb)-free, T/R (1000 pieces) EM = Lead (Pb)-free, Foam LB = Tin/Lead, Lacer RF = Tin/Lead, T/R (1000 pieces) F5 = Tin/Lead, Foam	(Up to 2 digits) Blank = Standard N = Non-inductive P = 0.040 $\varnothing$ leads S = Solid Body, Axial T = Threaded Terminals Y = One end Axial, one Threaded Terminal	Blank = Standard (Dash number) (Up to 3 digits) From 1 to 999 as applicable

Historical Part Number example: ROX-3100MGN (will continue to be accepted)

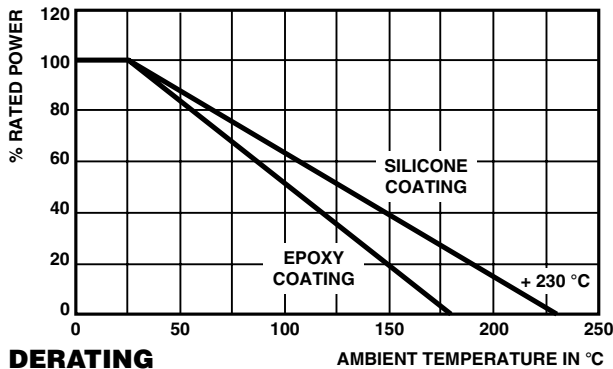
ROX-3		100M	G	N	F05
HISTORICAL MODEL	CONSTRUCTION	RESISTANCE VALUE	TOLERANCE CODE	TEMP. COEFFICIENT	PACKAGING

**Notes**

- (4) Some packaging codes are model specific.
- \* Pb containing terminations are not RoHS compliant, exemptions may apply

**DIMENSIONS**
**Styles N, P and S**

**Style Y**

**Style T**


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 [29.72 ± 0.56]	1.050 [26.67]
ROX100	0.920 ± 0.032 [23.37 ± 0.81]	1.020 [25.91]	1.288 ± 0.022 [32.77 ± 0.56]	1.170 [29.72]
ROX150	1.550 ± 0.032 [39.37 ± 0.81]	1.650 [41.91]	1.918 ± 0.022 [48.77 ± 0.56]	1.800 [45.72]
ROX200	2.050 ± 0.032 [52.07 ± 0.81]	2.150 [54.61]	2.418 ± 0.022 [61.47 ± 0.56]	2.300 [58.42]
ROX300	3.050 ± 0.032 [77.47 ± 0.81]	3.150 [80.01]	3.418 ± 0.022 [86.87 ± 0.56]	3.300 [83.82]
ROX400	4.050 ± 0.032 [102.87 ± 0.81]	4.150 [105.41]	4.418 ± 0.022 [112.27 ± 0.56]	4.300 [109.22]
ROX500	5.050 ± 0.032 [128.27 ± 0.81]	5.150 [130.81]	5.418 ± 0.022 [137.67 ± 0.56]	5.300 [134.62]
ROX600	6.050 ± 0.032 [153.67 ± 0.81]	6.150 [156.21]	6.418 ± 0.022 [163.07 ± 0.56]	6.300 [160.02]


**DERATING**
**MECHANICAL SPECIFICATIONS**
**Terminal Strength**

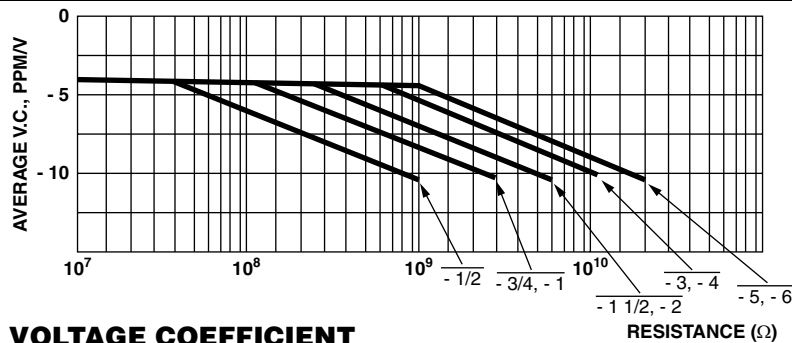
10 pound pull test

**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**



## Disclaimer

All product specifications and data are subject to change without notice.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained herein or in any other disclosure relating to any product.

Vishay disclaims any and all liability arising out of the use or application of any product described herein or of any information provided herein to the maximum extent permitted by law. The product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein, which apply to these products.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications unless otherwise expressly indicated. Customers using or selling Vishay products not expressly indicated for use in such applications do so entirely at their own risk and agree to fully indemnify Vishay for any damages arising or resulting from such use or sale. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

Product names and markings noted herein may be trademarks of their respective owners.