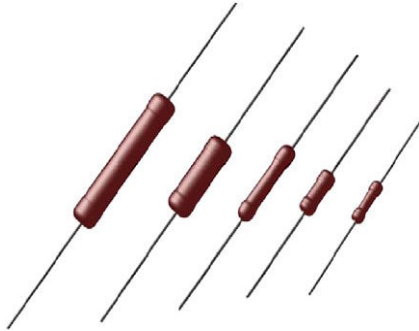




**THE DATASHEET OF
ALSR031R500FE12**



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



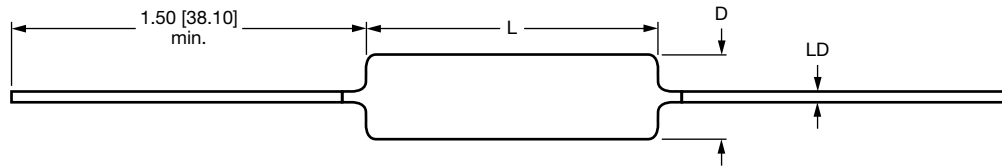
STANDARD ELECTRICAL SPECIFICATIONS						
GLOBAL MODEL	HISTORICAL MODEL	POWER RATING ⁽¹⁾ $P_{25\text{ }^\circ\text{C W}}$ CHARACTERISTIC U +250 °C	POWER RATING ⁽¹⁾ $P_{25\text{ }^\circ\text{C W}}$ CHARACTERISTIC V +350 °C	RESISTANCE RANGE Ω	TOLERANCE ⁽²⁾ %	WEIGHT (typical) g
ALSR01	ALSR-1	1	-	0.10 to 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

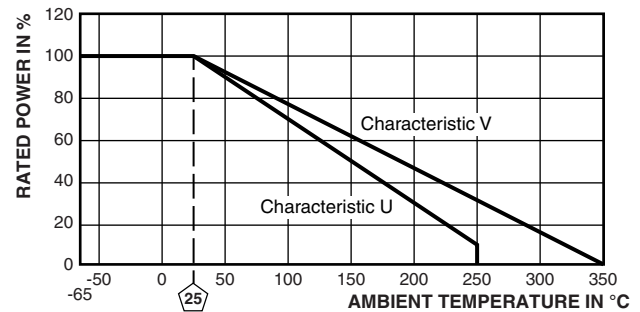
End Caps: stainless steel

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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