

## Wirewound Resistor, Open Style, Current Shunts, Very Low Value



### FEATURES

- Extremely low resistance values for current sensing applications
- Low temperature coefficients (down to 100 ppm/°C)
- Complete welded construction
- Material categorization:  
For definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



### STANDARD ELECTRICAL SPECIFICATIONS

| GLOBAL MODEL <sup>(1)</sup> | HISTORICAL MODEL | TOLERANCE <sup>(2)</sup><br>% | RESISTANCE RANGE<br>Ω |
|-----------------------------|------------------|-------------------------------|-----------------------|
| MRS-1298...xx               | MRS1298xx        | 1, 5, 10                      | 0.001 to 0.050        |
| MRS-1367...xx               | MRS1367xx        | 1, 5, 10                      | 0.001 to 0.100        |
| MRS-1375...xx               | MRS1375xx        | 1, 5, 10                      | 0.001 to 0.010        |
| MRS-1510...xx               | MRS1510xx        | 1, 5, 10                      | 0.001 to 0.500        |

#### Notes

<sup>(1)</sup> The xx is for the two digit "special" number as described in Dimensions tables MRS-1298, MRS-1367, MRS-1375, and MRS-1510.

<sup>(2)</sup> Other tolerances may be available, contact factory.

### TECHNICAL SPECIFICATIONS

| PARAMETER                   | UNIT   | MRS RESISTOR CHARACTERISTICS                                                                   |
|-----------------------------|--------|------------------------------------------------------------------------------------------------|
| Temperature Coefficient     | ppm/°C | Typical is ± 100 (- 10 °C to + 80 °C) consult factory if application is TC sensitive           |
| Maximum Current Rating      | A      | Dependent upon configuration, see Dimensions tables MRS-1298, MRS-1367, MRS-1375, and MRS-1510 |
| Operating Temperature Range | °C     | - 55 to + 275                                                                                  |

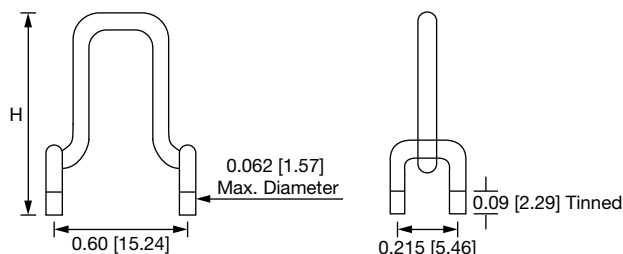
### GLOBAL PART NUMBER INFORMATION

Global Part Numbering example: MRS-1298R010JE1401 (visit [www.vishay.net](http://www.vishay.net) Vishay Dale parts numbering manual for all options)

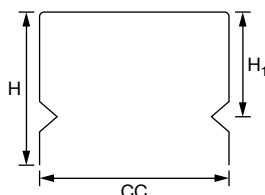
|                                                                          |   |   |   |                                                                            |   |   |   |                                      |   |                              |   |   |                                              |   |   |   |   |
|--------------------------------------------------------------------------|---|---|---|----------------------------------------------------------------------------|---|---|---|--------------------------------------|---|------------------------------|---|---|----------------------------------------------|---|---|---|---|
| M                                                                        | R | S | - | 1                                                                          | 2 | 9 | 8 | R                                    | 0 | 1                            | 0 | J | E                                            | 1 | 4 | 0 | 1 |
| GLOBAL MODEL<br>(8 digits)                                               |   |   |   | VALUE<br>(4 digits)                                                        |   |   |   | TOLERANCE<br>(1 digit)               |   | PACKAGING CODE<br>(3 digits) |   |   | SPECIAL<br>(2 digits)                        |   |   |   |   |
| (See Standard Electrical Specifications Global Model column for options) |   |   |   | L = mΩ<br>(below 0.01 Ω)<br>R = Decimal<br>5L00 = 0.005 Ω<br>R010 = 0.01 Ω |   |   |   | F = ± 1 %<br>J = ± 5 %<br>K = ± 10 % |   | E14 = Bulk pack              |   |   | (Dash Number)<br>From 01 to 99 as applicable |   |   |   |   |

Historical Part Number example: MRS129801J

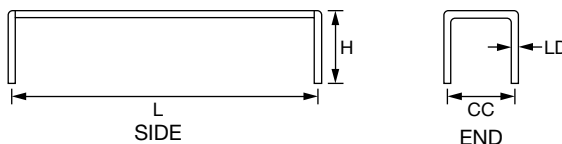
|                  |           |            |
|------------------|-----------|------------|
| <b>MRS1298</b>   | <b>01</b> | <b>5 %</b> |
| HISTORICAL MODEL | SIZE      | TOLERANCE  |

**DIMENSIONS** in inches [millimeters]

**MRS-1298**

| GLOBAL MODEL SPECIAL | RESISTANCE $\Omega$ | CURRENT RATING (MAXIMUM) A | DIMENSION H   |
|----------------------|---------------------|----------------------------|---------------|
| 01                   | 0.010               | 25                         | 0.750 [19.05] |
| 02                   | 0.005               | 25                         | 0.750 [19.05] |
| 03                   | 0.003               | 25                         | 0.580 [14.73] |
| 04                   | 0.001               | 25                         | 0.400 [10.16] |
| 05                   | 0.050               | 10                         | 0.700 [17.78] |
| 06                   | 0.010               | 15                         | 0.350 [9.89]  |
| 07                   | 0.005               | 15                         | 0.350 [9.89]  |
| 08                   | 0.002               | 15                         | 0.400 [10.16] |
| 09                   | 0.00382             | 15                         | 0.350 [9.89]  |
| 10                   | 0.013               | 15                         | 1.000 [25.40] |
| 11                   | 0.033               | 15                         | 0.600 [15.24] |
| 12                   | 0.025               | 15                         | 0.400 [10.16] |
| 13                   | 0.033               | 15                         | 0.875 [22.22] |
| 14                   | 0.008               | 15                         | 0.685 [17.40] |
| 15                   | 0.020               | 10                         | 0.300 [7.62]  |
| 16                   | 0.050               | 15                         | 0.600 [15.24] |
| 17                   | 0.004               | 25                         | 0.500 [12.70] |
| 18                   | 0.010               | 15                         | 0.350 [9.89]  |


**MRS-1367**

| GLOBAL MODEL SPECIAL | RESISTANCE $\Omega$ | CURRENT RATING (MAXIMUM) A | DIMENSION H TYPICAL | DIMENSION CC  | DIMENSION H <sub>1</sub> TYPICAL |
|----------------------|---------------------|----------------------------|---------------------|---------------|----------------------------------|
| 03                   | 0.050               | 10                         | 0.750 [19.05]       | 1.500 [38.10] | 0.500 [12.70]                    |
| 04                   | 0.010               | 15                         | 0.750 [19.05]       | 0.900 [22.86] | 0.625 [15.88]                    |
| 05                   | 0.020               | 10                         | 0.500 [12.70]       | 0.750 [19.05] | 0.375 [9.53]                     |
| 06                   | 0.025               | 10                         | 0.625 [15.88]       | 0.750 [19.05] | 0.500 [12.70]                    |
| 07                   | 0.040               | 10                         | 0.800 [20.32]       | 0.812 [20.62] | 0.675 [17.15]                    |
| 08                   | 0.050               | 8                          | 0.500 [12.70]       | 0.960 [24.38] | 0.375 [9.53]                     |
| 09                   | 0.070               | 8                          | 0.650 [16.51]       | 1.300 [33.02] | 0.525 [13.34]                    |
| 10                   | 0.070               | 10                         | 0.800 [20.32]       | 1.600 [40.64] | 0.675 [17.15]                    |
| 11                   | 0.005               | 15                         | 0.750 [19.05]       | 0.750 [19.05] | 0.550 [13.97]                    |
| 12                   | 0.033               | 8                          | 0.500 [12.70]       | 0.400 [10.16] | 0.325 [8.26]                     |
| 13                   | 0.025               | 10                         | 0.475 [12.07]       | 0.960 [24.38] | 0.350 [9.89]                     |
| 14                   | 0.015               | 10                         | 0.750 [19.05]       | 1.500 [38.10] | 0.625 [15.88]                    |
| 15                   | 0.050               | 10                         | 0.625 [15.88]       | 1.080 [27.43] | 0.500 [12.70]                    |
| 16                   | 0.100               | 6.5                        | 0.620 [15.75]       | 0.625 [15.88] | 0.400 [10.16]                    |
| 17                   | 0.020               | 12.5                       | 0.500 [12.70]       | 0.600 [15.24] | 0.375 [9.53]                     |
| 18                   | 0.025               | 15                         | 0.540 [13.72]       | 0.800 [20.32] | 0.415 [10.54]                    |
| 21                   | 0.030               | 10                         | 0.725 [18.42]       | 0.750 [19.05] | 0.525 [13.34]                    |
| 25                   | 0.022               | 10                         | 0.710 [18.03]       | 0.620 [15.75] | 0.510 [12.95]                    |

**DIMENSIONS** in inches [millimeters]


| <b>MRS-1375</b>      |                     |                            |               |               |               |              |
|----------------------|---------------------|----------------------------|---------------|---------------|---------------|--------------|
| GLOBAL MODEL SPECIAL | RESISTANCE $\Omega$ | CURRENT RATING (MAXIMUM) A | DIMENSION L   | DIMENSION H   | DIMENSION CC  | DIMENSION LD |
| 01                   | 0.001               | 30                         | 0.750 [19.05] | 0.500 [12.70] | 0.500 [12.70] | 0.080 [2.03] |
| 02                   | 0.002               | 40                         | 1.700 [43.18] | 0.500 [12.70] | 0.500 [12.70] | 0.080 [2.03] |
| 03                   | 0.003               | 40                         | 1.700 [43.18] | 0.500 [12.70] | 0.500 [12.70] | 0.080 [2.03] |
| 04                   | 0.001               | 40                         | 1.700 [43.18] | 0.500 [12.70] | 0.500 [12.70] | 0.080 [2.03] |
| 05                   | 0.002               | 30                         | 1.250 [31.75] | 0.750 [19.05] | 0.500 [12.70] | 0.080 [2.03] |
| 06                   | 0.004               | 30                         | 1.250 [31.75] | 0.750 [19.05] | 0.500 [12.70] | 0.080 [2.03] |
| 07                   | 0.00166             | 35                         | 1.600 [40.64] | 0.500 [12.70] | 0.500 [12.70] | 0.080 [2.03] |
| 09                   | 0.005               | 40                         | 2.865 [72.77] | 0.750 [19.05] | 0.500 [12.70] | 0.080 [2.03] |
| 10                   | 0.010               | 20                         | 1.400 [35.56] | 0.750 [19.05] | 0.500 [12.70] | 0.080 [2.03] |
| 11                   | 0.004               | 30                         | 1.200 [30.48] | 0.400 [10.16] | 0.500 [12.70] | 0.080 [2.03] |
| 13                   | 0.001               | 40                         | 1.250 [31.75] | 0.750 [19.05] | 0.500 [12.70] | 0.080 [2.03] |

| <b>MRS-1510</b>      |                     |                            |              |               |               |              |
|----------------------|---------------------|----------------------------|--------------|---------------|---------------|--------------|
| GLOBAL MODEL SPECIAL | RESISTANCE $\Omega$ | CURRENT RATING (MAXIMUM) A | DIMENSION L  | DIMENSION H   | DIMENSION CC  | DIMENSION LD |
| 01                   | 0.050               | 15                         | 1.00 [25.40] | 0.400 [10.16] | 0.215 [5.46]  | 0.057 [1.45] |
| 02                   | 0.003               | 25                         | 1.10 [27.94] | 0.355 [9.02]  | 0.200 [5.08]  | 0.040 [1.02] |
| 03                   | 0.0015              | 40                         | 1.10 [27.94] | 0.380 [9.65]  | 0.270 [6.86]  | 0.081 [2.06] |
| 04                   | 0.001               | 40                         | 1.00 [25.40] | 0.500 [12.70] | 0.300 [7.62]  | 0.081 [2.06] |
| 05                   | 0.002               | 30                         | 1.25 [31.75] | 0.750 [19.05] | 0.375 [9.53]  | 0.080 [2.03] |
| 06                   | 0.001               | 80                         | 2.19 [55.63] | 0.625 [15.87] | 0.625 [15.87] | 0.128 [3.25] |

**MATERIAL SPECIFICATIONS**

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

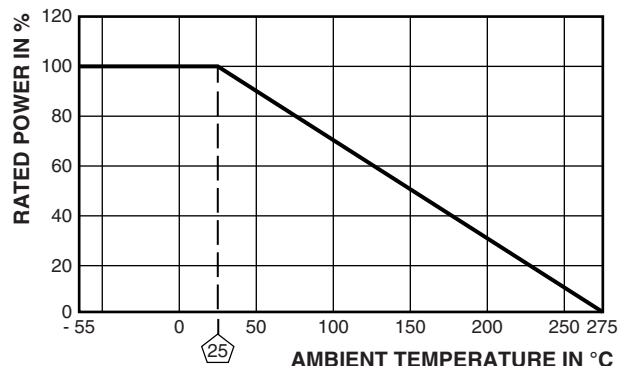
**Coating:** Silicone, when requested

**Standard Terminals:** Tinned copper

**Part Marking:** None

**AMBIENT TEMPERATURE DERATING**

Derating is required for ambient temperatures above 25 °C per the following graph:

**DERATING**




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