

## 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**

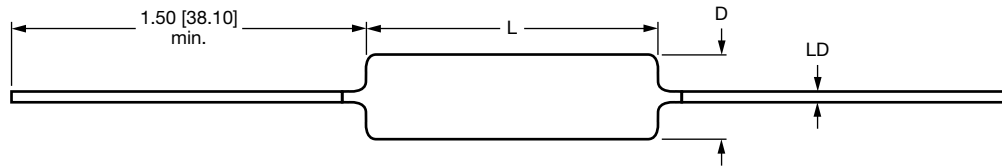
A	L	S	R	0	3	2	5	R	0	0	F	E	1	2	N	I
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

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

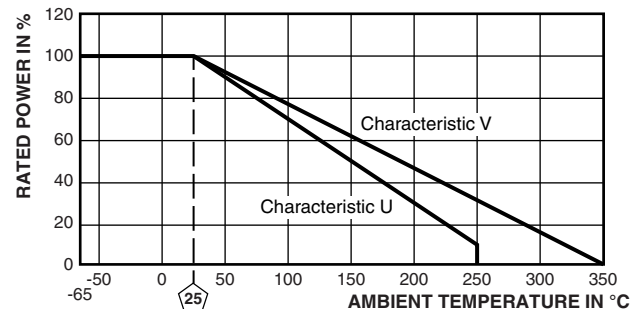
**End Caps:** stainless steel

**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



## **Disclaimer**

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay's knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Except as expressly indicated in writing, Vishay products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Vishay product could result in personal injury or death. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.