

Wirewound Resistor, Ultra Precision, High Stability, Epoxy Molded, Axial Lead


FEATURES

- Stability of ± 20 ppm/year
- Resistance values up to $6\text{ M}\Omega$
- Resistance tolerances down to $\pm 0.005\%$
- Tighter tolerances and lower resistance values available, please contact factory
- Temperature coefficients down to ± 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 ± 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



RoHS
COMPLIANT
HALOGEN
FREE
GREEN
(5-2008)

STANDARD ELECTRICAL SPECIFICATIONS

GLOBAL MODEL	POWER RATING W ⁽¹⁾	RESISTANCE RANGE Ω		RESISTANCE RANGE Ω		RESISTANCE RANGE Ω		MAXIMUM WORKING VOLTAGE V ⁽²⁾
		$\pm 0.1\%$, $\pm 0.25\%$, $\pm 0.5\%$, $\pm 1\%$	$\pm 0.05\%$, $\pm 0.1\%$, $\pm 0.25\%$, $\pm 0.5\%$, $\pm 1\%$	$\pm 0.01\%$, $\pm 0.05\%$, $\pm 0.1\%$, $\pm 0.25\%$, $\pm 0.5\%$, $\pm 1\%$	$\pm 0.005\%$, $\pm 0.01\%$, $\pm 0.05\%$, $\pm 0.1\%$, $\pm 0.25\%$, $\pm 0.5\%$, $\pm 1\%$			
MR301	0.120	1 to 400K	5 to 400K	50 to 400K	1K to 400K	150		
MR302	0.175	1 to 750K	5 to 750K	50 to 750K	1K to 750K	200		
MR303	0.200	1 to 750K	5 to 750K	50 to 750K	1K to 750K	200		
MR304	0.150	1 to 500K	5 to 500K	50 to 500K	1K to 500K	100		
MR305	0.200	1 to 1.0M	5 to 1.0M	50 to 1.0M	1K to 1.0M	200		
MR306	0.250	1 to 1.2M	5 to 1.2M	50 to 1.2M	1K to 1.2M	300		
MR307	0.330	1 to 2.5M	5 to 2.5M	50 to 2.5M	1K to 2.5M	400		
MR308	0.400	1 to 3.8M	5 to 3.8M	50 to 3.8M	1K to 3.8M	300		
MR310	0.500	1 to 3.8 M	5 to 3.8 M	50 to 3.8 M	1K to 3.8 M	400		
MR311	0.500	1 to 3.8M	5 to 3.8M	50 to 3.8M	1K to 3.8M	400		
MR312	0.750	1 to 6.0M	5 to 6.0M	50 to 6.0M	1K to 6.0M	600		
MR314	1.000	1 to 6.0M	5 to 6.0M	50 to 6.0M	1K to 6.0M	800		
MR315	1.500	1 to 6.0M	5 to 6.0M	50 to 6.0M	1K to 6.0M	900		
MR316	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 $(P \times R)^{1/2}$.

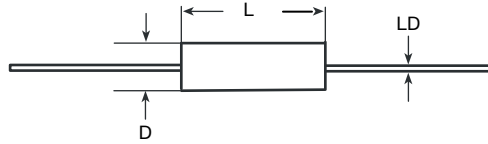
GLOBAL PART NUMBER INFORMATION

Global Part Numbering example: **MR30615K000QAE66** (visit www.vishay.net SAP parts manual for all options)

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

Historical Part Number example: **MR306W15K0Q**

MR306	W = STANDARD	15 k Ω	0.02 %
HISTORICAL MODEL	TC	RESISTANCE VALUE	TOLERANCE

DIMENSIONS in inches [millimeters]


MODEL	DIMENSIONS in inches [millimeters]		
	$L \pm 0.025$ [0.635]	$D \pm 0.005$ [0.127]	$LD \pm 0.002$ [0.051]
MR301	0.250 [6.35]	0.187 [4.75]	0.025 [0.635]
MR302	0.375 [9.52]	0.187 [4.75]	0.025 [0.635]
MR303	0.450 [11.43]	0.187 [4.75]	0.025 [0.635]
MR304	0.250 [6.35]	0.250 [6.35]	0.025 [0.635]
MR305	0.375 [9.52]	0.250 [6.35]	0.032 [0.813] ⁽¹⁾
MR306	0.500 [12.70]	0.250 [6.35]	0.032 [0.813] ⁽¹⁾
MR307	0.750 [19.05]	0.250 [6.35]	0.032 [0.813] ⁽¹⁾
MR308	0.500 [12.70]	0.375 [9.52]	0.032 [0.813]
MR310	0.750 [19.05]	0.375 [9.52]	0.032 [0.813]
MR311	0.750 [19.05]	0.375 [9.52]	0.032 [0.813]
MR312	1.000 [25.40]	0.375 [9.52]	0.032 [0.813]
MR314	1.000 [25.40]	0.500 [12.70]	0.032 [0.813]
MR315	1.500 [38.10]	0.500 [12.70]	0.032 [0.813]
MR316	2.000 [50.80]	0.500 [12.70]	0.032 [0.813]

Note

⁽¹⁾ 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

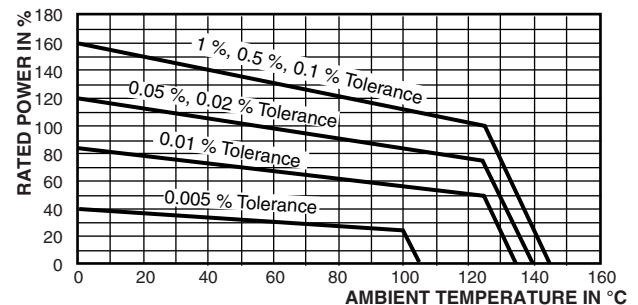
Encapsulant: epoxy

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	MR300 RESISTOR CHARACTERISTICS
Temperature Coefficient	ppm/°C	± 10 for $> 100 \Omega$; ± 20 for 10Ω to 100Ω ; ± 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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