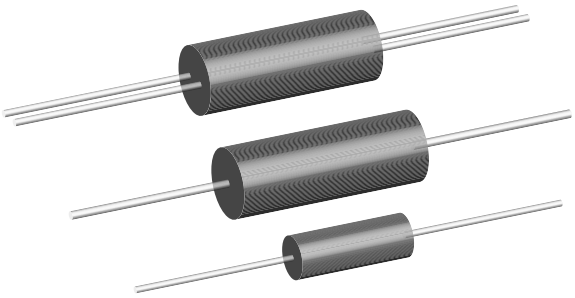
Wirewound Resistors, Precision Power, Low Value, Military, MIL-PRF-49465 Qualified, Type RLV, Axial Lead



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)

For technical questions, contact: ww2aresistors@vishay.com

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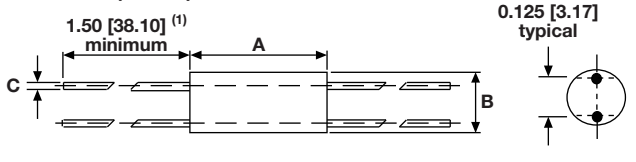
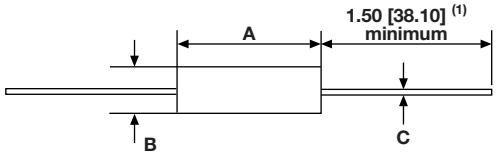
DIMENSIONS in inches [millimeters]

M4946501 (RLV10)



M4946506 (RLV30), M4946507 (RLV31)



MILITARY MODEL	DIMENSIONS in inches [millimeters]		
	A	B	C
M4946501 (RLV01)	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

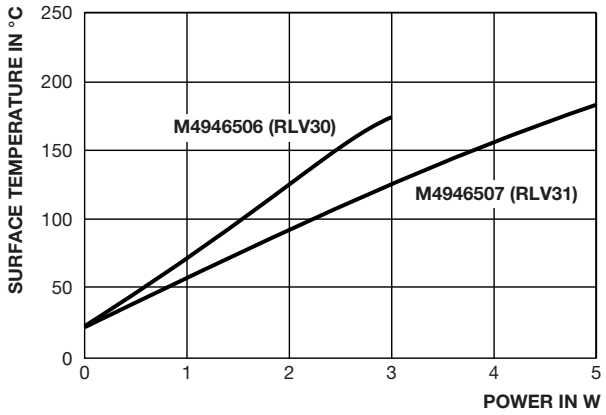
Terminals: Tinned copper

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

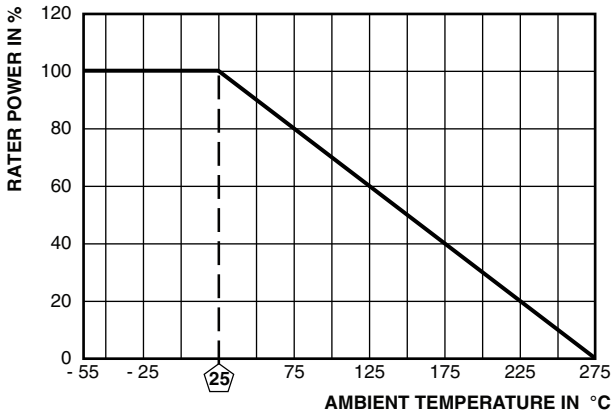
MARKING

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*

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