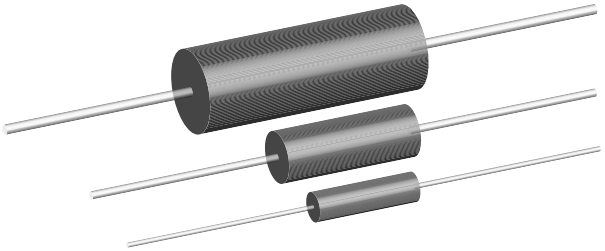
Wirewound Resistors, Precision Power, Low Value, Commercial, Axial Lead



FEATURES

- Ideal for all types of current sensing applications including switching and linear power supplies, instruments and power amplifiers
- Proprietary processing technique produces extremely low resistance values
- Excellent load life stability
- Low temperature coefficient
- Low inductance
- Cooler operation for high power to size ratio
- MIL-PRF-49465 qualified, type RLV resistors can be found at: www.vishay.com/doc?30283
- Compliant to RoHS Directive 2002/95/EC

Pb-free Available

e3

RoHS* COMPLIANT

GREEN (5-2008)** Available

STANDARD ELECTRICAL SPECIFICATIONS

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

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_{RMS}	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
Temperature Coefficient	ppm/°C	See TCR vs. Resistance Value chart			
Maximum Working Voltage	V	$(P \times R)^{1/2}$			
Weight (maximum)	g	0.5	2	5	11

GLOBAL PART NUMBER INFORMATION

Global Part Numbering example: LVR055L000FS73

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

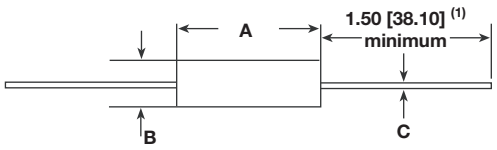
GLOBAL MODEL	VALUE	TOLERANCE	PACKAGING	SPECIAL
LVR01 **LVR03** **LVR05** **LVR10**	**R** = Decimal **L** = mΩ (values < 0.010 Ω) **R1500** = 0.15 Ω **7L000** = 0.007Ω	**D** = ± 0.5 % **F** = ± 1.0 % **G** = ± 2.0 % **H** = ± 3.0 % **J** = ± 5.0 % **K** = ± 10.0 %	**E12** = Lead (Pb)-free bulk **E03** = 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

Historical Part Numbering example: LVR-5 0.005 Ω 1 % S73

LVR-5	0.005 Ω	1 %	S73
HISTORICAL MODEL	RESISTANCE VALUE	TOLERANCE CODE	PACKAGING

* Pb containing terminations are not RoHS compliant, exemptions may apply
** Please see document "Vishay Material Category Policy": www.vishay.com/doc?99902

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)

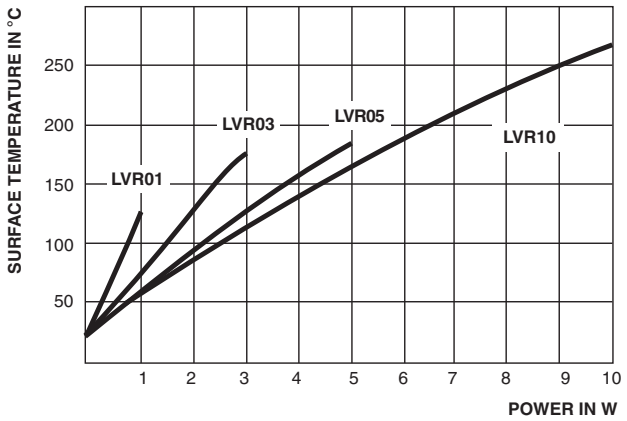
Encapsulation: High temperature mold compound

Terminals: Tinned copper

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

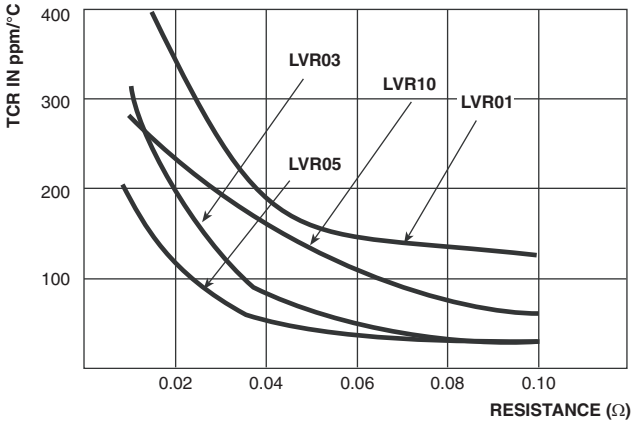
Packaging: Reference "Wirewound Through Hole Resistor Packaging" (www.vishay.com/doc?21028)

SURFACE TEMPERATURE vs. POWER

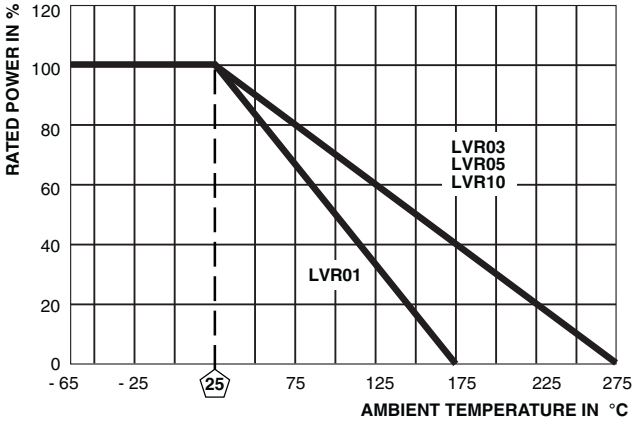


The improved TCR characteristics of these LVR models from - 55 °C to + 125 °C (reference to + 25 °C) are as follows:

TCR vs. RESISTANCE VALUE



DERATING



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	5 x 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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