Wirewound Resistors, Commercial Power, Four Terminals, Low Value

Please reference the Vishay Dale closest equivalent: CPSL (www.vishay.com/doc?30217).

Notes

- There may be slight differences between the MRWL product and the CPSL product.
- 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

- Low inductance
- Extremely low resistance values
- Current sensing
- Low temperature coefficients
- High power to size ratio
- Superior surge capability
- Complete welded construction
- 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

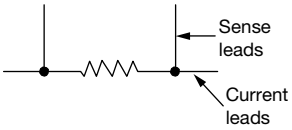
e3

RoHS COMPLIANT

HALOGEN FREE

GREEN (5-2008)

SCHEMATIC



STANDARD ELECTRICAL SPECIFICATIONS

GLOBAL MODEL	POWER RATING $P_{40\,°C}$ W	RESISTANCE RANGE Ω	TOLERANCE ± %	WEIGHT (typical) g
MRWL05	5	0.01 to 0.10	5, 10	5.2
MRWL10	10	0.01 to 0.10	5, 10	10.2

TECHNICAL SPECIFICATIONS

PARAMETER	UNIT	MRWL RESISTOR CHARACTERISTICS
Temperature Coefficient	ppm/°C	± 100 maximum
Short Time Overload	-	5 x rated power for 5 s
Maximum Working Voltage	V	$(P \times R)^{1/2}$
Operating Temperature Range	°C	-65 to +275
Terminal Strength	lb	10 minimum
Dielectric Withstanding Voltage	V_{AC}	1000

GLOBAL PART NUMBER INFORMATION

Global Part Numbering example: MRWL05R0150JE14 (Visit www.vishay.net SAP Parts Manual for all options)

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

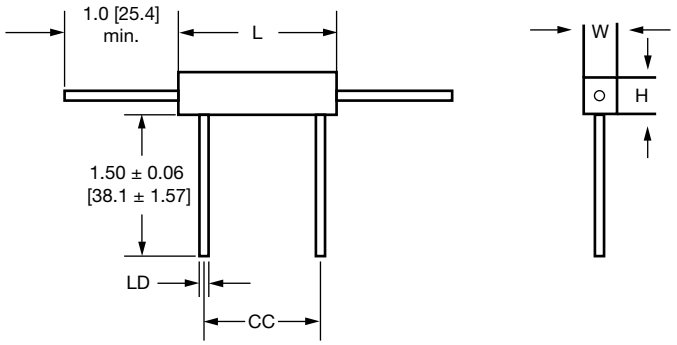
GLOBAL MODEL (6 digits)	VALUE (5 digits)	TOLERANCE (1 digit)	PACKAGING CODE (3 digits)	SPECIAL (up to 2 digits)
MRWL05 **MRWL10**	**R** = Decimal **R0150** = 0.015 Ω	**J** = ± 5 % **K** = ± 10 %	**E14** = Lead (Pb)-free bulk pack **E31** = Lead (Pb)-free four layer bulk pack	(Dash Number) From **1** to **99** as applicable

Historical Part Number example: MRWL05WR015J

MRWL05	W = STANDARD	0.015 Ω	5 %
HISTORICAL MODEL	TC	RESISTANCE VALUE	TOLERANCE

For technical questions, contact: ww2aresistors@vishay.com

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]	LD ± 0.001 [0.025]	CC ± 0.063 [1.59]
MRWL05	0.875 [22.22]	0.375 [9.52]	0.344 [8.73]	0.036 [0.914]	0.563 [14.30]
MRWL10	1.875 [47.62]	0.375 [9.52]	0.344 [8.73]	0.036 [0.914]	1.375 [34.93]

Note

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

MATERIAL SPECIFICATIONS

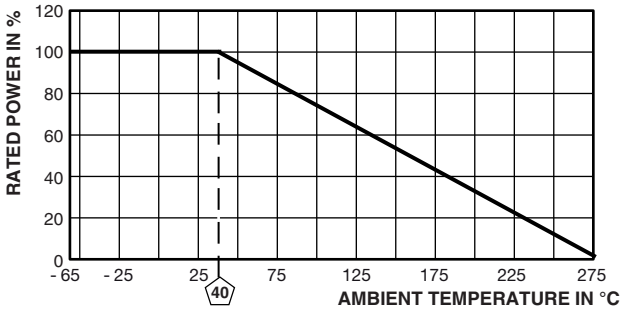
Element: self-supporting copper-nickel alloy or nickel-chrome alloy, depending on resistance value

Body: steatite ceramic case with inorganic potting compound

Terminals: tinned copper

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

DERATING



PERFORMANCE		
TEST	**CONDITIONS OF TEST**	**TEST LIMITS**
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 Operation	-65 °C, full rated working voltage for 45 min	± (3.0 % + 0.05 Ω) Δ*R*
Bias Humidity	75 °C, 90 % to 100 % RH, 240 h	± (5.0 % + 0.05 Ω) Δ*R*
Load Life	1000 h at rated power, +40 °C, 1.5 h “ON”, 0.5 h “OFF”	± (5.0 % + 0.05 Ω) Δ*R*
Terminal Strength	5 s to 10 s 10 pound pull test, torsion test - 3 alternating directions, 360° each	± (1.0 % + 0.05 Ω) Δ*R*
Resistance to Solder Heat	Terminal immersed 3.5 s in molten solder at 1/8" to 3/16" from body	± (1.0 % + 0.05 Ω) Δ*R*

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