

Wirewound Resistors, Commercial Power, Silicone Coated, Axial Lead


FEATURES

- High temperature coating (> 350 °C)
- All welded construction
- Available with “vitreous like appearance” 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


STANDARD ELECTRICAL SPECIFICATIONS

| GLOBAL MODEL | HISTORICAL MODEL | POWER RATING ⁽¹⁾ $P_{25\text{ }^\circ\text{C W}}$ CHARACTERISTIC U +250 °C | POWER RATING ⁽¹⁾ $P_{25\text{ }^\circ\text{C W}}$ CHARACTERISTIC V +350 °C | RESISTANCE RANGE Ω | TOLERANCE ⁽²⁾ % | WEIGHT (typical) 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

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

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

| | | | |
|------------------|-------------------------------|------------|-----------|
| ALSR-3 | 25 Ω | 1 % | NI |
| HISTORICAL MODEL | RESISTANCE VALUE | TOLERANCE | SPECIAL |

DIMENSIONS in inches [millimeters]



| GLOBAL MODEL | DIMENSIONS in inches [millimeters] | | |
|--------------|------------------------------------|----------------------|-----------------------|
| | L ± 0.032 [0.813] | D ± 0.032 [0.813] | LD ± 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

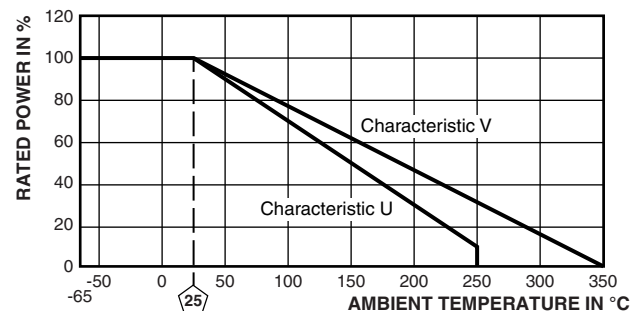
End Caps: stainless steel

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 _{AC} | 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) ^{1/2} |

| 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 _{RMS} , 1 min for 1 W and 1000 V _{RMS} , 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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