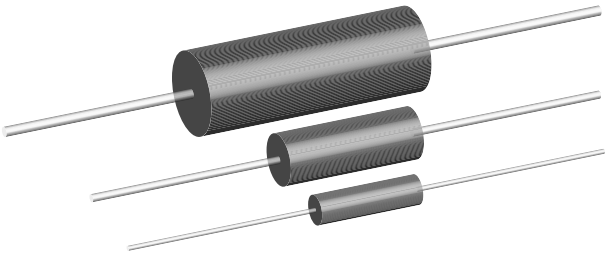
Vishay Dale

Wirewound Resistors, Precision Power, Low Value, Commercial, Military, MIL-PRF-49465 Type RLV, 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

Pb Available

e3

STANDARD ELECTRICAL SPECIFICATIONS

GLOBAL MODEL	HISTORICAL MODEL	MIL-PRF-49465 TYPE	POWER RATING $P_{25\ °C}$ W	RESISTANCE RANGE* Ω ± 1 %, ± 3 %, ± 5 %, ± 10 %	TECHNOLOGY
LVR01	LVR-1	—	1	0.01 - 0.1**	Metal Strip
LVR03	LVR-3	—	3	0.005 - 0.2	Metal Strip
LVR03...26	**LVR-3-26**	**RLV30 (M4946506)**	**3**	**0.01 - 0.2**	**Metal Strip**
LVR05	LVR-5	—	5	0.005 - 0.3	Metal Strip
LVR05...26	**LVR-5-26**	**RLV31 (M4946507)**	**5**	**0.01 - 0.3**	**Metal Strip**
LVR10	LVR-10	—	10	0.01 - 0.8	Coil Spacewound

* 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.
** 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
Rated Power at + 25 °C	W	1	3	5	10
Operating Temperature Range	°C	- 65/+ 175	- 65/+ 275		
Dielectric Withstanding Voltage	V_{AC}	1000	1000	1000	1000
Insulation Resistance	Ω	10000 Megohms minimum dry			
Short Time Overload	-	5 x rated power for 5 seconds			10 x rated power for 5 seconds
Terminal Strength (minimum)	lb	5	10	10	10
Temperature Coefficient	ppm/°C	See TC vs Resistance Value Chart			
Maximum Working Voltage	V	$(P \times R)^{1/2}$			
Weight (maximum)	g	2	2	5	11

GLOBAL PART NUMBER INFORMATION

New Global Part Numbering: LVR055L000FS70 (preferred part numbering format)

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

GLOBAL MODEL	VALUE	TOLERANCE	PACKAGING	SPECIAL
LVR01 **LVR03** **LVR05** **LVR10**	**R** = Decimal **L** = Milliohm (below 0.01 Ω) **R1500** = 0.15 Ω **7L000** = 0.007 Ω	**D** = ± 0.5 % **F** = ± 1.0 % **G** = ± 2.0 % **H** = ± 3.0 % **J** = ± 5.0 % **K** = ± 10 %	**E12** = Lead (Pb)-free bulk **E03** = Lead (Pb)-free lacer pack (LVR10) **E70** = Lead (Pb)-free T/R 1000 pcs (LVR01, 02, 03) or 500 pcs (LVR05) **B12** = Tin/lead bulk **F03** = Tin/lead lacer pack (LVR10) **S70** = Tin/lead T/R 1000 pcs (LVR01, 02, 03) or 500 pcs (LVR05)	(Dash Number) (up to 3 digits) From **1-999** as applicable

Historical Part Number example: LVR-5 0.005 Ω 1 % S70 (will continue to be accepted)

LVR-5	0.005 Ω	1 %	S70
HISTORICAL MODEL	RESISTANCE VALUE	TOLERANCE CODE	PACKAGING

For technical questions, contact ww2aresistors@vishay.com

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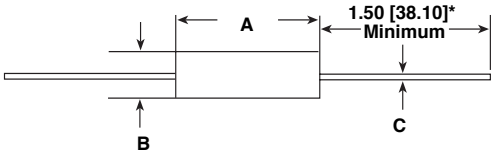
MIL-PRF-49465 Type RLV, Axial Lead

DIMENSIONS



* On some standard reel pack methods, the leads may be trimmed to a shorter length than shown.

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]

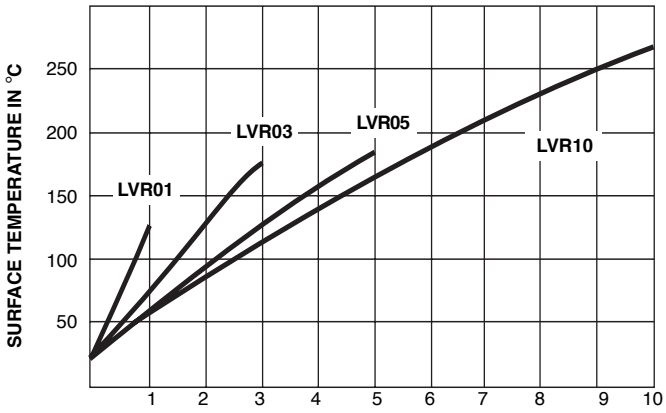
MATERIAL SPECIFICATIONS

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

Encapsulation: High temperature mold compound

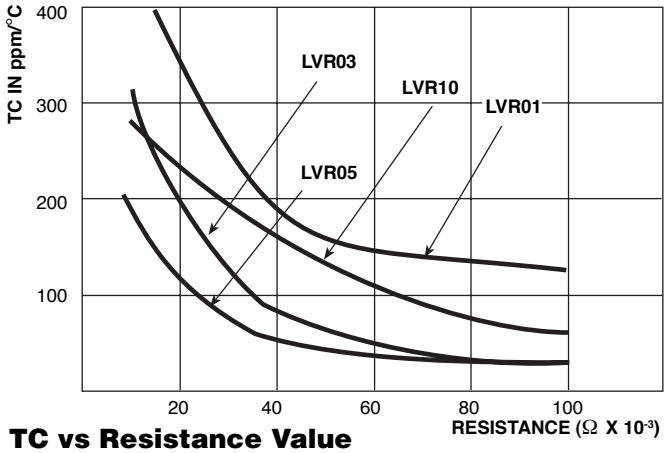
Terminals: Tinned copper

Part Marking: DALE, Model, Wattage, Value, Tolerance, Date Code

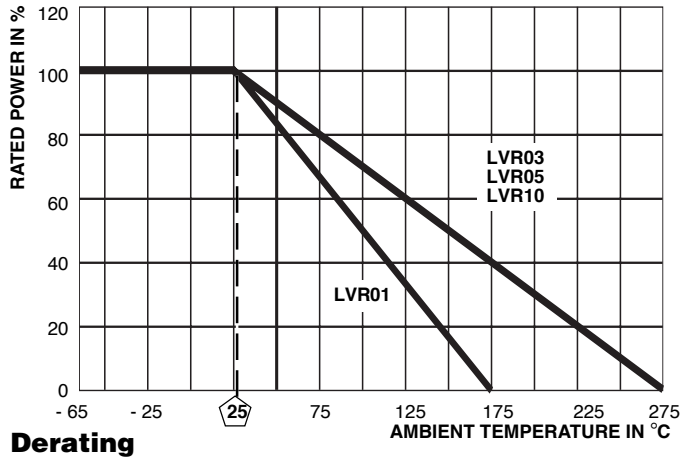


Surface Temperature vs Power

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



TC vs Resistance Value



Derating

PERFORMANCE		
TEST	CONDITIONS OF TEST (MIL-PRF-49465)	TEST LIMITS
Thermal Shock	- 65 °C to + 125 °C, 5 cycles, 15 minutes at each extrem	± (0.2 % + 0.0005 Ω) ΔR
Short Time Overload	5 x rated power (LVR01, 03, 05), 10 x rated power (LVR10) for 5 seconds	± (0.5 % + 0.0005 Ω) ΔR
Low Temperature Storage	- 65 °C for 24 hours	± (0.2 % + 0.0005 Ω) ΔR
High Temperature Exposure	250 hours at + 275 °C (+ 175 °C for LVR01)	± (2.0 % + 0.0005 Ω) ΔR
Dielectric Withstanding Voltage	1000 V rms, one minute	± (0.1 % + 0.0005 Ω) ΔR
Insulation Resistance	MIL-STD-202 Method 302, 100 volts	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 milliseconds, 10 shocks	± (0.1 % + 0.0005 Ω) ΔR
Vibration, High Frequency	Frequency varied 10 to 2000 Hz, 20 g peak, 2 directions 6 hours each	± (0.1 % + 0.0005 Ω) ΔR
Load Life	2000 hours at rated power, + 25 °C, 1.5 hours “ON”, 0.5 hours “OFF”	± (2.0 % + 0.0005 Ω) ΔR
Solderability	ANSI J-STD-002	95 % coverage
Bias Humidity	+ 85 °C, 85 % RH, 10 % bias, 1000 hours	± (1.0 % + 0.0005 Ω) ΔR

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