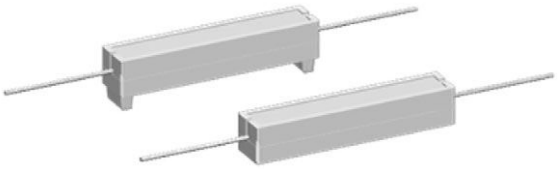
Wirewound Resistors, Commercial Power, Axial Lead



Please reference the Vishay Dale closest equivalent:

- **CP (www.vishay.com/doc?30213)**
- **CP High Volume (www.vishay.com/doc?30113)**

Notes

- There may be slight differences between the MRW product and the applicable replacement.
- See the cross-reference file for a complete list of differences and part number crosses: www.vishay.net/files/Cross-Reference%20Data%20-%20PTN-DR-022-2015%20Rev%200.pdf.

FEATURES

- High performance for low cost
- Meets or exceeds requirements of EIA standard RS-344
- High power to size ratio
- Ceramic cases are available with circuit board stand-offs ("S" SPECIAL)
- Special inorganic potting compound and ceramic case provide high thermal conductivity in a fireproof package
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

Pb-free

e3

RoHS COMPLIANT

HALOGEN FREE

GREEN (5-2008)

STANDARD ELECTRICAL SPECIFICATIONS

GLOBAL MODEL	POWER RATING $P_{40\,°C}$ W	RESISTANCE RANGE Ω	TOLERANCE ± %	WEIGHT (typical) g
MRW05	5	0.01 to 2.4K	5, 10	4.8
MRW05...S	5	0.01 to 2.4K	5, 10	4.8
MRW07	7	0.01 to 5K	5, 10	6.8
MRW07...S	7	0.01 to 5K	5, 10	6.8
MRW10	10	0.01 to 7K	5, 10	9.5
MRW10...S	10	0.01 to 7K	5, 10	9.5
MRW15	15	0.01 to 8K	5, 10	16.8
MRW15...S	15	0.01 to 8K	5, 10	16.8
MRW20	20	0.01 to 10K	5, 10	22.8
MRW20...S	20	0.01 to 10K	5, 10	22.8
MRW22	22	0.01 to 10K	5, 10	24.5
MRW22...S	22	0.01 to 10K	5, 10	24.5

TECHNICAL SPECIFICATIONS

PARAMETER	UNIT	MRW RESISTOR CHARACTERISTICS
Temperature Coefficient	ppm/°C	± 300 for 1.0 Ω and above, ± 600 below 1 Ω
Short Time Overload	-	5 x rated power for 5 s
Terminal Strength	lb	10 minimum
Operating Temperature Range	°C	-65 to +275
Dielectric Withstanding Voltage	V_{AC}	1000
Maximum Working Voltage	V	$(P \times R)^{1/2}$

GLOBAL PART NUMBER INFORMATION

Global Part Numbering example: MRW101K500JE14 (Visit www.vishay.net SAP Parts Manual for all options)

M	R	W	1	0	1	K	5	0	0	J	E	1	4			

GLOBAL MODEL (5 digits)	VALUE (5 digits)	TOLERANCE (1 digit)	PACKAGING CODE (3 digits)	SPECIAL (up to 3 digits)
(See Standard Electrical Specifications Global Model column for options)	**R** = Decimal **K** = Thousand **15R00** = 15 Ω **1K500** = 1.5 kΩ	**J** = ± 5 % **K** = ± 10 %	**E14** = Lead (Pb)-free bulk pack **E31** = Lead (Pb)-free four layer bulk pack	(Dash Number) From **1** to **999** as applicable **S** = Standoff

Historical Part Number example: MRW10W1K50J

MRW10	W = STANDARD	1.5 kΩ	5 %
HISTORICAL MODEL	TC	RESISTANCE VALUE	TOLERANCE

For technical questions, contact: ww2aresistors@vishay.com

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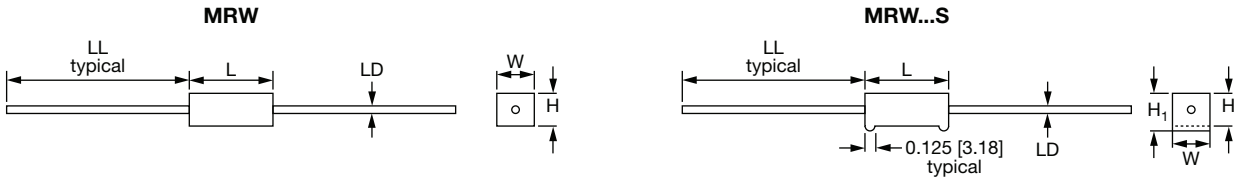
DIMENSIONS in inches [millimeters]



GLOBAL MODEL	DIMENSIONS in inches [millimeters]					
	L (1) ± 0.031 [0.794]	W ± 0.031 [0.794]	H ± 0.031 [0.794]	H_1 ± 0.031 [0.794]	LD ± 0.001 [0.025]	LL ± 0.125 [3.175]
MRW05	0.875 [22.22]	0.375 [9.52]	0.344 [8.73]	-	0.036 [0.914]	1.500 [38.10]
MRW05…S	0.875 [22.22]	0.375 [9.52]	0.344 [8.73]	0.406 [10.32]	0.036 [0.914]	1.500 [38.10]
MRW07	1.391 [35.32]	0.375 [9.52]	0.344 [8.73]	-	0.036 [0.914]	1.500 [38.10]
MRW07…S	1.391 [35.32]	0.375 [9.52]	0.344 [8.73]	0.469 [11.91]	0.036 [0.914]	1.500 [38.10]
MRW10	1.875 [47.62]	0.375 [9.52]	0.344 [8.73]	-	0.036 [0.914]	1.500 [38.10]
MRW10…S	1.875 [47.62]	0.375 [9.52]	0.344 [8.73]	0.469 [11.91]	0.036 [0.914]	1.500 [38.10]
MRW15	1.875 [47.62]	0.500 [12.70]	0.500 [12.70]	-	0.036 [0.914]	1.500 [38.10]
MRW15…S	1.875 [47.62]	0.500 [12.70]	0.500 [12.70]	0.625 [15.87]	0.036 [0.914]	1.500 [38.10]
MRW20	2.500 [63.50]	0.500 [12.70]	0.500 [12.70]	-	0.036 [0.914]	1.500 [38.10]
MRW20…S	2.500 [63.50]	0.500 [12.70]	0.500 [12.70]	0.625 [15.87]	0.036 [0.914]	1.500 [38.10]
MRW22	2.500 [63.50]	0.500 [12.70]	0.500 [12.70]	-	0.036 [0.914]	1.500 [38.10]
MRW22…S	2.500 [63.50]	0.500 [12.70]	0.500 [12.70]	0.625 [15.87]	0.036 [0.914]	1.500 [38.10]

Note

(1) Potting compound may extend outside of ceramic case up to 0.060 [1.52] maximum per side.

MATERIAL SPECIFICATIONS

Element: copper-nickel alloy or nickel-chrome alloy, depending on resistance value

Core: woven fiberglass

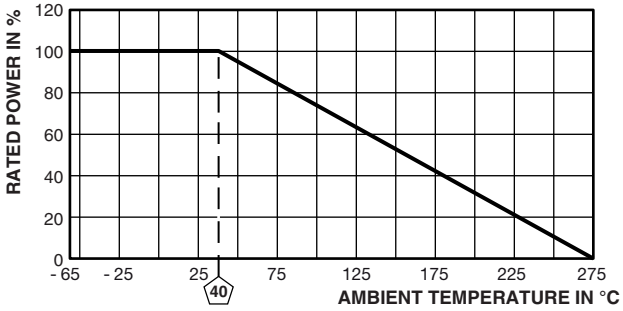
Body: steatite ceramic case with inorganic potting compound

End Caps: tin plated steel

Terminals: tinned copper

Part Marking: MILLS, model, wattage, value, tolerance, date code

DERATING



PERFORMANCE		
TEST	CONDITIONS OF TEST	TEST LIMITS (EIA-344)
Thermal Shock	-55 °C to +275 °C, 5 cycles, 30 min dwell time	± (5.0 % + 0.05 Ω) Δ*R*
Short Time Overload	5 x rated power for 5 s	± (4.0 % + 0.05 Ω) Δ*R*
Dielectric Withstanding Voltage	1000 V_{RMS} for 1 min	± (2.0 % + 0.05 Ω) Δ*R*
Low Temperature Storage	-65 °C, full rated working voltage for 45 min	± (3.0 % + 0.05 Ω) Δ*R*
Humidity	75 °C, 90 % to 100 % RH, 240 h	± (5.0 % + 0.05 Ω) Δ*R*
Load Life	1000 h at rated power, +25 °C, 1.5 h "ON", 0.5 h "OFF"	± (10.0 % + 0.05 Ω) Δ*R*
Terminal Strength	5 pounds for 30 s; body twisted about axis, 3 x 360° rotations	± (2.0 % + 0.05 Ω) Δ*R*
Resistance to Solder Heat	Terminal immersed 3.5 s in molten solder up to body	± (4.0 % + 0.05 Ω) Δ*R*

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