

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



LINKS TO ADDITIONAL RESOURCES



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


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 ⁽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 0.25 ⁽³⁾	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
- ⁽³⁾ LVR-10: contact factory for resistance values beyond the 0.25 Ω

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	$(P \times R)^{1/2}$			

Note

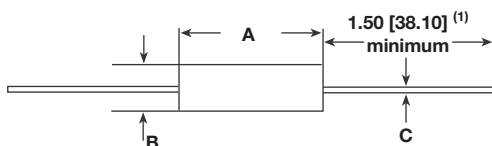
- **LVR01, LVR03, and LVR05 are End of Life on May 22, 2021. LVR10 will still be supported**

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 = 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

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?221028)

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 0.25 Ω

Note

- LVR01, LVR03, and LVR05 are End of Life on May 22, 2021. LVR10 will still be supported**



PERFORMANCE		
TEST	CONDITIONS OF TEST	TEST LIMITS
Thermal Shock	-65 °C to +125 °C, 5 cycles, 15 min at each extreme	$\pm (0.2 \% + 0.0005 \Omega) \Delta R$
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	$\pm (0.2 \% + 0.0005 \Omega) \Delta R$
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, 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 Hz to 2000 Hz, 20 g peak, 2 directions 6 h each	$\pm (0.1 \% + 0.0005 \Omega) \Delta R$
Load Life	2000 h at rated power, +25 °C, 1.5 h "ON", 0.5 h "OFF"	$\pm (2.0 \% + 0.0005 \Omega) \Delta R$
Bias Humidity	+85 °C, 85 % RH, 10 % bias, 1000 h	$\pm (1.0 \% + 0.0005 \Omega) \Delta R$

Note

- **LVR01, LVR03, and LVR05 are End of Life on May 22, 2021. LVR10 will still be supported**



Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay's knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Hyperlinks included in this datasheet may direct users to third-party websites. These links are provided as a convenience and for informational purposes only. Inclusion of these hyperlinks does not constitute an endorsement or an approval by Vishay of any of the products, services or opinions of the corporation, organization or individual associated with the third-party website. Vishay disclaims any and all liability and bears no responsibility for the accuracy, legality or content of the third-party website or for that of subsequent links.

Vishay products are not designed for use in life-saving or life-sustaining applications or any application in which the failure of the Vishay product could result in personal injury or death unless specifically qualified in writing by Vishay. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.