Wirewound Resistor, Ultra Precision, Epoxy Molded, Axial Lead

FEATURES

- Resistance values up to 6 MΩ
- Resistance tolerances down to ± 0.005 %
- Tighter tolerances and lower resistance values available, please contact factory
- Temperature coefficients down to ± 2 ppm/°C, and up to 6000 ppm/°C
- Matched resistance sets available in tolerances down to ± 0.001 %, and in temperature coefficients down to ± 0.5 ppm/°C, please contact factory
- Custom design capability available, please contact factory
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

Pb-free
e3
RoHS COMPLIANT
HALOGEN FREE GREEN (5-2008)

STANDARD ELECTRICAL SPECIFICATIONS

GLOBAL MODEL	POWER RATING W (1)	RESISTANCE RANGE Ω ± 0.1 %, ± 0.25 %, ± 0.5 %, ± 1 %	RESISTANCE RANGE Ω ± 0.05 %, ± 0.1 %, ± 0.25 %, ± 0.5 %, ± 1 %	RESISTANCE RANGE Ω ± 0.01 %, ± 0.05 %, ± 0.1 %, ± 0.25 %, ± 0.5 %, ± 1 %	RESISTANCE RANGE Ω ± 0.005 %, ± 0.01 %, ± 0.05 %, ± 0.1 %, ± 0.25 %, ± 0.5 %, ± 1 %	MAXIMUM WORKING VOLTAGE V (2)
MR9352	0.750	1 to 6.0M	5 to 6.0M	50 to 6.0M	1K to 6.0M	600
MR9353	0.500	1 to 3.8M	5 to 3.8M	50 to 3.8M	1K to 3.8M	400
MR9354	0.330	1 to 2.5M	5 to 2.5M	50 to 2.5M	1K to 2.5M	400
MR9355	0.250	1 to 1.2M	5 to 1.2M	50 to 1.2M	1K to 1.2M	300
MR9356	0.200	1 to 1.0M	5 to 1.0M	50 to 1.0M	1K to 1.0M	200
MR9357	1.000	1 to 6.0M	5 to 6.0M	50 to 6.0M	1K to 6.0M	800
MR9358	1.500	1 to 6.0M	5 to 6.0M	50 to 6.0M	1K to 6.0M	900
MR9359	2.000	1 to 6.0M	5 to 6.0M	50 to 6.0M	1K to 6.0M	1000

Notes

(1) Power rating is based on tolerance, please see derating chart.

(2) The maximum working voltage is the highest voltage that can be applied to the resistor. Below this value, the maximum voltage that can continuously be applied is given by $(P \times R)^{1/2}$.

GLOBAL PART NUMBER INFORMATION

Global Part Numbering example: MR9355500K00AAE66 (visit www.vishay.net SAP parts manual for all options)

M	R	9	3	5	5	5	0	0	K	0	0	A	A	E	6	6	

GLOBAL MODEL (6 digits)	VALUE (6 digits)	TOLERANCE (1 digit)	TC (1 digits)	PACKAGING CODE (3 digits)	SPECIAL (1 digits)
(see Standard Electrical Specifications Global Model column for options)	**R** = decimal **K** = thousand **M** = million **15R000** = 15 Ω **1K5000** = 1.5 kΩ **1M0000** = 1 MΩ	**S** = ± 0.005 % **T** = ± 0.01 % **Q** = ± 0.02 % **A** = ± 0.05 % **B** = ± 0.1 % **C** = ± 0.25 % **D** = ± 0.5 % **F** = ± 1.0 %	**A** = standard, 10 to 30 (W) **B** = 3900 (Q) **C** = 4500 (M) **D** = 6000 (N) **E** = 3500 (P) **Y** = 10 (≥ 1 Ω) **G** = 5 (≥ 10 Ω) **J** = 2 (≥ 100 Ω)	**E66** = lead (Pb)-free bulk pack	(dash number) from **1** to **9** as applicable

Historical Part Number example: MR9355W500K0A

MR9355	W = STANDARD	500 kΩ	0.05 %
HISTORICAL MODEL	TC	RESISTANCE VALUE	TOLERANCE

For technical questions, contact: ww2aresistors@vishay.com

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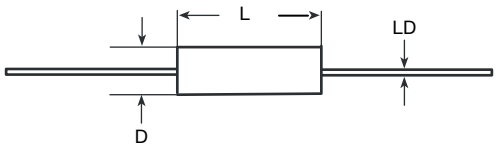
DIMENSIONS in inches [millimeters]



GLOBAL MODEL	DIMENSIONS in inches [millimeters]		
	L ± 0.025 [0.635]	D ± 0.005 [0.127]	LD ± 0.002 [0.051]
MR9352	1.000 [25.40]	0.375 [9.52]	0.032 [0.813]
MR9353	0.750 [19.05]	0.375 [9.52]	0.032 [0.813]
MR9354	0.750 [19.05]	0.250 [6.35]	0.032 [0.813]
MR9355	0.500 [12.70]	0.250 [6.35]	0.032 [0.813]
MR9356	0.375 [9.52]	0.250 [6.35]	0.032 [0.813]
MR9357	1.000 [25.40]	0.500 [12.70]	0.032 [0.813]
MR9358	1.500 [38.10]	0.500 [12.70]	0.032 [0.813]
MR9359	2.000 [50.80]	0.500 [12.70]	0.032 [0.813]

MATERIAL SPECIFICATIONS

Element: nickel-chrome alloy, other materials available depending on TC requirements

Core: molded epoxy

Encapsulant: epoxy

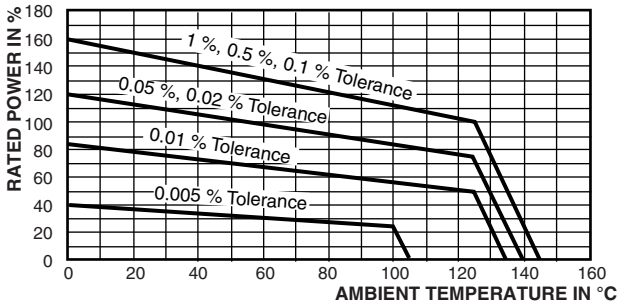
Standard Terminals: 100 % matte tinned copper

Part Marking: MILLS, model, value, tolerance, date code

Note

- Due to resistor size limitations some resistors will have minimal information marked on parts.

DERATING



TECHNICAL SPECIFICATIONS

PARAMETER	UNIT	MR93 RESISTOR CHARACTERISTICS
Temperature Coefficient	ppm/°C	± 10 for > 100 Ω; ± 20 for 10 Ω to 100 Ω; ± 30 for < 10 Ω
Terminal Strength	lb	4.5
Dielectric Withstanding Voltage	V_{AC}	750
Operating Temperature Range	°C	-55 to +145 (see derating chart)

PERFORMANCE

TEST	CONDITIONS OF TEST	TEST LIMITS
Dielectric Withstanding Voltage	MIL-STD-202 Method 301, 750 V_{RMS}	± (0.01 %) ΔR
High Frequency Vibration	MIL-STD-202 Method 204, condition D, frequency varied 10 Hz to 2000 Hz, 20 *g* peak	± (0.01 %) ΔR
High Temperature Exposure	MIL-STD-202 Method 108, 2000 h at 145 °C	± (0.01 %) ΔR
Load Life	MIL-STD-202 Method 108, 2000 h at 125 °C at rated power, 1.5 h “ON”, 0.5 h “OFF”	± (0.1 % + 0.01 Ω) ΔR
Low Temperature Storage	-65 °C for 24 h	± (0.01 %) ΔR
Moisture Resistance	MIL-STD 202 Method 106	± (0.01 %) ΔR
Shock, Specified Pulse	MIL-STD-202 Method 213, condition I, 5 shocks in 3 directions	± (0.01 %) ΔR
Thermal Shock	MIL-STD-202 Method 107, condition B	± (0.05 %) ΔR
Short Time Overload	2x rated power for 10 min	± (0.01 %) ΔR
Terminal Strength	MIL-STD-202 Method 211, conditions A and D, 4.5 lb	± (0.01 %) ΔR

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