

# 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 <a href="https://www.vishay.com/doc?99912">www.vishay.com/doc?99912</a>





COMPLIANT

GREEN

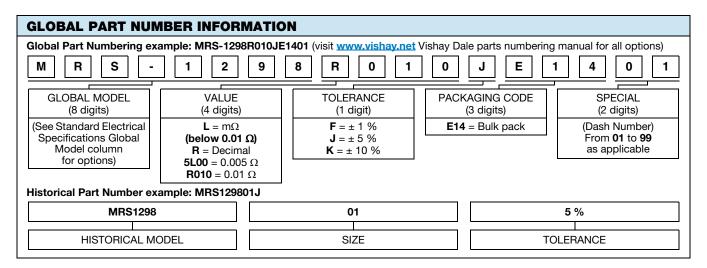
(5-2008)

| STANDARD ELECTRICAL SPECIFICATIONS |                  |                    |                           |  |  |
|------------------------------------|------------------|--------------------|---------------------------|--|--|
| GLOBAL MODEL (1)                   | HISTORICAL MODEL | TOLERANCE (2)<br>% | RESISTANCE RANGE $\Omega$ |  |  |
| MRS-1298xx                         | MRS1298xx        | 1, 5, 10           | 0.001 to 0.050            |  |  |
| MRS-1367xx                         | MRS1367xx        | 1, 5, 10           | 0.001 to 0.100            |  |  |
| MRS-1375xx                         | MRS1375xx        | 1, 5, 10           | 0.001 to 0.010            |  |  |
| MRS-1510xx                         | MRS1510xx        | 1, 5, 10           | 0.001 to 0.500            |  |  |

#### Notes

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

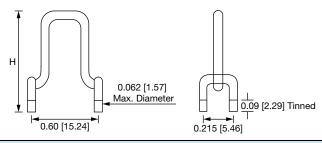
| TECHNICAL SPECIFICATIONS  |        |  |  |  |
|---|--------|--|--|--|
| PARAMETER UNIT MRS RESISTOR CHARACTERISTICS   |        |  |  |  |
| Temperature Coefficient   | ppm/°C | Typical is ± 100 (- 10 °C to + 80 °C) consult factory if application is TC sensitive |  |  |
| Maximum Current Rating  A 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



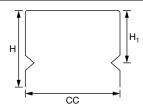
<sup>(1)</sup> The xx is for the two digit "special" number as described in Dimensions tables MRS-1298, MRS-1367, MRS-1375, and MRS-1510.



## **DIMENSIONS** in inches [millimeters]



| MRS-1298                |                 |                            |                |
|-------------------------|-----------------|----------------------------|----------------|
| GLOBAL MODEL<br>SPECIAL | RESISTANCE<br>Ω | CURRENT RATING (MAXIMUM) A | DIMENSION<br>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]   |

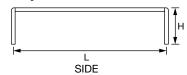


| MRS-1367                |                     |                                  |                           |                 |  |
|-------------------------|---------------------|----------------------------------|---------------------------|-----------------|--|
| GLOBAL MODEL<br>SPECIAL | RESISTANCE $\Omega$ | CURRENT RATING<br>(MAXIMUM)<br>A | DIMENSION<br>H<br>TYPICAL | DIMENSION<br>CC | DIMENSION<br>H <sub>1</sub><br>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]                          |

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## **DIMENSIONS** in inches [millimeters]





| MRS-1375                |                     |                                  |                |                |               |                 |
|-------------------------|---------------------|----------------------------------|----------------|----------------|---------------|-----------------|
| GLOBAL MODEL<br>SPECIAL | RESISTANCE $\Omega$ | CURRENT RATING<br>(MAXIMUM)<br>A | DIMENSION<br>L | DIMENSION<br>H | DIMENSION     | DIMENSION<br>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]    |

| MRS-1510                |                     |                                  |                |                |                 |                 |
|-------------------------|---------------------|----------------------------------|----------------|----------------|-----------------|-----------------|
| GLOBAL MODEL<br>SPECIAL | RESISTANCE $\Omega$ | CURRENT RATING<br>(MAXIMUM)<br>A | DIMENSION<br>L | DIMENSION<br>H | DIMENSION<br>CC | DIMENSION<br>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

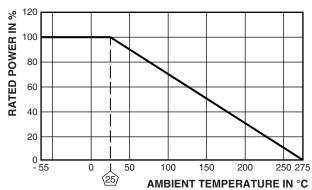
**Coating:** Silicone, when requested **Standard Terminals:** Tinned copper

Part Marking: None

#### AMBIENT TEMERATURE DERATING

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

#### **DERATING**





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