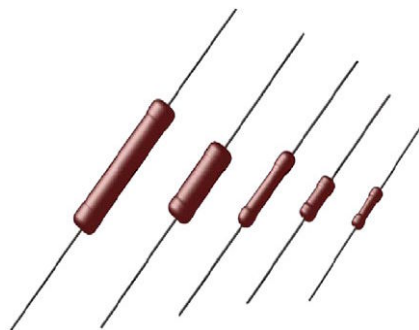


## Wirewound Resistors, Commercial Power, Silicone Coated, Axial Lead



### FEATURES

- High temperature coating (> 350 °C)
- All welded construction
- Available in vitreous coating as ALVR
- Available in non-inductive styles with Ayrton-Perry winding for lowest reactive components, special "NI"
- For non-inductive models, divide maximum resistance values by two
- Material categorization:  
for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



**RoHS**  
COMPLIANT  
HALOGEN  
**FREE**  
**GREEN**  
(5-2008)

### STANDARD ELECTRICAL SPECIFICATIONS

| GLOBAL MODEL | HISTORICAL MODEL | POWER RATING <sup>(1)</sup><br>$P_{25\text{ }^{\circ}\text{C}}$ W<br>CHARACTERISTIC U +250 °C | POWER RATING <sup>(1)</sup><br>$P_{25\text{ }^{\circ}\text{C}}$ W<br>CHARACTERISTIC V +350 °C | RESISTANCE RANGE<br>$\Omega$ | TOLERANCE <sup>(2)</sup><br>% | WEIGHT (typical)<br>g |
|--------------|------------------|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|------------------------------|-------------------------------|-----------------------|
| ALSR01       | ALSR-1           | 1                                                                                             | -                                                                                             | 0.10 to 6.37K                | 1, 3, 5, 10                   | 0.27                  |
| ALVR01       | ALVR-1           | 1                                                                                             | -                                                                                             | 0.10 to 6.37K                | 1, 3, 5, 10                   | 0.27                  |
| ALSR03       | ALSR-3           | 3                                                                                             | -                                                                                             | 0.10 to 12K                  | 1, 3, 5, 10                   | 0.68                  |
| ALVR03       | ALVR-3           | 3                                                                                             | -                                                                                             | 0.10 to 12K                  | 1, 3, 5, 10                   | 0.68                  |
| ALSR5A       | ALSR-5A          | 4                                                                                             | 5                                                                                             | 0.10 to 40.3K                | 1, 3, 5, 10                   | 2.1                   |
| ALVR5A       | ALVR-5A          | 4                                                                                             | 5                                                                                             | 0.10 to 40.3K                | 1, 3, 5, 10                   | 2.1                   |
| ALSR05       | ALSR-5           | 5                                                                                             | 7                                                                                             | 0.10 to 58.5K                | 1, 3, 5, 10                   | 3.2                   |
| ALVR05       | ALVR-5           | 5                                                                                             | 7                                                                                             | 0.10 to 58.5K                | 1, 3, 5, 10                   | 3.2                   |
| ALSR10       | ALSR-10          | 7                                                                                             | 10                                                                                            | 0.10 to 92K                  | 1, 3, 5, 10                   | 4.9                   |
| ALVR10       | ALVR-10          | 7                                                                                             | 10                                                                                            | 0.10 to 92K                  | 1, 3, 5, 10                   | 4.9                   |

#### Notes

- <sup>(1)</sup> Vishay Huntington ALSR / ALVR models have two power ratings depending on operation temperature and stability requirements. Models not available for characteristic V are: ALSR01, ALVR01, ALSR03, and ALVR03
- <sup>(2)</sup> Other tolerances may be available, contact factory

### GLOBAL PART NUMBER INFORMATION

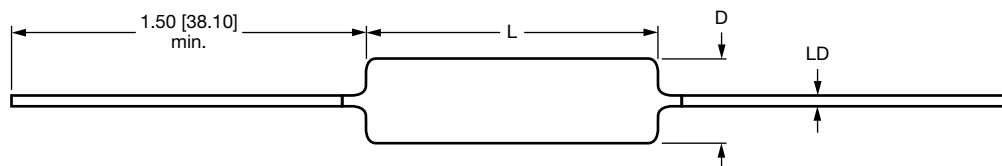
Global Part Numbering Example: **ALSR0325R00FE12NI**

**A** **L** **S** **R** **0** **3** **2** **5** **R** **0** **0** **F** **E** **1** **2** **N** **I**

| GLOBAL MODEL<br>(6 digits)                                               | VALUE<br>(5 digits)                                                                                       | TOLERANCE<br>(1 digit)                                                                                | PACKAGING<br>(3 digits)                                                                                                                                                                                                                                                                                                                                      | SPECIAL<br>(up to 2 digits)                                                         |
|--------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| (see Standard Electrical Specifications Global Model column for options) | <b>R</b> = decimal<br><b>K</b> = thousand<br><b>1R500</b> = 1.5 $\Omega$<br><b>1K500</b> = 1.5 k $\Omega$ | <b>F</b> = $\pm 1.0\%$<br><b>H</b> = $\pm 3.0\%$<br><b>J</b> = $\pm 5.0\%$<br><b>K</b> = $\pm 10.0\%$ | <b>E07</b> = tape / reel<br>(ALSR5A / ALVR5A, ALSR05 / ALVR05)<br><b>E08</b> = tape / reel (ALSR01 / ALVR01)<br><b>E29</b> = tape / reel (ALSR10 / ALVR10)<br><b>E48</b> = tape / reel (ALSR03 / ALVR03)<br><b>E70</b> = tape / reel, 1K pieces<br>(smaller than ALSR05 / ALVR05)<br><b>E73</b> = tape / reel, 500 pieces<br><b>E12</b> = bulk, 100 pc boxes | (dash number) from <b>1</b> to <b>99</b> as applicable<br><b>NI</b> = non-inductive |

Historical Part Number Example: **ALSR-3-25-1 %-NI**

|                  |                               |            |           |
|------------------|-------------------------------|------------|-----------|
| <b>ALSR-3</b>    | <b>25 <math>\Omega</math></b> | <b>1 %</b> | <b>NI</b> |
| HISTORICAL MODEL | RESISTANCE VALUE              | TOLERANCE  | SPECIAL   |

**DIMENSIONS** in inches [millimeters]


| GLOBAL MODEL | DIMENSIONS in inches [millimeters] |                      |                       |
|--------------|------------------------------------|----------------------|-----------------------|
|              | L<br>± 0.032 [0.813]               | D<br>± 0.032 [0.813] | LD<br>± 0.002 [0.051] |
| ALSR01       | 0.406 [10.31]                      | 0.110 [2.79]         | 0.020 [0.508]         |
| ALVR01       | 0.406 [10.31]                      | 0.110 [2.79]         | 0.020 [0.508]         |
| ALSR03       | 0.500 [12.70]                      | 0.180 [4.57]         | 0.032 [0.813]         |
| ALVR03       | 0.500 [12.70]                      | 0.180 [4.57]         | 0.032 [0.813]         |
| ALSR5A       | 0.920 [23.37]                      | 0.200 [5.08]         | 0.032 [0.813]         |
| ALVR5A       | 0.920 [23.37]                      | 0.200 [5.08]         | 0.032 [0.813]         |
| ALSR05       | 0.875 [22.23]                      | 0.312 [7.92]         | 0.032 [0.813]         |
| ALVR05       | 0.875 [22.23]                      | 0.312 [7.92]         | 0.032 [0.813]         |
| ALSR10       | 1.730 [43.94]                      | 0.312 [7.92]         | 0.032 [0.813]         |
| ALVR10       | 1.730 [43.94]                      | 0.312 [7.92]         | 0.032 [0.813]         |

**MATERIAL SPECIFICATIONS**

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

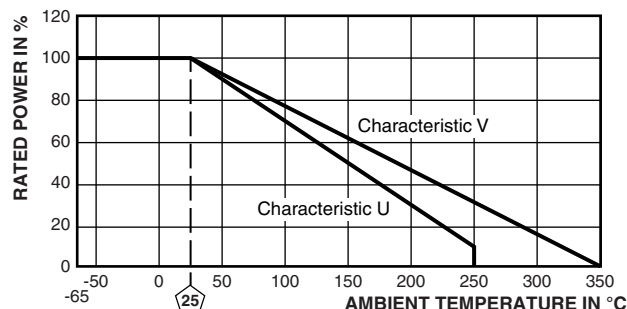
**Core:** ceramic: steatite or alumina, depending on physical size

**End Caps:** stainless steel

**Coating:** special high temperature silicone or special formula of “vitreous like appearance” coating on ALVR

**Terminals:** tinned copper clad steel

**Part Marking:** HEI, model, value, tolerance, date code

**DERATING**


| TECHNICAL SPECIFICATIONS        |                 |                                                                          |
|---------------------------------|-----------------|--------------------------------------------------------------------------|
| PARAMETER                       | UNIT            | RESISTOR CHARACTERISTICS                                                 |
| Temperature Coefficient         | ppm/°C          | ± 30 for 10 Ω and above; ± 50 for 1 Ω to 9.9 Ω; ± 90 for 0.5 Ω to 0.99 Ω |
| Terminal Strength               | lb              | 10 minimum                                                               |
| Dielectric Withstanding Voltage | V <sub>AC</sub> | 500 for 1 W and 1000 for 3 W and above                                   |
| Operating Temperature Range     | °C              | Characteristic U = -65 to +250, characteristic V = -65 to +350           |
| Maximum Working Voltage         | V               | (P × R) <sup>1/2</sup>                                                   |

| PERFORMANCE                     |                                                                                          |                                |
|---------------------------------|------------------------------------------------------------------------------------------|--------------------------------|
| TEST                            | CONDITIONS OF TEST                                                                       | TEST LIMITS (CHARACTERISTIC V) |
| Thermal Shock                   | Rated power applied until thermally stable, then a minimum of 15 min at -55 °C           | ± (2.0 % + 0.05 Ω) > ΔR        |
| Short Time Overload             | 5x rated power (3 W and smaller), 10x rated power (4 W and larger) for 5 s               | ± (2.0 % + 0.05 Ω) > ΔR        |
| Dielectric Withstanding Voltage | 500 V <sub>RMS</sub> , 1 min for 1 W and 1000 V <sub>RMS</sub> , 1 min for 3 W and above | ± (0.1 % + 0.05 Ω) > ΔR        |
| Low Temperature Storage         | -65 °C for 24 h                                                                          | ± (2.0 % + 0.05 Ω) > ΔR        |
| High Temperature Exposure       | 250 h at U = +250 °C, V = +350 °C                                                        | ± (4.0 % + 0.05 Ω) > ΔR        |
| Mechanical Shock                | MIL-STD-202 method 213, 100 g's for 6 ms, 10 shocks                                      | ± (0.2 % + 0.05 Ω) > ΔR        |
| Vibration                       | Frequency varied 10 Hz to 2000 Hz, 20 g peak, 2 directions 6 h each                      | ± (0.2 % + 0.05 Ω) > ΔR        |
| Load Life                       | 2000 h at rated power, +25 °C, 1.5 h “ON”, 0.5 h “OFF”                                   | ± (3.0 % + 0.05 Ω) > ΔR        |
| Moisture Resistance             | MIL-STD-202 method 106, 7b not applicable                                                | ± (2.0 % + 0.05 Ω) > ΔR        |



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