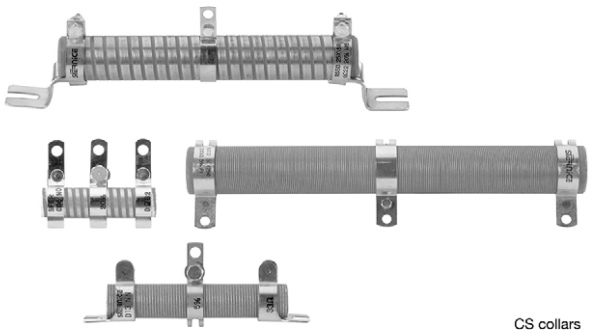
# Wirewound Resistor, Industrial High Power, Vitreous Tubular, Adjustable, Low Values 0.12 Ω to 560 Ω



CS collars

## FEATURES

- High power rating: 16 W to 600 W at 25 °C
- Heavy overloads 10 $P_n$ 5 s ≤ 1 %
- Low ohmic values 0.10 Ω available
- High long term stability drift < 1.5 % after 1000 h
- Excellent withstanding of thermal shock
- Mechanical strength
- Fire proof
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

Pb-free

RoHS COMPLIANT

## DESIGN SUPPORT TOOLS

click logo to get started

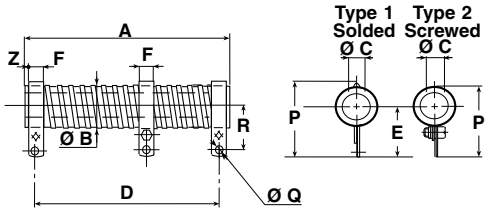
3D Models Available

RSSD medium and high power resistors are noted for their ability to withstand heavy transient and severe shock and vibration conditions. They complement the ohmic range of Vishay styles RW, RWST and RA in the low value area, and can be tapped by means of adjustable collars. Standard RSSD resistors have a single adjustable collar.

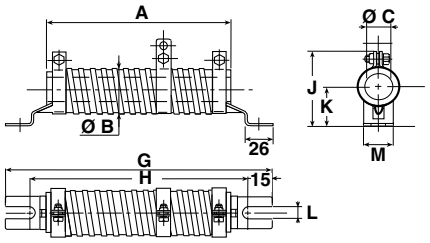
NF F 16101, 10/1988 and 16102, 04/1992: Not applicable (our parts are made of metallic and refractory materials).

## DIMENSIONS in millimeters

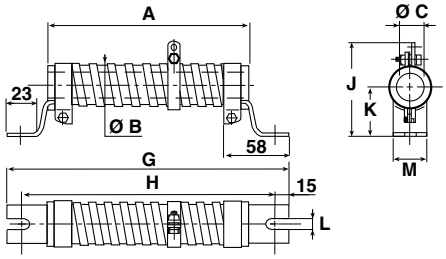
### WELDED STAINLESS STEEL 304 L COLLARS "AN" TYPE 1




### SCREWED STAINLESS STEEL 304 L COLLARS "CS" TYPE 1




### SCREWED STAINLESS STEEL 304 L COLLARS "CS" TYPE 2




| RSSD SERIES | CONNECTION | A ± 2 | Ø B MAX. | Ø C MIN. | D | E | F + 0.5 + 0 | P | Ø Q | R | Z APPROX. | AVERAGE UNIT WEIGHT IN g |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8 x 34 | AN type1 | 34 | 10 | 4.1 | 27 ± 2 | 20 ± 0.5 | 5 | 28 ± 1 | 3.2 | 16 ± 0.5 | 1 | 10 |
| 10 x 50 | AN type1 | 50 | 11.5 | 5 | 40 ± 2 | 22 ± 0.5 | 6.35 | 31 ± 1 | 4.2 | 18 ± 0.5 | 1.5 | 22 |
| 13 x 70 | AN type1 CS (1) | 70 | 14.5 | 6.7 | 56 ± 2 | 24 ± 0.5 | 6.35 | 34 ± 1 | 4.2 | 20 ± 0.5 | 3.5 | 38 |
| 16 x 94 | AN type1 | 94 | 18 | 9.2 | 78 ± 2 | 26.5 ± 0.5 | 6.35 | 38 ± 1 | 4.2 | 21 ± 0.5 | 4 | 55 |
| 20 x 117 | AN type1 | 117 | 22 | 12.6 | 98 ± 2 | 31 ± 0.7 | 6.35 | 42 ± 1 | 4.2 | 24 ± 0.7 | 5 | 80 |

**Note**

(1) CS connections on request



For technical questions, contact: sferfixedresistors@vishay.com

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## DIMENSIONS in millimeters

| RSSD SERIES | CONNECTIONS | | A ± 2 | Ø B MAX. | Ø C MIN. | D | E | F + 0.5 + 0 | G - 4 - 0 | H - 4 - 0 | J |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 25 x 138 | AN type1 | cs type1 | 138 | 27 | 16.4 | 117 ± 2 | 33.5 ± 1 | 9 | 199 | 169 | 50 ± 1.5 |
| 25 x 168 | AN type1 | cs type1 | 168 | 27 | 16.4 | 147 ± 2 | 33.5 ± 1 | 9 | 229 | 199 | 50 ± 1.5 |
| 30 x 250 | AN type1 | cs type1 | 250 | 32 | 21.3 | 227 ± 2.5 | 36 ± 1 | 13 | 317 | 287 | 60 ± 1.5 |
| 40 x 370 | AN type2 | cs type2 | 370 | 43 | 22.3 | 332 ± 3 | 57 ± 1.5 | 18 | 432 | 405 | 69 max. |
| 50 x 373 | AN type2 | cs type2 | 373 | 53 | 27.1 | 332 ± 3 | 63 ± 1.5 | 18 | 432 | 405 | 80 max. |

| RSSD SERIES | CONNECTIONS | | K | L ± 0.5 | M ± 0.5 | P | Ø Q | R | Z APPROX. | AVERAGE UNIT WEIGHT IN g | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | AN | CS |
| 25 x 138 | AN type1 | cs type1 | 27 ± 1 | 6.5 | 24 | 51 ± 1.5 | 5.7 | 28.5 ± 1 | 6 | 90 | 135 |
| 25 x 168 | AN type1 | cs type1 | 27 ± 1 | 6.5 | 24 | 51 ± 1.5 | 5.7 | 28.5 ± 1 | 6 | 115 | 160 |
| 30 x 250 | AN type1 | cs type1 | 30 ± 1 | 9 | 25 | 55 ± 1.5 | 5.7 | 31± 1 | 5 | 240 | 290 |
| 40 x 370 | AN type2 | cs type2 | 45 ± 1 | 9 | 30 | 81.5 max. | 9.2 | 45 ± 1.5 | 10 | 845 | 925 |
| 50 x 373 | AN type2 | cs type2 | 51 ± 1.5 | 9 | 30 | 92.5 max. | 9.2 | 51 ± 1.5 | 11.5 | 1270 | 1350 |

## STANDARD ELECTRICAL SPECIFICATIONS

| MODEL | SIZE | RESISTANCE RANGE Ω | RATED POWER $P_{25\,°C}$ W | TOLERANCE ± % |
|---|---|---|---|---|
| RSSD 8 x 34 | 0834 | 0.12 to 10 | 16 | 5, 10 , 20 |
| RSSD 10 x 50 | 1050 | 0.12 to 22 | 25 | 5, 10 , 20 |
| RSSD 13 x 70 | 1370 | 0.12 to 43 | 42 | 5, 10 , 20 |
| RSSD 16 x 94 | 1694 | 0.33 to 75 | 70 | 5, 10 , 20 |
| RSSD 20 x 117 | 20117 | 0.22 to 100 | 100 | 5, 10 , 20 |
| RSSD 25 x 138 | 25138 | 0.10 to 150 | 140 | 5, 10 , 20 |
| RSSD 25 x 168 | 25168 | 0.12 to 220 | 200 | 5, 10 , 20 |
| RSSD 30 x 250 | 30250 | 0.22 to 360 | 280 | 5, 10 , 20 |
| RSSD 40 x 370 | 40370 | 0.47 to 470 | 450 | 5, 10 , 20 |
| RSSD 50 x 373 | 50373 | 0.68 to 560 | 600 | 5, 10 , 20 |

## MECHANICAL SPECIFICATIONS

| | |
|---|---|
| Mechanical Protection | Vishay Sfernice special cement |
| Resistive Element | Nickel alloy wire |
| Connections | AN collars<br>CS supporting collars |
| Average Unit Weight | 10 g to 1350 g |

## ENVIRONMENTAL SPECIFICATIONS

| | |
|---|---|
| Temperature Range | -55 °C, +450 °C |
| Climatic Category | -55 °C / +200 °C / 56 days |

## TECHNICAL SPECIFICATIONS

| | |
|---|---|
| Resistance Range | 0.12 Ω to 560 Ω<br>(E12 series) |
| Standard Tolerance | R ≥ 10 Ω ± 5 % (1)<br>1 Ω ≤ R < 10 Ω ± 10 %<br>0.1 Ω ≤ R < 1 Ω ± 20 % |
| Power Rating | 14 W to 600 W at 25 °C |

**Note**

(1) 10 % for RSSD 8 x 34 only

## PERFORMANCE

| TESTS | CONDITIONS | REQUIREMENTS | TYPICAL VALUES AND DRIFTS |
|---|---|---|---|
| Short Time Overload | 10 $P_r$ during 5 s | 2 % | 1 % |
| Climatic Sequence | -55 °C, +200 °C<br>5 cycles | 3 % | 1 % |
| Thermal Shock | Load at 100 % $P_r$<br>followed by cold -55 °C / 15 | 2 %<br>or 0.05 Ω | 1 % |
| Load Life | 90 / 30 cycle<br>1000 h at $P_r$ at +25 °C | 5 % | 1.5 % |


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| SPECIAL FEATURES | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| RSSD TYPE | | 8 x 34 | 10 x 50 | 13 x 70 | 16 x 94 | 20 x 117 | 25 x 138 | 25 x 168 | 30 x 250 | 40 x 370 | 50 x 373 |
| Power Rating at 25 °C | Continuous | 16 W | 25 W | 42 W | 70 W | 100 W | 140 W | 200 W | 280 W | 450 W | 600 W |
| | Reduced | 14 W | 22 W | 38 W | 62 W | 90 W | 125 W | 170 W | 240 W | 360 W | 450 W |
| Resistance Ohmic Range (E12, E24 Series) with 1 Tapping | | 0.12 Ω 10 Ω | 0.12 Ω 22 Ω | 0.12 Ω 43 Ω | 0.33 Ω 75 Ω | 0.22 Ω 100 Ω | 0.10 Ω 150 Ω | 0.12 Ω 220 Ω | 0.22 Ω 360 Ω | 0.47 Ω 470 Ω | 0.68 Ω 560 Ω |
| Maximum Number of Additional Tapping | | 0 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 4 | 4 |
| Reduction % of Ohmic Value by Tapping | | 23 | 21 | 14 | 11 | 10 | 8 | 6.5 | 6 | 5.7 | 5.7 |

## ADDITIONAL TAPPINGS

Are supplied with their adjustable collars fastened but not set to any specific value. Please note that, on request, all tappings can be adjusted by Vishay Sfernice. For adjustment purposes we would need to be advised of the ohmic values, and tolerances of the sections in successive order in addition to their sum $R_n$.

The permissible maximum value for an adjustment should take into account the possible negative tolerance of $R_n$.

Please consult Vishay Sfernice regarding the acceptable tolerance.

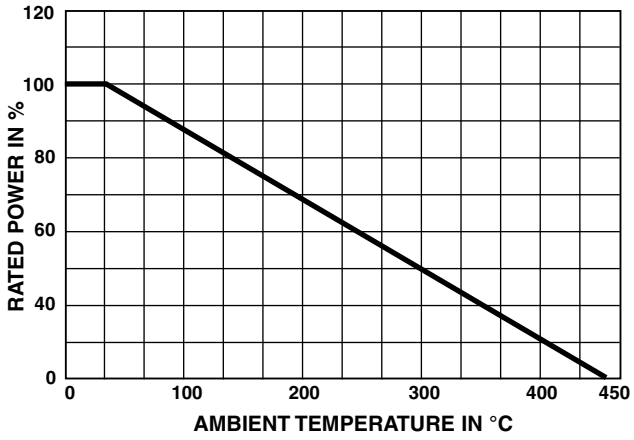
## RECOMMENDATIONS FOR USE

**Maximum Current Strength:**

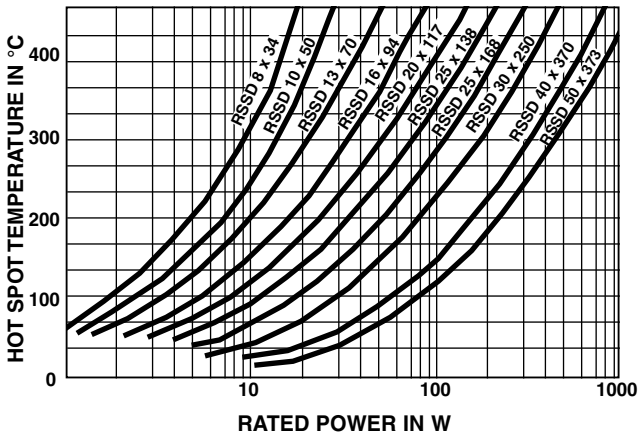
The ohmic value and the power decrease as the connections are brought together. To avoid overload, the maximum current strength that is permissible for $R_n$ should never be exceeded:

$$I_{max.} = \sqrt{P_r / R_n}$$

## POWER RATING




## TEMPERATURE RISE




## MARKING

Vishay Sfernice trademark, model, style, nominal resistance (in Ω), tolerance (in %), manufacturing date.

| ORDERING INFORMATION | | | | | | | |
|---|---|---|---|---|---|---|---|
| RSSD | 10 × 50 | | AN | 10U | 5 % | BA25 | e |
| MODEL | STYLE | SPECIAL DESIGN<br><br>Method N° Optional | CONNECTIONS | OHMIC VALUE<br><br>Custom items are subject to extra-charge and min. order. Please see price list. | TOLERANCE | PACKAGING | LEAD (Pb)-FREE |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## GLOBAL PART NUMBER INFORMATION

| R | S | S | D | 2 | 5 | 1 | 3 | 8 | A | 1 | 5 | R | 0 | J | B | 1 | 5 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

| GLOBAL MODEL | SIZE | LEADS | OHMIC VALUE | TOLERANCE | PACKAGING | SPECIAL |
|---|---|---|---|---|---|---|
| **RSSD** | **08 x 34**<br>**10 x 50**<br>**13 x 70**<br>**16 x 94**<br>**20 x 117**<br>**25 x 138**<br>**25 x 168**<br>**30 x 250**<br>**40 x 370**<br>**50 x 373** | **A** = AN<br>**B** = B<br>**C** = CS<br>**F** = faston | The three first digits are significant figures and the last digit specifies the number of zeros to follow.<br>R designates decimal point.<br><br>**4700** = 470 Ω<br>**48R5** = 48.5 Ω<br>**R010** = 0.01 Ω<br>... | **J** = 5 %<br>**K** = 10 %<br>**M** = 20 % | Standard packaging:<br>**BXX** = box, XXPCS (fixed qty depending on size)<br><br>No standard packaging:<br>**B00** = box, qty open | As applicable.<br>Example: **CB4** |

## RELATED DOCUMENTS

| APPLICATION NOTES | |
|---|---|
| Packaging Information | www.vishay.com/doc?50033 |
| Accessories | www.vishay.com/doc?50021 |



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