

## 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](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 Ω		RESISTANCE RANGE Ω		RESISTANCE RANGE Ω		MAXIMUM WORKING VOLTAGE V <sup>(2)</sup>
		± 0.1 %, ± 0.25 %, ± 0.5 %, ± 1 %	± 0.05 %, ± 0.1 %, ± 0.25 %, ± 0.5 %, ± 1 %	± 0.01 %, ± 0.05 %, ± 0.1 %, ± 0.25 %, ± 0.5 %, ± 1 %	± 0.005 %, ± 0.01 %, ± 0.05 %, ± 0.1 %, ± 0.25 %, ± 0.5 %, ± 1 %			
MR101	0.120	1 to 400K	5 to 400K	50 to 400K	1K to 400K	150		
MR102	0.175	1 to 750K	5 to 750K	50 to 750K	1K to 750K	200		
MR103	0.200	1 to 750K	5 to 750K	50 to 750K	1K to 750K	200		
MR104	0.150	1 to 500K	5 to 500K	50 to 500K	1K to 500K	100		
MR105	0.200	1 to 1.0M	5 to 1.0M	50 to 1.0M	1K to 1.0M	200		
MR106	0.250	1 to 1.2M	5 to 1.2M	50 to 1.2M	1K to 1.2M	300		
MR107	0.330	1 to 2.5M	5 to 2.5M	50 to 2.5M	1K to 2.5M	400		
MR108	0.400	1 to 3.8M	5 to 3.8M	50 to 3.8M	1K to 3.8M	300		
MR110	0.500	1 to 3.8M	5 to 3.8M	50 to 3.8M	1K to 3.8M	400		
MR111	0.500	1 to 3.8M	5 to 3.8M	50 to 3.8M	1K to 3.8M	400		
MR112	0.750	1 to 6.0M	5 to 6.0M	50 to 6.0M	1K to 6.0M	600		
MR114	1.000	1 to 6.0M	5 to 6.0M	50 to 6.0M	1K to 6.0M	800		
MR115	1.500	1 to 6.0M	5 to 6.0M	50 to 6.0M	1K to 6.0M	900		
MR116	2.000	1 to 6.0M	5 to 6.0M	50 to 6.0M	1K to 6.0M	1000		

**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: **MR106250R00TAE66** (visit [www.vishay.net](http://www.vishay.net) SAP parts manual for all options)

M	R	1	0	6	2	5	0	R	0	0	T	A	E	6	6		
GLOBAL MODEL (5 digits) <small>(see Standard Electrical Specifications Global Model column for options)</small>					VALUE (6 digits) <b>R</b> = decimal <b>K</b> = thousand <b>M</b> = million <b>1R5000</b> = 1.5 Ω <b>1K5000</b> = 1.5 kΩ <b>1M0000</b> = 1 MΩ			TOLERANCE (1 digit) <b>S</b> = ± 0.005 % <b>T</b> = ± 0.01 % <b>Q</b> = ± 0.02 % <b>A</b> = ± 0.05 % <b>B</b> = ± 0.1 % <b>C</b> = ± 0.25 % <b>D</b> = ± 0.5 % <b>F</b> = ± 1.0 %		TC (1 digit) <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 (≥ 1 Ω) <b>G</b> = 5 (≥ 10 Ω) <b>J</b> = 2 (≥ 100 Ω)		PACKAGING CODE (3 digits) <b>E66</b> = lead (Pb)-free bulk pack			SPECIAL (up to 2 digits) <small>(dash number)</small> From <b>1</b> to <b>99</b> as applicable <b>S</b> = 0.025" terminal		

Historical Part Number example: **MR106W250R0T**

MR106	W = STANDARD	250 Ω	0.01 %
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]
MR101	0.250 [6.35]	0.187 [4.75]	0.025 [0.635]
MR102	0.375 [9.52]	0.187 [4.75]	0.025 [0.635]
MR103	0.450 [11.43]	0.187 [4.75]	0.025 [0.635]
MR104	0.250 [6.35]	0.250 [6.35]	0.025 [0.635]
MR105	0.375 [9.52]	0.250 [6.35]	0.032 [0.813] <sup>(1)</sup>
MR106	0.500 [12.70]	0.250 [6.35]	0.032 [0.813] <sup>(1)</sup>
MR107	0.750 [19.05]	0.250 [6.35]	0.032 [0.813] <sup>(1)</sup>
MR108	0.500 [12.70]	0.375 [9.52]	0.032 [0.813]
MR110	0.750 [19.05]	0.375 [9.52]	0.032 [0.813]
MR111	0.750 [19.05]	0.375 [9.52]	0.032 [0.813]
MR112	1.000 [25.40]	0.375 [9.52]	0.032 [0.813]
MR114	1.000 [25.40]	0.500 [12.70]	0.032 [0.813]
MR115	1.500 [38.10]	0.500 [12.70]	0.032 [0.813]
MR116	2.000 [50.80]	0.500 [12.70]	0.032 [0.813]

**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

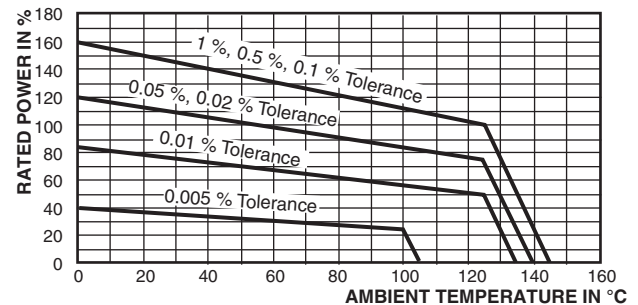
**Encapsulant:** epoxy

**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	MR100 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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