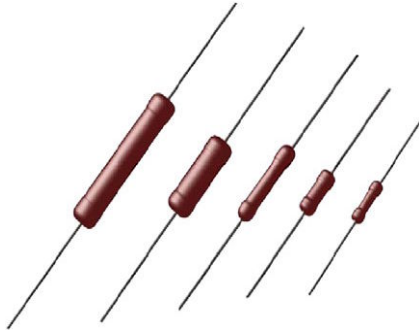


## Wirewound Resistors, Commercial Power, Silicone Coated, Axial Lead


**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)



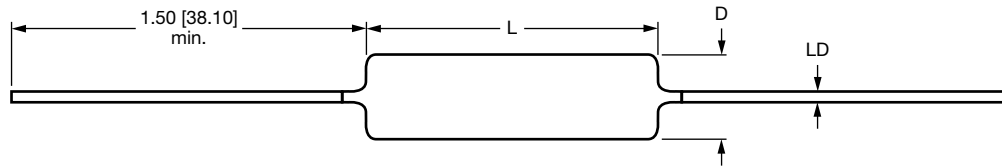
| STANDARD ELECTRICAL SPECIFICATIONS |                  |   |   |                              |                               |                       |
|------------------------------------|------------------|---|---|------------------------------|-------------------------------|-----------------------|
| 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: <b>ALSR0325R00FE12NI</b>                  |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |
| 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) | R = decimal<br>K = thousand<br>1R500 = 1.5 $\Omega$<br>1K500 = 1.5 k $\Omega$ | F = $\pm 1.0\%$<br>H = $\pm 3.0\%$<br>J = $\pm 5.0\%$<br>K = $\pm 10.0\%$ | E07 = tape / reel<br>(ALSR5A / ALVR5A, ALSR05 / ALVR05)<br>E08 = tape / reel (ALSR01 / ALVR01)<br>E29 = tape / reel (ALSR10 / ALVR10)<br>E48 = tape / reel (ALSR03 / ALVR03)<br>E70 = tape / reel, 1K pieces<br>(smaller than ALSR05 / ALVR05)<br>E73 = tape / reel, 500 pieces<br>E12 = bulk, 100 pc boxes |   |   | (dash number)<br>from 1 to 99<br>as applicable<br>NI = non-inductive |   |   |   |   |   |   |   |   |   |   |
| Historical Part Number Example: <b>ALSR-3-25-1 %-NI</b>                  |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |
| ALSR-3   | 25 $\Omega$   | 1 %   | NI  |   |   |  |   |   |   |   |   |   |   |   |   |   |
| 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

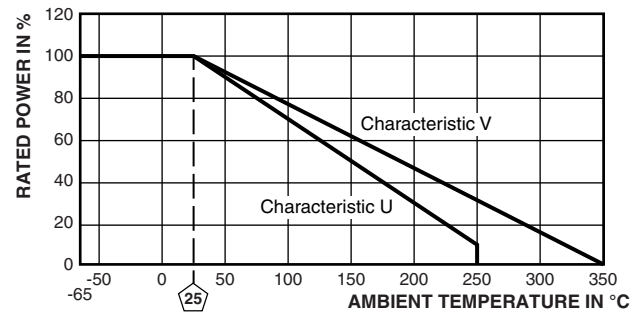
**End Caps:** stainless steel

**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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