

## Wirewound Resistor, Ultra Precision, Epoxy Molded, Axial Lead



### FEATURES

- Resistance values up to 250 k $\Omega$
- Resistance tolerances down to  $\pm 0.005$  %
- Tighter tolerances and lower resistance values available, please contact factory
- Temperature coefficients down to  $\pm 2$  ppm/ $^{\circ}$ C, and up to 6000 ppm/ $^{\circ}$ C
- Matched resistance sets available in tolerances down to  $\pm 0.001$  %, and in temperature coefficients down to  $\pm 0.5$  ppm/ $^{\circ}$ C, please contact factory
- Custom design capability available, please contact factory
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



**RoHS**  
COMPLIANT  
**HALOGEN**  
**FREE**  
**GREEN**  
(5-2008)

### STANDARD ELECTRICAL SPECIFICATIONS

GLOBAL MODEL	POWER RATING W <sup>(1)</sup>	RESISTANCE RANGE $\Omega$ $\pm 0.1$ %, $\pm 0.25$ %, $\pm 0.5$ %, $\pm 1$ %	RESISTANCE RANGE $\Omega$ $\pm 0.05$ %, $\pm 0.1$ %, $\pm 0.25$ %, $\pm 0.5$ %, $\pm 1$ %	RESISTANCE RANGE $\Omega$ $\pm 0.01$ %, $\pm 0.05$ %, $\pm 0.1$ %, $\pm 0.25$ %, $\pm 0.5$ %, $\pm 1$ %	RESISTANCE RANGE $\Omega$ $\pm 0.005$ %, $\pm 0.01$ %, $\pm 0.05$ %, $\pm 0.1$ %, $\pm 0.25$ %, $\pm 0.5$ %, $\pm 1$ %	MAXIMUM WORKING VOLTAGE V <sup>(2)</sup>
MR503	0.06	1 to 75K	5 to 75K	50 to 75K	1K to 75K	75
MR508	0.08	1 to 150K	5 to 150K	50 to 150K	1K to 150K	100
MR510	0.10	1 to 250K	5 to 250K	50 to 250K	1K to 250K	100
MR512	0.10	1 to 250K	5 to 250K	50 to 250K	1K to 250K	100

#### Notes

- <sup>(1)</sup> Power rating is based on tolerance, please see derating chart.
- <sup>(2)</sup> 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  $(P \times R)^{1/2}$ .

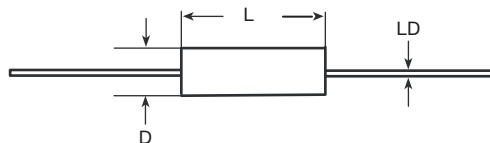
### GLOBAL PART NUMBER INFORMATION

Global Part Numbering example: **MR50336R000FAE66** (visit [www.vishay.net](http://www.vishay.net) SAP parts manual for all options)

<b>M</b>	<b>R</b>	<b>5</b>	<b>0</b>	<b>3</b>	<b>3</b>	<b>6</b>	<b>R</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>F</b>	<b>A</b>	<b>E</b>	<b>6</b>	<b>6</b>		
GLOBAL MODEL (5 digits)					VALUE (6 digits)			TOLERANCE (1 digit)		TC (1 digit)		PACKAGING CODE (3 digits)			SPECIAL (up to 2 digits)		
(see Standard Electrical Specifications Global Model column for options)					<b>R</b> = decimal <b>K</b> = thousand <b>M</b> = million <b>1R5000</b> = 1.5 $\Omega$ <b>1K5000</b> = 1.5 k $\Omega$ <b>1M0000</b> = 1 M $\Omega$			<b>S</b> = $\pm 0.005$ % <b>T</b> = $\pm 0.01$ % <b>Q</b> = $\pm 0.02$ % <b>A</b> = $\pm 0.05$ % <b>B</b> = $\pm 0.1$ % <b>C</b> = $\pm 0.25$ % <b>D</b> = $\pm 0.5$ % <b>F</b> = $\pm 1.0$ %		<b>A</b> = standard, 10 to 30 (W) <b>B</b> = 3900 (Q) <b>C</b> = 4500 (M) <b>D</b> = 6000 (N) <b>E</b> = 3500 (P) <b>Y</b> = 10 ( $\geq 1$ $\Omega$ ) <b>G</b> = 5 ( $\geq 10$ $\Omega$ ) <b>J</b> = 2 ( $\geq 100$ $\Omega$ )		<b>E66</b> = lead (Pb)-free bulk pack			(dash number) from <b>1</b> to <b>99</b> as applicable <b>S</b> = 0.025" terminal		

Historical Part Number example: **MR503W36R0F**

<b>MR503</b>	<b>W = STANDARD</b>	<b>36 <math>\Omega</math></b>	<b>1 %</b>
HISTORICAL MODEL	TC	RESISTANCE VALUE	TOLERANCE

**DIMENSIONS** in inches [millimeters]


GLOBAL MODEL	DIMENSIONS in inches [millimeters]		
	$L \pm 0.025$ [0.635]	$D \pm 0.005$ [0.127]	$LD \pm 0.002$ [0.051]
MR503	0.210 [5.33]	0.100 [2.54]	0.020 [0.508]
MR508	0.260 [6.60]	0.125 [3.18]	0.020 [0.508] <sup>(1)</sup>
MR510	0.375 [9.52]	0.125 [3.18]	0.020 [0.508]
MR512	0.312 [7.92]	0.156 [3.96]	0.020 [0.508]

**Note**

<sup>(1)</sup> 0.025" [0.635] available, this is called out by putting an "S" in the SPECIAL section of the part number.

**MATERIAL SPECIFICATIONS**

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

**Core:** molded epoxy

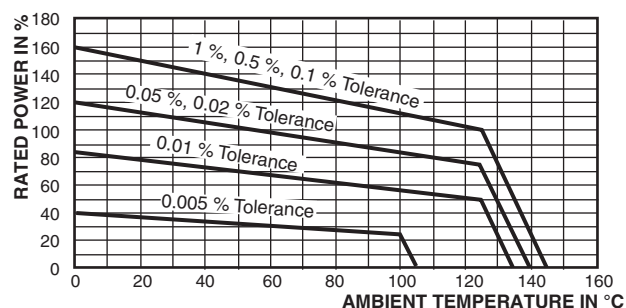
**Encapsulant:** epoxy

**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	MR500 RESISTOR CHARACTERISTICS
Temperature Coefficient	ppm/°C	$\pm 10$ for $> 100 \Omega$ ; $\pm 20$ for $10 \Omega$ to $100 \Omega$ ; $\pm 30$ for $< 10 \Omega$
Terminal Strength	lb	4.5
Dielectric Withstanding Voltage	$V_{AC}$	750
Operating Temperature Range	°C	-55 to +145 (see derating chart)



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