

Vishay Mills

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 <u>www.vishay.com/doc?99912</u>





GREEN (5-2008)

STANDARD ELECTRICAL SPECIFICATIONS						
GLOBAL MODEL (1)	HISTORICAL MODEL	TOLERANCE ⁽²⁾ %	RESISTANCE RANGE Ω			
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

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

⁽²⁾ Other tolerances may be available, contact factory.

TECHNICAL SPECIFICATIONS				
PARAMETER UNIT MRS RESISTOR CHARACTERISTICS				
Temperature Coefficient	ppm/°C	Typical is \pm 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 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 (8 digits)	VALUE (4 digits)	TOLERANCE (1 digit)		GING CODE 3 digits)	SPECIAL (2 digits)		
(See Standard Electrical Specifications Global Model column for options)	L = mΩ (below 0.01 Ω) R = Decimal 5L00 = 0.005 Ω R010 = 0.01 Ω	F = $\pm 1 \%$ J = $\pm 5 \%$ K = $\pm 10 \%$	From 01 to 99		(Dash Number) From 01 to 99 as applicable		
Historical Part Number example: MRS129801J							
MRS1298	01			5 %			
HISTORICAL MODEL		SIZE		TOLERANCE			

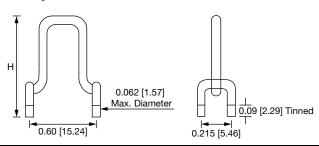
Revision: 28-Jun-12

1

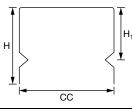
For technical questions, contact: <u>ww2aresistors@vishay.com</u> THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE. THE PRODUCTS DESCRIBED HEREIN AND THIS DOCUMENT ARE SUBJECT TO SPECIFIC DISCLAIMERS, SET FORTH AT <u>www.vishay.com/doc?91000</u> **DIMENSIONS** in inches [millimeters]

www.vishay.com

SHA'



MRS-1298			
GLOBAL MODEL SPECIAL	RESISTANCE Ω	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	$\begin{array}{c} \text{RESISTANCE} \\ \Omega \end{array}$	CURRENT RATING (MAXIMUM) A	DIMENSION H TYPICAL	DIMENSION CC	DIMENSION H ₁ 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]		

Revision: 28-Jun-12

2

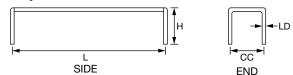
Document Number: 31805

For technical questions, contact: <u>ww2aresistors@vishay.com</u> THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE. THE PRODUCTS DESCRIBED HEREIN AND THIS DOCUMENT ARE SUBJECT TO SPECIFIC DISCLAIMERS, SET FORTH AT <u>www.vishay.com/doc?91000</u>



MRS Vishay Mills

DIMENSIONS in inches [millimeters]



MRS-1375						
GLOBAL MODEL SPECIAL	$\begin{array}{c} \text{RESISTANCE} \\ \Omega \end{array}$	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]

MRS-1510							
GLOBAL MODEL SPECIAL	$\begin{array}{c} \text{RESISTANCE} \\ \Omega \end{array}$	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

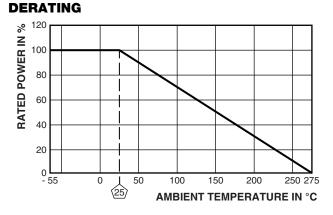
Coating: Silicone, when requested

Standard Terminals: Tinned copper

Part Marking: None

AMBIENT TEMERATURE DERATING

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



3



Vishay

Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay's knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Hyperlinks included in this datasheet may direct users to third-party websites. These links are provided as a convenience and for informational purposes only. Inclusion of these hyperlinks does not constitute an endorsement or an approval by Vishay of any of the products, services or opinions of the corporation, organization or individual associated with the third-party website. Vishay disclaims any and all liability and bears no responsibility for the accuracy, legality or content of the third-party website or for that of subsequent links.

Except as expressly indicated in writing, Vishay products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Vishay product could result in personal injury or death. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.

© 2024 VISHAY INTERTECHNOLOGY, INC. ALL RIGHTS RESERVED

Revision: 01-Jan-2024