

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


**DESIGN SUPPORT TOOLS**
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**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](http://www.vishay.com/doc?30283)
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)


**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

**STANDARD ELECTRICAL SPECIFICATIONS**

GLOBAL MODEL	HISTORICAL MODEL	POWER RATING $P_{25^{\circ}\text{C}}$ W	RESISTANCE RANGE <sup>(1)</sup> $\Omega$	TOLERANCE $\pm$ %	TECHNOLOGY	WEIGHT (typical) g
LVR01	LVR-1	1	0.01 to 0.1 <sup>(2)</sup>	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**

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

**TECHNICAL SPECIFICATIONS**

PARAMETER	UNIT	LVR01	LVR03	LVR05	LVR10
Operating Temperature Range	$^{\circ}\text{C}$	-65 to +175	-65 to +275		
Dielectric Withstanding Voltage	$V_{\text{AC}}$	1000	1000	1000	1000
Insulation Resistance	$\Omega$	10 000 M $\Omega$ 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](http://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			
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GLOBAL MODEL	VALUE	TOLERANCE	PACKAGING	SPECIAL
LVR01 LVR03 LVR05 LVR10	R = decimal L = m $\Omega$ (values < 0.010 $\Omega$ ) R1500 = 0.15 $\Omega$ 7L000 = 0.007 $\Omega$	D = $\pm$ 0.5 % F = $\pm$ 1.0 % G = $\pm$ 2.0 % H = $\pm$ 3.0 % J = $\pm$ 5.0 % K = $\pm$ 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**

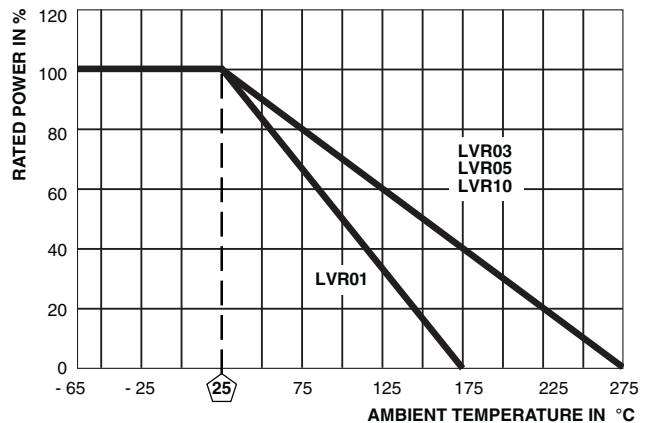
**Element:** Self-supporting nickel-chrome alloy (LVR10 also utilizes manganin)

**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](http://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) ΔR
Short Time Overload	5x rated power (LVR01, 03, 05), 10 x rated power (LVR10) for 5 s	± (0.5 % + 0.0005 Ω) ΔR
Low Temperature Storage	-65 °C for 24 h	± (0.2 % + 0.0005 Ω) ΔR
High Temperature Exposure	250 h at +275 °C (+175 °C for LVR01)	± (2.0 % + 0.0005 Ω) ΔR
Dielectric Withstanding Voltage	1000 V <sub>RMS</sub> , 1 min	± (0.1 % + 0.0005 Ω) ΔR
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) ΔR
Shock, Specified Pulse	MIL-STD-202 Method 213, 100 g's for 6 ms, 10 shocks	± (0.1 % + 0.0005 Ω) ΔR
Vibration, High Frequency	Frequency varied 10 Hz to 2000 Hz, 20 g peak, 2 directions 6 h each	± (0.1 % + 0.0005 Ω) ΔR
Load Life	2000 h at rated power, +25 °C, 1.5 h "ON", 0.5 h "OFF"	± (2.0 % + 0.0005 Ω) ΔR
Bias Humidity	+85 °C, 85 % RH, 10 % bias, 1000 h	± (1.0 % + 0.0005 Ω) ΔR



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