

## 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](http://www.vishay.com/doc?99912)


**STANDARD ELECTRICAL SPECIFICATIONS**

GLOBAL MODEL	HISTORICAL MODEL	POWER RATING <sup>(1)</sup> $P_{25\text{ }^\circ\text{C W}}$ CHARACTERISTIC U +250 °C	POWER RATING <sup>(1)</sup> $P_{25\text{ }^\circ\text{C W}}$ CHARACTERISTIC V +350 °C	RESISTANCE RANGE $\Omega$	TOLERANCE <sup>(2)</sup> %	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**

- <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
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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)	<b>R</b> = decimal <b>K</b> = thousand <b>1R500</b> = 1.5 $\Omega$ <b>1K500</b> = 1.5 k $\Omega$	<b>F</b> = $\pm 1.0\%$ <b>H</b> = $\pm 3.0\%$ <b>J</b> = $\pm 5.0\%$ <b>K</b> = $\pm 10.0\%$	<b>E07</b> = tape / reel (ALSR5A / ALVR5A, ALSR05 / ALVR05) <b>E08</b> = tape / reel (ALSR01 / ALVR01) <b>E29</b> = tape / reel (ALSR10 / ALVR10) <b>E48</b> = tape / reel (ALSR03 / ALVR03) <b>E70</b> = tape / reel, 1K pieces (smaller than ALSR05 / ALVR05) <b>E73</b> = tape / reel, 500 pieces <b>E12</b> = bulk, 100 pc boxes	(dash number) from <b>1</b> to <b>99</b> as applicable <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 ± 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

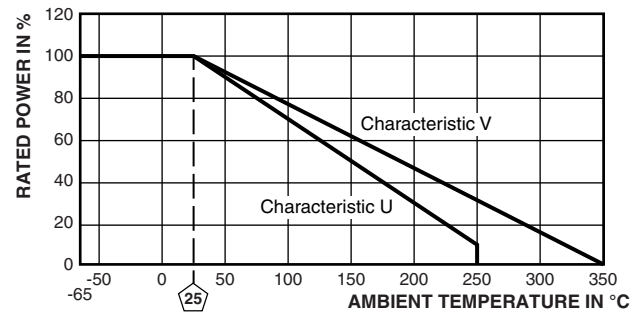
**End Caps:** stainless steel

**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 <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	$(P \times R)^{1/2}$

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 <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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