

## 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  $\pm 5$  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: **MR70233K330B A E 6 6** (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
 
 

GLOBAL MODEL  
(5 digits)

**MR702**  
**MR705**  
**MR706**

VALUE  
(6 digits)

R = decimal  
K = thousand  
M = million  
1R5000 = 1.5  $\Omega$   
1K5000 = 1.5 k $\Omega$   
1M0000 = 1 M $\Omega$

TOLERANCE  
(1 digit)

S =  $\pm 0.005\%$   
T =  $\pm 0.01\%$   
Q =  $\pm 0.02\%$   
A =  $\pm 0.05\%$   
B =  $\pm 0.1\%$   
C =  $\pm 0.25\%$   
D =  $\pm 0.5\%$   
F =  $\pm 1.0\%$

TC  
(1 digit)

A = standard, 10 to 30 (W)  
B = 3900 (Q)  
C = 4500 (M)  
D = 6000 (N)  
E = 3500 (P)  
Y = 10 ( $\geq 1 \Omega$ )  
G = 5 ( $\geq 10 \Omega$ )

PACKAGING CODE  
(3 digits)

**E66** = lead (Pb)-free bulk pack

SPECIAL  
(up to 2 digits)

(dash number) from **1** to **99** as applicable

Historical Part Number Example: **MR702W33K330B**

**MR702**

HISTORICAL MODEL

**W = STANDARD**

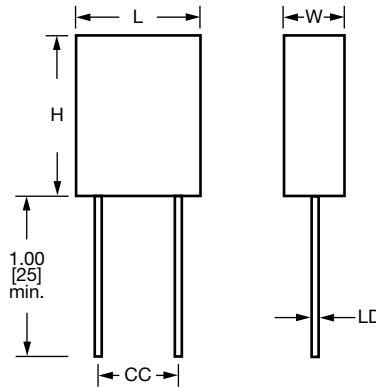
TC

**33.33 k $\Omega$**

RESISTANCE VALUE

**0.1%**

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

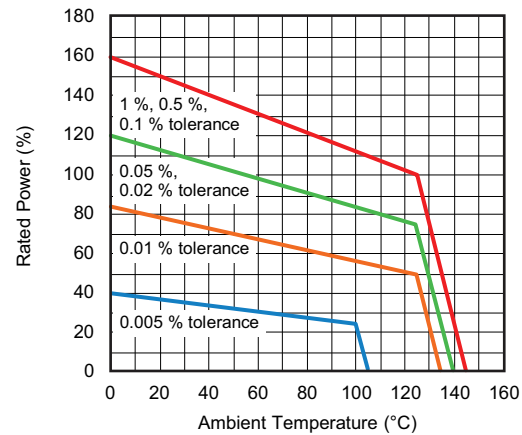
**Encapsulant:** epoxy

**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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