

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


**FEATURES**

- Resistance values up to 1 M $\Omega$
- Resistance tolerances down to  $\pm 0.005\%$
- Tighter tolerances and lower resistance values available, please contact factory
- Temperature coefficients down to  $\pm 2$  ppm/ $^{\circ}\text{C}$ , and up to 6000 ppm/ $^{\circ}\text{C}$
- Matched resistance sets available in tolerances down to  $\pm 0.001\%$ , and in temperature coefficients down to  $\pm 0.5$  ppm/ $^{\circ}\text{C}$ , 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 $\Omega$	RESISTANCE RANGE $\Omega$	RESISTANCE RANGE $\Omega$	RESISTANCE RANGE $\Omega$	MAXIMUM WORKING VOLTAGE V <sup>(2)</sup>
		$\pm 0.1\%, \pm 0.25\%, \pm 0.5\%, \pm 1\%$	$\pm 0.05\%, \pm 0.1\%, \pm 0.25\%, \pm 0.5\%, \pm 1\%$	$\pm 0.01\%, \pm 0.05\%, \pm 0.1\%, \pm 0.25\%, \pm 0.5\%, \pm 1\%$	$\pm 0.005\%, \pm 0.01\%, \pm 0.05\%, \pm 0.1\%, \pm 0.25\%, \pm 0.5\%, \pm 1\%$	
MR702	0.125	1 to 500K	5 to 500K	50 to 500K	1K to 500K	150
MR705	0.300	1 to 500K	5 to 500K	50 to 500K	1K to 500K	150
MR706	0.500	1 to 1M	5 to 1M	50 to 1M	1K to 1M	150

**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: **MR70233K330BAE66** (visit [www.vishay.net](http://www.vishay.net) SAP parts manual for all options)

M	R	7	0	2	3	3	K	3	3	0	B	A	E	6	6		
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GLOBAL MODEL (5 digits)
<b>MR702</b> <b>MR705</b> <b>MR706</b>

VALUE (6 digits)
<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 $\Omega$

TOLERANCE (1 digit)
<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> = $\pm 1.0\%$

TC (1 digits)
<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 ( $\geq 100 \Omega$ )

PACKAGING CODE (3 digits)
<b>E66</b> = lead (Pb)-free bulk pack

SPECIAL (up to 2 digits)
(dash number) from <b>1</b> to <b>99</b> as applicable

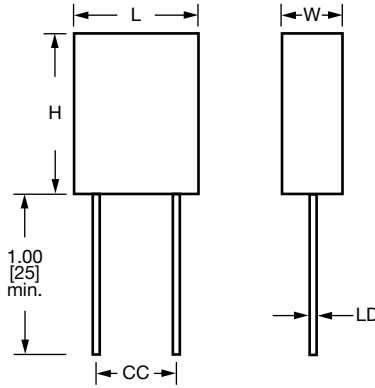
 Historical Part Number example: **MR702W33K330B**

<b>MR702</b>
HISTORICAL MODEL

<b>W = STANDARD</b>
TC

<b>33.33 k<math>\Omega</math></b>
RESISTANCE VALUE

<b>0.1 %</b>
TOLERANCE

**DIMENSIONS** in inches [millimeters]


GLOBAL MODEL	DIMENSIONS in inches [millimeters]				
	$L \pm 0.010$ [0.254]	$H \pm 0.005$ [0.127]	$W \pm 0.010$ [0.254]	$LD \pm 0.002$ [0.051]	$CC \pm 0.015$ [0.381]
MR702	0.270 [6.86]	0.250 [6.35]	0.140 [3.56]	0.032 [0.813]	0.125 [3.18]
MR705	0.300 [7.62]	0.320 [8.13]	0.102 [2.59]	0.025 [0.635]	0.150 [3.81]
MR706	0.585 [14.86]	0.525 [13.34]	0.160 [4.06]	0.032 [0.813]	0.400 [10.16]

**MATERIAL SPECIFICATIONS**

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

**Core:** molded epoxy

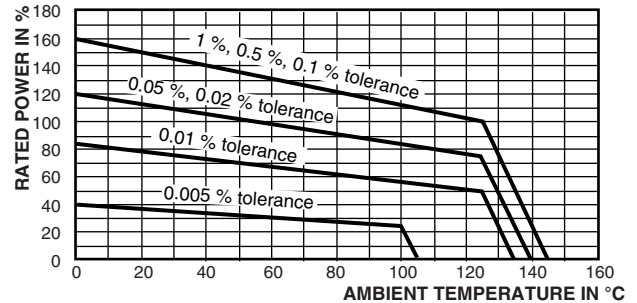
**Encapsulant:** epoxy

**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	MR700 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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