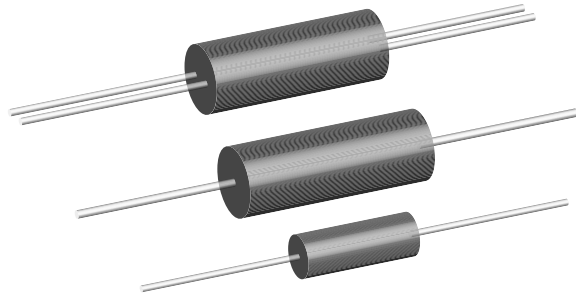




# Wirewound Resistors, Precision Power, Low Value, Military, MIL-PRF-49465 Qualified, Type RLV, Axial Lead



### 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 $P_{25\text{ }^\circ\text{C}}$ W	RESISTANCE RANGE $\Omega$	TOLERANCE $\pm \%$	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	$^\circ\text{C}$	-55 to +275		
Dielectric Withstanding Voltage	$V_{\text{RMS}}$	1000		
Insulation Resistance	$\Omega$	1000 M $\Omega$ minimum dry		
Short Time Overload	-	5 x rated power for 5 s		
Terminal Strength (minimum)	lb	10		
Temperature Coefficient (0.01 $\Omega$ to 0.0249 $\Omega$ )	ppm/ $^\circ\text{C}$	$\pm 150$	$\pm 350$	$\pm 250$
Temperature Coefficient (0.025 $\Omega$ to 0.0499 $\Omega$ )	ppm/ $^\circ\text{C}$	$\pm 125$	$\pm 200$	$\pm 150$
Temperature Coefficient (0.05 $\Omega$ to 0.0749 $\Omega$ )	ppm/ $^\circ\text{C}$	$\pm 100$	$\pm 125$	$\pm 100$
Temperature Coefficient (0.075 $\Omega$ to 0.099 $\Omega$ )	ppm/ $^\circ\text{C}$	$\pm 50$	$\pm 75$	$\pm 75$
Temperature Coefficient ( $\geq 0.1 \Omega$ )	ppm/ $^\circ\text{C}$	$\pm 50$	$\pm 50$	$\pm 50$
Maximum Working Voltage	V	$(P \times R)^{1/2}$		
Weight (typical)	g	6.35	2	5

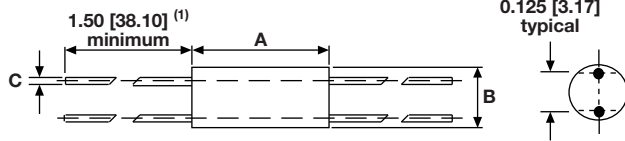
GLOBAL PART NUMBER INFORMATION																	
Military Part Numbering Example: M4946506TR0100FB12																	
M	4	9	4	6	5	0	6	T	R	0	1	0	0	F	B	1	2
MIL TYPE	SPEC. SHEET NUMBER				CHARACTERISTIC			RESISTANCE VALUE			TOLERANCE CODE			PACKAGING CODE			
M49465	01 (RLV10) 06 (RLV30) 07 (RLV31)				T			R0100 = 0.01 $\Omega$ R1000 = 0.10 $\Omega$			F = $\pm 1.0 \%$ H = $\pm 3.0 \%$ J = $\pm 5.0 \%$			B12 = bulk pack (RLV30/RLV31) S70 = tape / reel (RLV30) S73 = tape / reel (RLV31) S51 = skin pack (RLV10)			

### Note

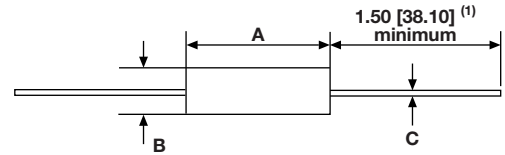
- M4946506 (RLV30) and M4946507 (RLV31) are End of Life on May 22, 2021. M4946501 (RLV10) will still be supported

## 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

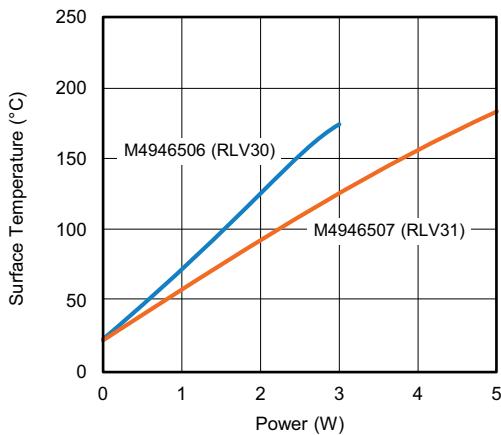
**Packaging:** reference “Wirewound Through Hole Resistor Packaging” document: [www.vishay.com/doc?21028](http://www.vishay.com/doc?21028)

## MARKING

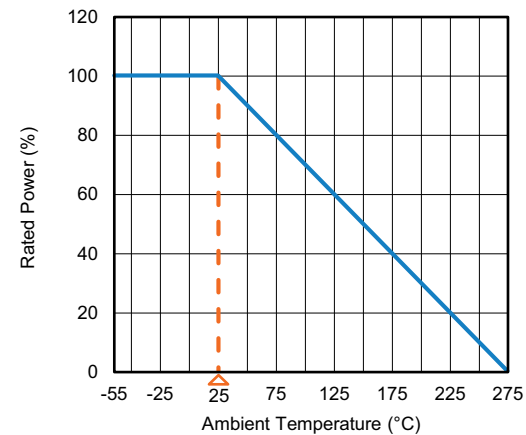
### EXAMPLE

<b>91637</b>	Source code
<b>1101</b>	Date code YYMM
<b>M4946507</b>	MIL-PRF-49465 model
<b>TR0100F</b>	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) ΔR
Short Time Overload	5 x rated power for 5 s	± (0.5 % + 0.0005 Ω) ΔR
Low Temperature Storage	-55 °C for 24 h	± (0.2 % + 0.0005 Ω) ΔR
High Temperature Exposure	250 h at +275 °C	± (2.0 % + 0.0005 Ω) ΔR
Dielectric Withstanding Voltage	1000 V <sub>RMS</sub> , 1 min	± (0.1 % + 0.0005 Ω) ΔR
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) ΔR
Shock, Specified Pulse	MIL-STD-202 method 213, 100 g's for 6 ms, 10 shocks	± (0.1 % + 0.0005 Ω) ΔR
Vibration, High Frequency	Frequency varied 10 Hz to 2000 Hz, 20 g peak, 2 directions 6 h each	± (0.1 % + 0.0005 Ω) ΔR
Load Life	2000 h at rated power, +25 °C, 1.5 h “ON”, 0.5 h “OFF”	± (2.0 % + 0.0005 Ω) ΔR
Solderability	ANSI J-STD-002	95 % coverage
Bias Humidity	+85 °C, 85 % RH, 10 % bias, 1000 h	± (1.0 % + 0.0005 Ω) ΔR

### Note

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



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