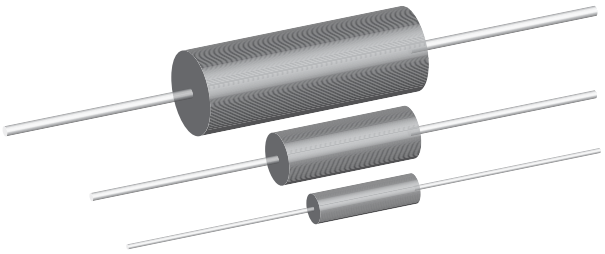
Wirewound Resistors, Precision Power, Low Value, Commercial, Axial Lead



FEATURES

- Ideal for all types of current sensing applications including switching and linear power supplies, instruments and power amplifiers
- Excellent load life stability
- Low temperature coefficient
- Low inductance
- MIL-PRF-49465 qualified, type RLV resistors can be found at: www.vishay.com/doc?30283
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

Pb-free Available

e3

RoHS* Available

HALOGEN FREE Available

GREEN (5-2008) Available

Note

* This datasheet provides information about parts that are RoHS-compliant and / or parts that are non RoHS-compliant. For example, parts with lead (Pb) terminations are not RoHS-compliant. Please see the information / tables in this datasheet for details

DESIGN SUPPORT TOOLS

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3D Models Available

STANDARD ELECTRICAL SPECIFICATIONS

GLOBAL MODEL	HISTORICAL MODEL	POWER RATING $P_{25\,°C}$ W	RESISTANCE RANGE (1) Ω	TOLERANCE ± %	TECHNOLOGY	WEIGHT (typical) g
LVR01	LVR-1	1	0.01 to 0.1 (2)	1, 3, 5, 10	Metal strip	0.5
LVR03	LVR-3	3	0.005 to 0.2	1, 3, 5, 10	Metal strip	2
LVR05	LVR-5	5	0.005 to 0.3	1, 3, 5, 10	Metal strip	5
LVR10	LVR-10	10	0.01 to 0.8	1, 3, 5, 10	Coil spacewound	11

Notes

(1) Resistance is measured 3/8" [9.52 mm] from the body of the resistor, or at 1.183" [30.05 mm], 1.315" [33.40 mm], 1.675" [42.545 mm] or 2.575" [65.405 mm] spacing for the LVR01, LVR03, LVR05 and LVR10 respectively

(2) LVR01: Standard resistance values are 0.01 Ω, 0.015 Ω, 0.02 Ω, 0.025 Ω, 0.03 Ω, 0.033 Ω, 0.04 Ω, 0.05 Ω, 0.051 Ω, 0.06 Ω, 0.068 Ω, 0.07 Ω, 0.08 Ω, 0.09 Ω and 0.1 Ω with 1 % tolerance. Other resistance values may be available upon request

TECHNICAL SPECIFICATIONS

PARAMETER	UNIT	LVR01	LVR03	LVR05	LVR10
Operating Temperature Range	°C	-65 to +175	-65 to +275		
Dielectric Withstanding Voltage	V_{AC}	1000	1000	1000	1000
Insulation Resistance	Ω	10 000 MΩ minimum dry			
Short Time Overload	-	5 x rated power for 5 s			10 x rated power for 5 s
Terminal Strength (minimum)	lb	5	10	10	10
Maximum Working Voltage	V	$(P \times R)^{1/2}$			

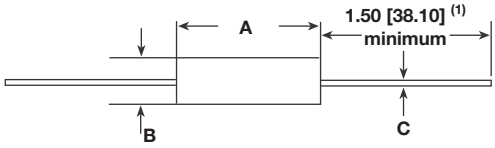
GLOBAL PART NUMBER INFORMATION

Global Part Numbering example: LVR055L000FS73 (visit www.vishay.net Vishay Dale parts numbering manual for all options)

L	V	R	0	5	5	L	0	0	0	F	S	7	3			

GLOBAL MODEL	VALUE	TOLERANCE	PACKAGING	SPECIAL
LVR01 **LVR03** **LVR05** **LVR10**	**R** = decimal **L** = mΩ (values < 0.010 Ω) **R1500** = 0.15 Ω **7L000** = 0.007Ω	**D** = ± 0.5 % **F** = ± 1.0 % **G** = ± 2.0 % **H** = ± 3.0 % **J** = ± 5.0 % **K** = ± 10.0 %	**E12** = lead (Pb)-free bulk **E03** = lead (Pb)-free lacer pack (LVR10) **E70** = lead (Pb)-free, tape / reel 1000 pieces (LVR01, 03) **E73** = lead (Pb)-free, tape / reel 500 pieces **B12** = tin / lead bulk **L03** = tin / lead lacer pack (LVR10) **S70** = tin / lead, tape / reel 1000 pieces (LVR01, 03) **S73** = tin / lead, tape/reel 500 pieces	(dash number) (up to 3 digits) From **1 to 999** as applicable

DIMENSIONS in inches [millimeters]



MODEL	DIMENSIONS in inches [millimeters]		
	A ± 0.010 [0.254]	B ± 0.010 [0.254]	C ± 0.002 [0.051]
LVR01	0.427 [10.85]	0.115 [2.92]	0.020 [0.508]
LVR03	0.560 [14.22]	0.205 [5.21]	0.032 [0.813]
LVR05	0.925 [23.50]	0.330 [8.38]	0.040 [1.02]
LVR10	1.828 [46.43]	0.392 [9.96]	0.040 [1.02]

Note

(1) On some standard reel pack methods, the leads may be trimmed to a shorter length than shown

MATERIAL SPECIFICATIONS

Element: Self-supporting nickel-chrome alloy (LVR10 also utilizes manganin)

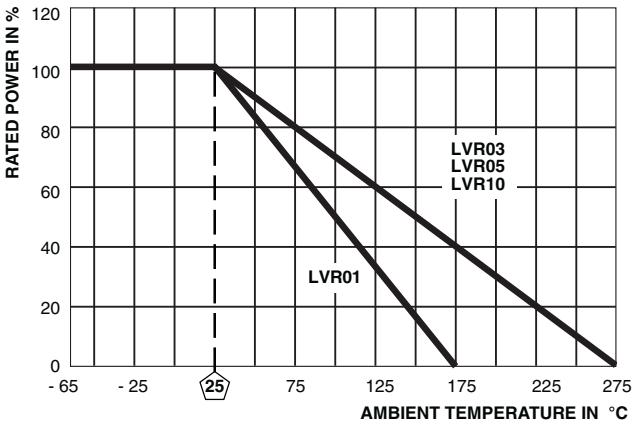
Encapsulation: High temperature mold compound

Terminals: Tinned copper

Part Marking: Dale, model, wattage, value, tolerance, date code

Packaging: Reference "Wirewound Through Hole Resistor Packaging" (www.vishay.com/doc?21028)

DERATING



TEMPERATURE COEFFICIENT (ppm/°C)			
LVR01	LVR03	LVR05	LVR10
± 1000 for 0.01 Ω to 0.0249 Ω ± 400 for 0.025 Ω to 0.0499 Ω ± 300 for 0.05 Ω to 0.0749 Ω ± 250 for 0.075 Ω to 0.099 Ω ± 150 for 0.1 Ω to 0.1 Ω	± 850 for 0.005 Ω to 0.0099 Ω ± 350 for 0.01 Ω to 0.0249 Ω ± 200 for 0.025 Ω to 0.0499 Ω ± 125 for 0.05 Ω to 0.0749 Ω ± 75 for 0.075 Ω to 0.099 Ω ± 50 for 0.1 Ω to 0.2 Ω	± 650 for 0.005 Ω to 0.0099 Ω ± 250 for 0.01 Ω to 0.0249 Ω ± 150 for 0.025 Ω to 0.0499 Ω ± 100 for 0.05 Ω to 0.0749 Ω ± 75 for 0.075 Ω to 0.099 Ω ± 50 for 0.1 Ω to 0.3 Ω	± 300 for 0.01 Ω to 0.0249 Ω ± 150 for 0.025 Ω to 0.0499 Ω ± 125 for 0.05 Ω to 0.0749 Ω ± 100 for 0.075 Ω to 0.099 Ω ± 50 for 0.1 Ω to 0.8 Ω

PERFORMANCE		
TEST	CONDITIONS OF TEST	TEST LIMITS
Thermal Shock	-65 °C to +125 °C, 5 cycles, 15 min at each extreme	± (0.2 % + 0.0005 Ω) Δ*R*
Short Time Overload	5x rated power (LVR01, 03, 05), 10 x rated power (LVR10) for 5 s	± (0.5 % + 0.0005 Ω) Δ*R*
Low Temperature Storage	-65 °C for 24 h	± (0.2 % + 0.0005 Ω) Δ*R*
High Temperature Exposure	250 h at +275 °C (+175 °C for LVR01)	± (2.0 % + 0.0005 Ω) Δ*R*
Dielectric Withstanding Voltage	1000 V_{RMS}, 1 min	± (0.1 % + 0.0005 Ω) Δ*R*
Insulation Resistance	MIL-STD-202 Method 302, 100 V	1000 MΩ minimum
Moisture Resistance	MIL-STD-202 Method 106, 7b not applicable	± (0.2 % + 0.0005 Ω) Δ*R*
Shock, Specified Pulse	MIL-STD-202 Method 213, 100 *g*'s for 6 ms, 10 shocks	± (0.1 % + 0.0005 Ω) Δ*R*
Vibration, High Frequency	Frequency varied 10 Hz to 2000 Hz, 20 *g* peak, 2 directions 6 h each	± (0.1 % + 0.0005 Ω) Δ*R*
Load Life	2000 h at rated power, +25 °C, 1.5 h "ON", 0.5 h "OFF"	± (2.0 % + 0.0005 Ω) Δ*R*
Bias Humidity	+85 °C, 85 % RH, 10 % bias, 1000 h	± (1.0 % + 0.0005 Ω) Δ*R*

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