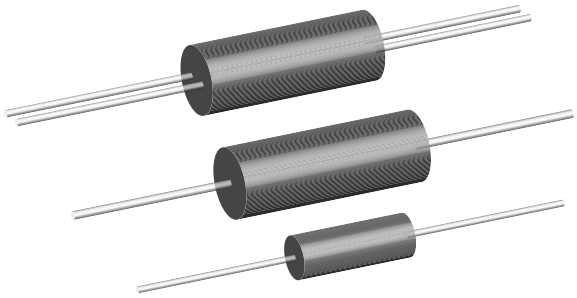
Wirewound Resistors, Precision Power, Low Value, Military, MIL-PRF-49465 Qualified, Type RLV, Axial Lead



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 inductance
- Cooler operation for high power to size ratio

STANDARD ELECTRICAL SPECIFICATIONS

MILITARY MODEL	VISHAY REFERENCE MODEL	POWER RATING $P_{25\,°C}$ W	RESISTANCE RANGE Ω	TOLERANCE ± %	TECHNOLOGY
M4946501 (RLV10)	SPR1005…26	5	0.01 to 0.5	1, 3, 5	Coil spacewound
M4946506 (RLV30)	LVR03...26	3	0.01 to 0.2	1, 3, 5	Metal strip
M4946507 (RLV31)	LVR05...26	5	0.01 to 0.3	1, 3, 5	Metal strip

TECHNICAL SPECIFICATIONS

PARAMETER	UNIT	M4946501 (RLV10)	M4946506 (RLV30)	M4946507 (RLV31)
Operating Temperature Range	°C	-55 to +275		
Dielectric Withstanding Voltage	V_{RMS}	1000		
Insulation Resistance	Ω	1000 MΩ minimum dry		
Short Time Overload	-	5 x rated power for 5 s		
Terminal Strength (minimum)	lb	10		
Temperature Coefficient (0.01 Ω to 0.0249 Ω)	ppm/°C	± 150	± 350	± 250
Temperature Coefficient (0.025 Ω to 0.0499 Ω)	ppm/°C	± 125	± 200	± 150
Temperature Coefficient (0.05 Ω to 0.0749 Ω)	ppm/°C	± 100	± 125	± 100
Temperature Coefficient (0.075 Ω to 0.099 Ω)	ppm/°C	± 50	± 75	± 75
Temperature Coefficient (≥ 0.1 Ω)	ppm/°C	± 50	± 50	± 50
Maximum Working Voltage	V	$(P \times R)^{1/2}$		
Weight (typical)	g	6.35	2	5

GLOBAL PART NUMBER INFORMATION

Military Part Numbering Example: M4946506TR0100FB12

M	4	9	4	6	5	0	6	T	R	0	1	0	0	F	B	1	2

MIL TYPE	SPEC. SHEET NUMBER	CHARACTERISTIC	RESISTANCE VALUE	TOLERANCE CODE	PACKAGING CODE
M49465	**01** (RLV10) **06** (RLV30) **07** (RLV31)	**T**	**R0100** = 0.01 Ω **R1000** = 0.10 Ω	**F** = ± 1.0 % **H** = ± 3.0 % **J** = ± 5.0 %	**B12** = bulk pack (RLV30/RLV31) **S70** = tape / reel (RLV30) **S73** = tape / reel (RLV31) **S51** = skin pack (RLV10)

Note

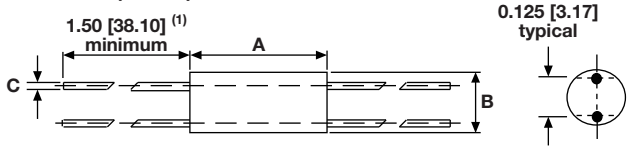
- **M4946506 (RLV30) and M4946507 (RLV31) are End of Life on May 22, 2021. M4946501 (RLV10) will still be supported**

For technical questions, contact: ww2aresistors@vishay.com

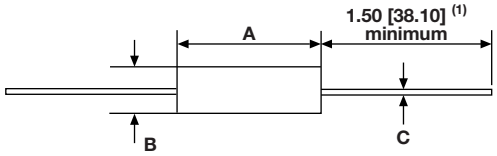
THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE. THE PRODUCTS DESCRIBED HEREIN AND THIS DOCUMENT ARE SUBJECT TO SPECIFIC DISCLAIMERS, SET FORTH AT www.vishay.com/doc?91000

DIMENSIONS in inches [millimeters]

M4946501 (RLV10)



M4946506 (RLV30), M4946507 (RLV31)



MILITARY MODEL	DIMENSIONS in inches [millimeters]		
	A	B	C
M4946501 (RLV10)	0.937 ± 0.062 [23.80 ± 1.57]	0.375 ± 0.031 [9.53 ± 0.787]	0.040 ± 0.005 [1.02 ± 0.130]
M4946506 (RLV30)	0.560 ± 0.031 [14.22 ± 0.787]	0.205 ± 0.031 [5.21 ± 0.787]	0.036 ± 0.005 [0.90 ± 0.130]
M4946507 (RLV31)	0.925 ± 0.031 [23.50 ± 0.787]	0.330 ± 0.031 [8.38 ± 0.787]	0.040 ± 0.005 [1.02 ± 0.130]

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 (M4946501 (RLV10) utilizes manganin for some values)

Encapsulation: high temperature mold compound

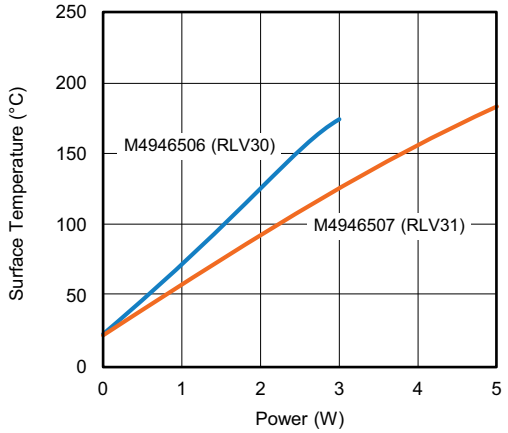
Terminals: tinned copper

Packaging: reference "Wirewound Through Hole Resistor Packaging" document: www.vishay.com/doc?21028

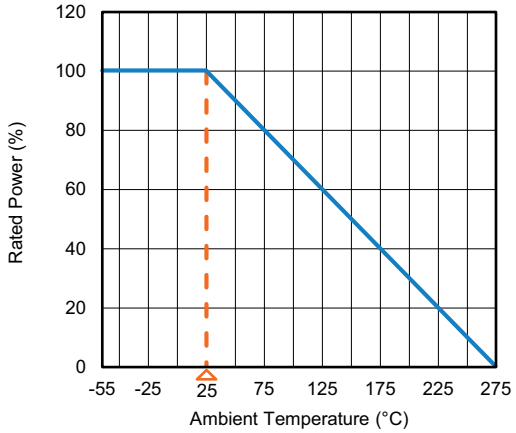
MARKING

EXAMPLE	
91637	Source code
1101	Date code YYMM
M4946507	MIL-PRF-49465 model
TR0100F	Characteristic, resistance type designation, tolerance

SURFACE TEMPERATURE VS. POWER



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 for 5 s	± (0.5 % + 0.0005 Ω) Δ*R*
Low Temperature Storage	-55 °C for 24 h	± (0.2 % + 0.0005 Ω) Δ*R*
High Temperature Exposure	250 h at +275 °C	± (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*
Solderability	ANSI J-STD-002	95 % coverage
Bias Humidity	+85 °C, 85 % RH, 10 % bias, 1000 h	± (1.0 % + 0.0005 Ω) Δ*R*

Note

- **M4946506 (RLV30) and M4946507 (RLV31) are End of Life on May 22, 2021. M4946501 (RLV10) will still be supported**

For technical questions, contact: ww2aresistors@vishay.com

THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE. THE PRODUCTS DESCRIBED HEREIN AND THIS DOCUMENT ARE SUBJECT TO SPECIFIC DISCLAIMERS, SET FORTH AT www.vishay.com/doc?91000

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.

Except as expressly indicated in writing, Vishay products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Vishay product could result in personal injury or death. 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.

© 2023 VISHAY INTERTECHNOLOGY, INC. ALL RIGHTS RESERVED