

ROX Vishay Dale

Metal Oxide Resistors, Special Purpose, High Voltage



The ROX is an excellent choice for high voltage systems with the advantage of high wattage and space saving dimensions.

FEATURES

- Low TCR: ± 200 ppm/°C standard; ± 100 ppm/°C, ± 50 ppm/°C available; non-inductive only available with TC of ± 200 ppm/°C
- Tolerance: ± 1 %; ± 2 %; ± 5 %; ± 10 %
- High voltage (up to 45 kV)
- For oil bath or open air operation
- Standard ROX product is coated; optional uncoated version of the ROX product is available on request
- Matched sets available
- · Special testing available upon request
- Applications: HV power supplies; laboratory equipment; power control; aeronautical
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

Note

This datasheet provides information about parts that are RoHS-compliant and / or parts that are non RoHS-compliant. For example, parts with lead (Pb) terminations are not RoHS-compliant. Please see the information / tables in this datasheet for details

STANDARD ELECTRICAL SPECIFICATIONS									
GLOBAL MODEL	HISTORICAL MODEL	PC <i>P</i> 25 ℃ W	WER RAT P _{70 °C} W	'ING P _{125 °C} W	MAXIMUM WORKING VOLTAGE ⁽¹⁾ V	RESISTANCE RANGE ⁽²⁾ Ω	TOLERANCE ± %	TEMPERATURE COEFFICIENT ⁽³⁾ ± ppm/°C	
	ROX-1/2	2	1.4	1	2К	1M to 100M	1, 2, 5, 10	50	
ROX050						1k to 100M	1, 2, 5, 10	100	
						100 to 1G	1, 2, 5, 10	200	
		2.8	1.96	1.4	2К	1M to 100M	1, 2, 5, 10	50	
ROX050P	ROX-1/2P					1k to 100M	1, 2, 5, 10	100	
						100 to 1G	1, 2, 5, 10	200	
	ROX-3/4		2.16	1.5	5K	1M to 100M	1, 2, 5, 10	50	
ROX075		3				1k to 500M	1, 2, 5, 10	100	
						100 to 3G	1, 2, 5, 10	200	
ROX075N	ROX-3/4N	3	2.16	1.5	5K	100 to 1M	1, 2, 5, 10	200	
ROX075P	ROX-3/4P	4.2	3.02	2.1	5K	1M to 100M	1, 2, 5, 10	50	
						1k to 500M	1, 2, 5, 10	100	
						100 to 3G	1, 2, 5, 10	200	
ROX075NP	ROX-3/4NP	4.2	3.02	2.1	5K	100 to 1M	1, 2, 5, 10	200	
ROX100	ROX-1	4	2.88	2	7.5K	1M to 100M	1, 2, 5, 10	50	
						1k to 500M	1, 2, 5, 10	100	
						150 to 3G	1, 2, 5, 10	200	
ROX100N	ROX-1N	4	2.88	2	7.5K	100 to 1M	1, 2, 5, 10	200	
ROX100P	ROX-1P	X-1P 5.6	4.03	2.8	7.5K	1M to 100M	1, 2, 5, 10	50	
						1k to 500M	1, 2, 5, 10	100	
						150 to 3G	1, 2, 5, 10	200	
ROX100NP	ROX-1NP	5.6	4.03	2.8	7.5K	100 to 1M	1, 2, 5, 10	200	
ROX150	ROX-1-1/2	5	3.6	2.5	11K	1M to 100M	1, 2, 5, 10	50	
						1k to 500M	1, 2, 5, 10	100	
						200 to 3G	1, 2, 5, 10	200	
ROX150N	ROX-1-1/2N	5	3.6	2.5	11K	100 to 1M	1, 2, 5, 10	200	

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ROX

Vishay Dale

STANDARD ELECTRICAL SPECIFICATIONS									
GLOBAL	HISTORICAL MODEL	POWER RATING			MAXIMUM WORKING	RESISTANCE	TOLERANCE	TEMPERATURE	
MODEL		P _{25 °C} W	P _{70 °C} W	P _{125 °C} ₩	VOLTAGE ⁽¹⁾ V	RANGE ⁽²⁾ Ω	± %	COEFFICIENT ⁽³⁾ ± ppm/°C	
						1M to 100M	1, 2, 5, 10	50	
ROX150P	ROX-1-1/2P	7	5.04	3.5	11K	1k to 500M	1, 2, 5, 10	100	
						200 to 3G	1, 2, 5, 10	200	
ROX150NP	ROX-1-1/2NP	7	5.04	3.5	11K	100 to 1M	1, 2, 5, 10	200	
		6	4.32	3	15K	1M to 500M	1, 2, 5, 10	50	
ROX200	ROX-2					1k to 1G	1, 2, 5, 10	100	
						205 to 3G	1, 2, 5, 10	200	
ROX200N	ROX-2N	6	4.32	3	15K	100 to 1M	1, 2, 5, 10	200	
						1M to 500M	1, 2, 5, 10	50	
ROX200P	ROX-2P	8.4	6.05	4.2	15K	1k to 1G	1, 2, 5, 10	100	
						205 to 3G	1, 2, 5, 10	200	
ROX200NP	ROX-2NP	8.4	6.05	4.2	15K	100 to 1M	1, 2, 5, 10	200	
						1M to 500M	1, 2, 5, 10	50	
ROX300	ROX-3	10	7.2	5	22.5K	1k to 1G	1, 2, 5, 10	100	
						330 to 3G	1, 2, 5, 10	200	
ROX300N	ROX-3N	10	7.2	5	22.5K	400 to 10M	1, 2, 5, 10 200		
	ROX-3P					1M to 500M	1, 2, 5, 10	50	
ROX300P		14	10.1	7	22.5K	1k to 1G	1, 2, 5, 10	100	
						330 to 3G	1, 2, 5, 10	200	
ROX300NP	ROX-3NP	14	10.1	7	22.5K	400 to 10M	1, 2, 5, 10	200	
ROX400	ROX-4	12	8.64	6	зок	1M to 500M	1, 2, 5, 10	50	
						1k to 1G	1, 2, 5, 10	100	
						600 to 3G	1, 2, 5, 10	200	
ROX400N	ROX-4N	12	8.64	6	30K	500 to 10M	1, 2, 5, 10	200	
ROX400P		16.8	12.1	8.4	30К	1M to 500M	1, 2, 5, 10	50	
	ROX-4P					1k to 1G	1, 2, 5, 10	100	
						600 to 3G	1, 2, 5, 10	200	
ROX400NP	ROX-4NP	16.8	12.1	8.4	30K	500 to 10M	1, 2, 5, 10	200	
	ROX-5	16	11.5	8	37.5K	1M to 500M	1, 2, 5, 10	50	
ROX500						1k to 1G	1, 2, 5, 10	100	
						750 to 3G	1, 2, 5, 10	200	
ROX500N	ROX-5N	16	11.5	8	37.5K	500 to 10M	1, 2, 5, 10	200	
						1M to 500M	1, 2, 5, 10	50	
ROX500P	ROX-5P	22.4	16.1	11.2	37.5K	1k to 1G	1, 2, 5, 10	100	
						750 to 3G	1, 2, 5, 10	200	
ROX500NP	ROX-5NP	22.4	16.1	11.2	37.5K	500 to 10M	1, 2, 5, 10	200	
ROX600	ROX-6	20	14.4	10	45K	1M to 500M	1, 2, 5, 10	50	
						1k to 1G	1, 2, 5, 10	100	
						850 to 3G	1, 2, 5, 10	200	
ROX600N	ROX-6N	20	14.4	10	45K	500 to 10M	1, 2, 5, 10	200	
		ROX-6P 28	20.2	14	45K	1M to 500M	1, 2, 5, 10	50	
ROX600P	ROX-6P					1k to 1G	1, 2, 5, 10	100	
						850 to 3G	1, 2, 5, 10	200	
ROX600NP	ROX-6NP	28	20.2	14	45K	500 to 10M	1, 2, 5, 10	200	

Notes

Resistance values of 1 k Ω and below are calibrated at 1 V_{DC}, values above 1 k Ω up to 100 k Ω are calibrated at 10 V_{DC}, and values above 100 k Ω 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⁾ Continuous working voltage shall be $\sqrt{P \times R}$ or maximum working voltage, whichever is less

⁽²⁾ For resistance values above and below those listed please contact us

(3) Typical TCR results

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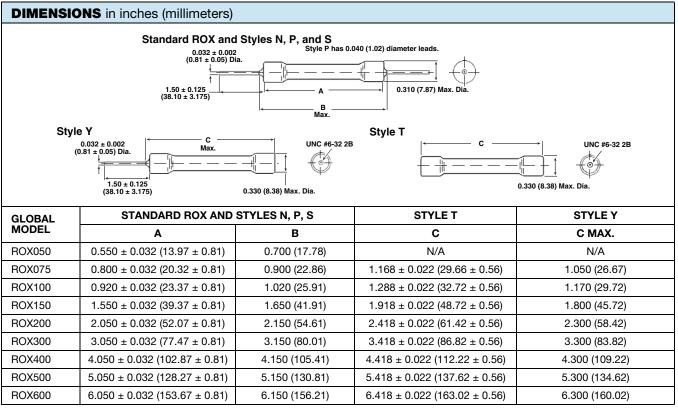
GLOBAL PART NUMBER INFORMATION							
New Global Part Numbering: ROX300100MGNF5 (preferred part numbering format) R O X 3 O 1 O M G N F 5							
GLOBAL RESISTANCE TOLERANCE TEMP. MODEL VALUE CODE COEFFICIENT	PACKAGING (1) CONSTRUCTION SPECIAL						
$ \begin{array}{c} (\text{see Electrical} \\ \text{Specifications} \\ \text{table}) \end{array} \begin{array}{c} \mathbf{R} = \Omega \\ \mathbf{K} = k\Omega \\ \mathbf{M} = M\Omega \\ \mathbf{G} = G\Omega \\ \mathbf{910R} = 910 \ \Omega \\ \mathbf{10M0} = 10 \ M\Omega \\ \mathbf{1G00} = 1.0 \ G\Omega \end{array} \end{array} \begin{array}{c} \mathbf{F} = \pm 1 \ \% \\ \mathbf{G} = \pm 2 \ \% \\ \mathbf{J} = \pm 5 \ \% \\ \mathbf{K} = \pm 10 \ \% \end{array} \begin{array}{c} \mathbf{H} = 50 \ \text{ppm} \\ \mathbf{K} = 100 \ \text{ppm} \\ \mathbf{N} = 200 \ \text{ppm} \end{array} $	$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$						
Historical Part Number example: ROX-3100MGN (will continue to be accepted)							
ROX-3100MHISTORICAL MODELCONSTRUCTIONRESISTANCE VALUE	GNF05TOLERANCETEMP. COEFFICIENTPACKAGING						

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)

TECHNICAL SPECIFICATIONS										
PARAMETER	UNIT	ROX050	ROX075	ROX100	ROX150	ROX200	ROX300	ROX400	ROX500	ROX600
Insulation Resistance	Ω	≥ 10 ¹¹								
Category Temperature Range	°C	Epoxy coated = -55 / +180; silicone coated = -55 / +230								



Note

All dimensions given are for the standard coated version of the ROX parts

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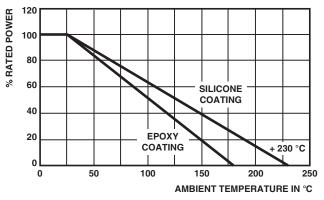
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ROX Vishay Dale

10 pound pull test

DERATING



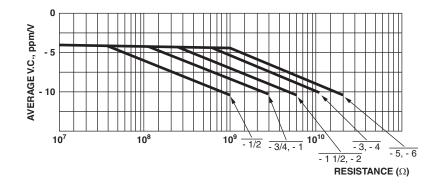
Solderability Continuous satisfactory coverage when tested in accordance with MIL-STD-202, Method 208 MATERIAL SPECIFICATIONS Element High temperature fired cermet film

MECHANICAL SPECIFICATIONS

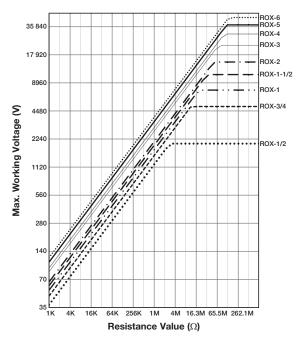
Terminal Strength

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



MAXIMUM WORKING VOLTAGE



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