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



RoHS'

STANDARD ELECTRICAL SPECIFICATIONS									
GLOBAL MODEL	HISTORICAL MODEL	MIL-PRF-49465 TYPE	POWER RATING P _{25 °C} W	RESISTANCE RANGE $\Omega^{(1)}$ ± 1 %, ± 3 %, ± 5 %, ± 10 %	TECHNOLOGY				
LVR01	LVR-1	=	1	0.01 - 0.1 ⁽²⁾	Metal Strip				
LVR03	LVR-3	=	3	0.005 - 0.2	Metal Strip				
LVR0326	LVR-3-26	RLV30 (M4946506)	3	0.01 - 0.2	Metal Strip				
LVR05	LVR-5	-	5	0.005 - 0.3	Metal Strip				
LVR0526	LVR-5-26	RLV31 (M4946507)	5	0.01 - 0.3	Metal Strip				
LVR10	LVR-10	-	10	0.01 - 0.8	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) 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			
Rated Power at + 25 °C	W	1	1 3 5 10					
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					
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	2	2	5	11			

GLOBAL PART NUMBER INFORMATION New Global Part Numbering: LVR055L000FS73 (preferred part number format) **SPECIAL GLOBAL MODEL VALUE TOLERANCE PACKAGING** LVR01 R = Decimal $D = \pm 0.5 \%$ E12 = Lead (Pb)-free bulk (Dash Number) LVR03 $\mathbf{L} = \mathbf{m}\Omega$ $F = \pm 1.0 \%$ E03 = Lead (Pb)-free lacer pack (LVR10) (up to 3 digits) LVR05 E70 = Lead (Pb)-free, tape/reel 1000 pieces (LVR01, 03) From 1 - 999 (values $< 0.010 \Omega$) $G = \pm 2.0 \%$ LVR10 $R1500 = 0.15 \Omega$ $H = \pm 3.0 \%$ E73 = Lead (Pb)-free, tape/reel 500 pieces as applicable **7L000** = 0.007Ω $J = \pm 5.0 \%$ B12 = Tin/lead bulk $K = \pm 10.0 \%$ L03 = Tin/lead lacer pack (LVR10) S70 = Tin/lead, tape/reel 1000 pieces (LVR01, 03) S73 = Tin/lead, tape/reel 500 pieces Historical Part Number Example: LVR-5 0.005 Ω 1 % S73 (will continue to be accepted for tin/lead product only) LVR-5 0.005Ω 1 % **S73** HISTORICAL MODEL RESISTANCE VALUE **TOLERANCE CODE PACKAGING**

^{*} Pb containing terminations are not RoHS compliant, exemptions may apply

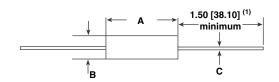




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DIMENSIONS in inches [millimeters]



	DIMENSIONS in inches [millimeters]								
MODEL	Α	В	С						
	± 0.010 [0.254]	± 0.010 [0.254]	± 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)

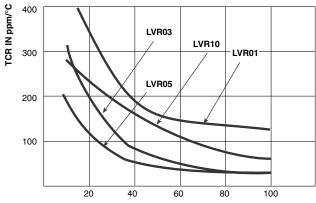
Encapsulation: High temperature mold compound

Terminals: Tinned copper

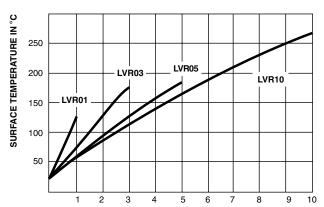
Part Marking: DALE, model, wattage, value, tolerance,

date code

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







S	urf	ac	:е '	Teı	np	era	ıtuı	re v	/s	Pον	ve	r	P	OWE	R IN W
% N	120														
OWER	100														
RATED POWER IN %	80					<u>`</u> 	1					LVR0 LVR0			
Œ	60					 		1				LVR1			
	40					<u> </u>		LVI	R01						
	20					 									
	0 - 6	Ш 5	 - 2	25	<u> </u>	5)	7	5	1	<u> </u> 25	1	75	<u> </u>	 225	275
De	erat	tin	ıg		_	_			A	MBIE	NT T	EMP	ERAT	TURE	IN °C

PERFORMANCE							
TEST	CONDITIONS OF TEST	TEST LIMITS					
Thermal Shock	- 65 °C to + 125 °C, 5 cycles, 15 min at each extrem	$\pm (0.2 \% + 0.0005 \Omega) \Delta R$					
Short Time Overload	5 x rated power (LVR01, 03, 05), 10 x rated power (LVR10) for 5 s	$\pm (0.5 \% + 0.0005 \Omega) \Delta R$					
Low Temperature Storage	- 65 °C for 24 h	\pm (0.2 % + 0.0005 Ω) ΔR					
High Temperature Exposure	250 h at + 275 °C (+ 175 °C for LVR01)	$\pm (2.0 \% + 0.0005 \Omega) \Delta R$					
Dielectric Withstanding Voltage	1000 V _{rms} , 1 min	$\pm (0.1 \% + 0.0005 \Omega) \Delta R$					
Insulation Resistance	MIL-STD-202 Method 302, 100 V	1000 M Ω minimum					
Moisture Resistance	MIL-STD-202 Method 106, 100 7b not applicable	$\pm (0.2 \% + 0.0005 \Omega) \Delta R$					
Shock, Specified Pulse	MIL-STD-202 Method 213, 100 g's for 6 ms, 10 shocks	$\pm (0.1 \% + 0.0005 \Omega) \Delta R$					
Vibration, High Frequency	Frequency varied 10 to 2000 Hz, 20 g peak, 2 directions 6 h each	\pm (0.1 % + 0.0005 Ω) ΔR					
Load Life	2000 h at rated power, + 25 °C, 1.5 h "ON", 0.5 h "OFF"	\pm (2.0 % + 0.0005 Ω) ΔR					
Solderability	ANSI J-STD-002	95 % coverage					
Bias Humidity	+ 85 °C, 85 % RH, 10 % bias, 1000 h	\pm (1.0 % + 0.0005 Ω) Δ R					

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