



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
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912



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 $P_{25\text{ }^\circ\text{C}}$ W	RESISTANCE RANGE ⁽¹⁾ Ω	TOLERANCE \pm %	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	$^\circ\text{C}$	-65 to +175	-65 to +275		
Dielectric Withstanding Voltage	V_{AC}	1000	1000	1000	1000
Insulation Resistance	Ω	10 000 M Ω 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 = m Ω (values < 0.010 Ω) R1500 = 0.15 Ω 7L000 = 0.007 Ω	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

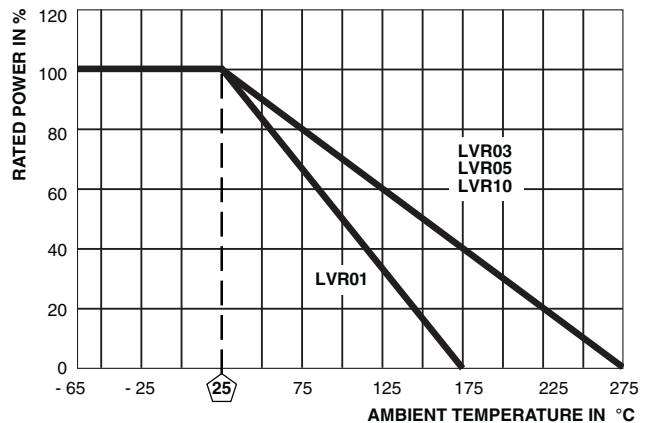
Element: Self-supporting nickel-chrome alloy (LVR10 also utilizes manganin)

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)

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 _{RMS} , 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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Vishay:

LVR05R0250FB12 LVR03R0250FB12 LVR01R0250FB12 LVR055L000FB12 LVR035L000FB12
LVR03R2000FR50 LVR03R2000FB12 LVR03R1000FB12 LVR05R0500FR55 LVR01R0500FR36 LVR03R0500FR50
LVR05R0600FB12 LVR03R0700FB12 LVR03R0300FB12 LVR03R0500FB12 LVR03R0100FB12
LVR03R0800FB12 LVR03R0400FB12 LVR03R0200FB12 LVR03R1500FB12 LVR01R0400FBLK LVR01R0300FB12
LVR01R0400FB12 LVR01R0800FB12 LVR01R0200FB12 LVR01R0100FB12 LVR01R0700FB12
LVR01R0500FB12 LVR03R0300FR50 LVR10R0300JL03 LVR10R0500JL03 LVR05R0300FR55 LVR10R0200FBLK
LVR10R0700FL03 LVR10R0400FF02 LVR03R0800FR50 LVR035L000FS70 LVR03R0200FR50
LVR05R0200FR55 LVR05R2500FB12 LVR05R0750FB12 LVR05R0820FB12 LVR05R1000FB12 LVR05R2000FB12
LVR05R3000FB12 LVR05R1600FB12 LVR01R0100FE70 LVR03R0250FE12 LVR03R0400JE70
LVR03R0500FE12 LVR03R0700FE12 LVR01R0500FS70 LVR10 .01 1% LVR10 .02 1% LVR10 .04 1% LVR10 .05
5% LVR10 .1 1% LVR03R0100FS70 LVR3 .015 1%TR LVR3 .025 1%TR LVR3 .03 1%TR LVR3 .045 1%TR LVR3
.08 1%TR LVR3 .15 1%TR LVR036L700FS7021 LVR3-21 .025 1%TR LVR5 .005 1%TR LVR5 .015 1%TR
LVR05R0620FB12 LVR5 .07 1%TR LVR5 .09 1% LVR05R1000FS73 LVR05R1200FB12 LVR5 .15 1%TR LVR10-
0.2-1% LVR10R1000FBLK LVR03R0150JR50 LVR01R1000FS70 LVR03R0200FS70 LVR03R0250FS70
LVR03R0500FS70 LVR03R0600FB12 LVR03R1000FS70 LVR03R1200FB12 LVR05R0350FB12 LVR10R0300FL03
LVR10R2000FL03 LVR03R1000FE12 LVR05R0400FE12 LVR03R2000FE12 LVR1 .02 3% LVR05R0500FE73
LVR05R2200FE12 LVR01R0100FE12 LVR03R0120FE70 LVR03R0330JE12 LVR055L000FE73 LVR05R0350FE73
LVR056L700JE12 LVR05R0820FE12