# Insulated Precision Wirewound Resistors Axial Leads


In wirewound precision resistors, the RLP series holds a leading position in professional applications whenever an excellent stability of the ohmic value and a correspondingly low temperature coefficient are required at the same time.

The RLP model resistors comply with the most stringent requirements of the EN 140-100 specification. The series consists of 5 models covering the power range from 1 W to 10 W.

Non-inductive versions can be supplied on request by specifying RLP-NI. For higher power dissipations, the use of RH series resistors is recommended.

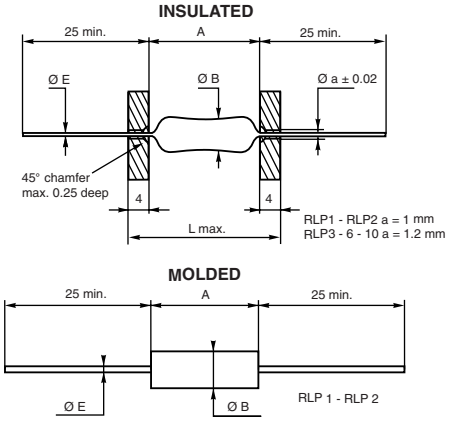
## FEATURES

- 1 W to 10 W at 25 °C
- CECC 40201-006
- Conforms to EN 140-100
- Excellent stability < ± 0.3 % after 1000 h
- High power up to 10 W at 25 °C
- Low ohmic values 10 mΩ available
- Low temperature coefficient ≤ ± 50 ppm/°C
- Electrical insulation
- Climatic protection
- Termination = Pure matte tin or Sn/Ag/Cu according to the ohmic value

Pb-free

**RoHS**
COMPLIANT

## DIMENSIONS in millimeters




| DIMENSIONS in millimeters | | | | | | |
|---|---|---|---|---|---|---|
| | | MOLDED | | INSULATED | | |
| SERIES AND STYLE | | RLP 1 | RLP 2 | RLP 3 | RLP 6 | RLP 10 |
| A max. | | 7 | 10.2 | 14 | 23.82 | 46.78 |
| Ø B max. | R > 0.15 Ω | 2.5 | 4.0 | 5.54 | 8.71 | 10.32 |
| | R ≤ 0.15 Ω | - | 6 | 9 | 11 | 180K |
| E ± 0.1 | | 0.6 | 0.6 | 0.8 | 0.8 | 0.8 |
| Weight in g | | 0.27 | 0.48 | 1.3 | 3.4 | 8.6 |

| TECHNICAL SPECIFICATIONS | | | | | | |
|---|---|---|---|---|---|---|
| VISHAY SFERNICE SERIES AND STYLE | | RLP1 | RLP2 | RLP3 | RLP6 | RLP10 |
| NF C 83-210 | | RP8 | RP7 | RP4 | - | - |
| CECC 40201-006 | | A | B | C | - | - |
| Power Rating at + 25 °C | VISHAY SFERNICE Limits | 1 W | 2 W | 3 W | 6 W | 10 W |
| Ohmic Range in Relation to Tolerance | ± 5 % E24 | 0.05 Ω<br>2 kΩ | 0.025 Ω<br>6.8 kΩ | 0.01 Ω<br>15 kΩ | 0.02 Ω<br>59 kΩ | 0.06 Ω<br>150 kΩ |
| | ± 2 % E48 | 0.05 Ω<br>2 kΩ | 0.025 Ω<br>6.8 kΩ | 0.03 Ω<br>15 kΩ | 0.02 Ω<br>59 kΩ | 0.06 Ω<br>150 kΩ |
| | ± 1 % E96 | 0.05 Ω<br>2 kΩ | 0.025 Ω<br>6.8 kΩ | 0.03 Ω<br>15 kΩ | 0.02 Ω<br>59 kΩ | 0.06 Ω<br>150 kΩ |
| | ± 0.5 % E96 | 0.4 Ω<br>2 kΩ | 0.4 Ω<br>6.8 kΩ | 0.0499 Ω<br>15 kΩ | 0.3 Ω<br>59 kΩ | 0.3 Ω<br>150 kΩ |
| | ± 0.1 % E96 | Please consult VISHAY SFERNICE | | | | |
| Qualified Ohmic Range NF C 83-210 | | 1 Ω<br>470 Ω | 0.2 Ω<br>1.78 kΩ | 0.1 Ω<br>3.57 kΩ | 0.1 Ω<br>12.1 kΩ | 0.1 Ω<br>40.2 kΩ |
| Limiting Element Voltage | | 50 V | 120 V | 200 V | 300 V | 720 V |
| Critical Resistance | | out of nominal ohmic range | | | 17 800 Ω | 51 100 Ω |

Undergoes European Quality Insurance System (CECC)

| PERFORMANCE | | | | |
|---|---|---|---|---|
| TESTS | CONDITIONS | REQUIREMENTS | | TYPICAL VALUES AND DRIFTS |
| | | MIL-R-26 E | CECC40201-06 | |
| Dielectric w/s Voltage | 500 VRMS for RLP 1-2-3<br>1000 VRMS for RLP 6-10 | ± (0.1 % + 0.05 Ω) | - | ± (0.05 % + 0.05 Ω) |
| Short Time Overload | 5 Pn/5 s for Pn < 5 W<br>10 Pn/5 s for Pn ≥ 5 W | ± (0.2 % + 0.05 Ω) | ± 0.25 % + 0.05 Ω | ± (0.1 % + 0.05 Ω) |
| Climatic Sequence | EN 140-201<br>fasc. 19A - 55 °C/+ 200 °C<br>5 cycles | - | ± 0.5 % + 0.05 Ω<br>Insulation R > 100 MΩ | ± (0.2 % + 0.05 Ω)<br>Ins. resistance > $10^3$ MΩ |
| Humidity (Steady State) | EN 140-201<br>fasc. 3A 56 days 95 % R.H. | - | ± 0.5 % + 0.05 Ω<br>Insulation R > 100 MΩ | ± (0.25 % + 0.05 Ω)<br>Ins. resistance > $10^3$ MΩ |
| Vibration | MIL-STD-202<br>Method 204 - Test D: 20 g<br>10/2000 Hz | ± (0.1 % + 0.05 Ω) | ± 0.25 % + 0.05 Ω | ± (0.05 % + 0.05 Ω) |
| Load Life | MIL-STD-202<br>Method 108 Pn 1000 h | ± (0.5 % + 0.05 Ω) | ± 0.5 % + 0.05 Ω<br>Insulation R ≥ 1 GΩ | ± (0.3 % + 0.05 Ω) |
| Moisture Resistance | MIL-STD-202<br>Method 106 | ± (0.2 % + 0.05 Ω)<br>Insulation resistance<br>> 100 MΩ | - | ± (1 % + 0.05 Ω)<br>Ins. resistance > $10^3$ MΩ |
| High Temperature | 250 h at + 275 °C | ± (0.5 % + 0.05 Ω) | ± 0.5 % + 0.05 Ω<br>Insulation R ≥1 GΩ | ± (0.25 % + 0.05 Ω) |
| Shock | MIL-STD-202<br>100 g Method 205 - Test C | ± (0.1% + 0.05 Ω) | ± 0.25 % + 0.05 Ω | ± (0.05 % + 0.05 Ω) |

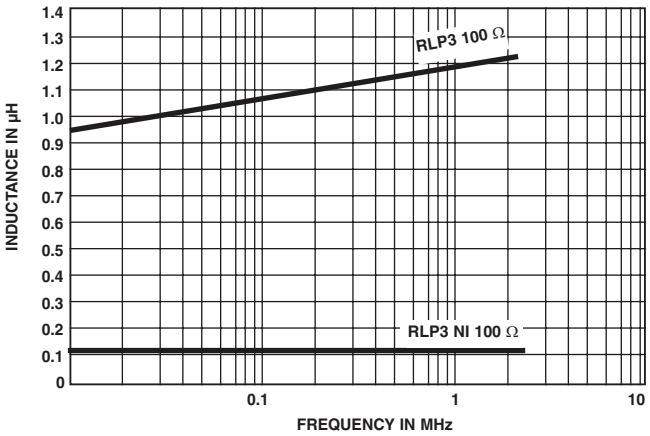
| TEMPERATURE COEFFICIENT IN THE RANGE - 55 °C TO + 200 °C | | | |
|---|---|---|---|
| OHMIC RANGE | LIMITS | | TYPICAL VALUE |
| | NF C | MIL | |
| < 1 Ω | ± 100 ppm/°C | ± 90 ppm/°C | ± 50 ppm/°C |
| 1 Ω to < 10 Ω | ± 50 ppm/°C | ± 50 ppm/°C | |
| ≥ 10 Ω | ± 25 ppm/°C | ± 30 ppm/°C | + 0 to - 20 ppm°C |

## STABILITY AND POWER RATING

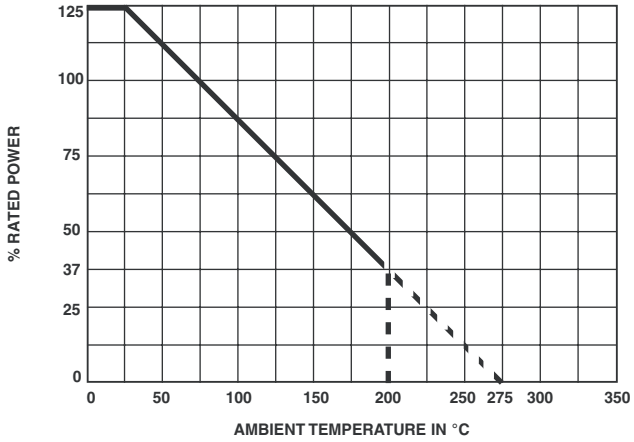
Stability changes slightly according to power rating and ambient temperature. This fact is especially important for users needing a life drift lower than the initial resistance tolerance. Typical drifts, after 2000 hours life test made under the 90'/30' conditions and at an ambient temperature of 25 °C, are:

| OHMIC RANGE | RLP1 | RLP2 | RLP3 | RLP6 | RLP10 | $\frac{\Delta R\ \%}{R\ \%}$ |
|---|---|---|---|---|---|---|
| Pn | 1 W | 2 W | 3 W | 5 W | 10 W | 0.3 |
| 0.5 Pn | 0.5 W | 1 W | 1.5 W | 2.5 W | 5 W | 0.15 |

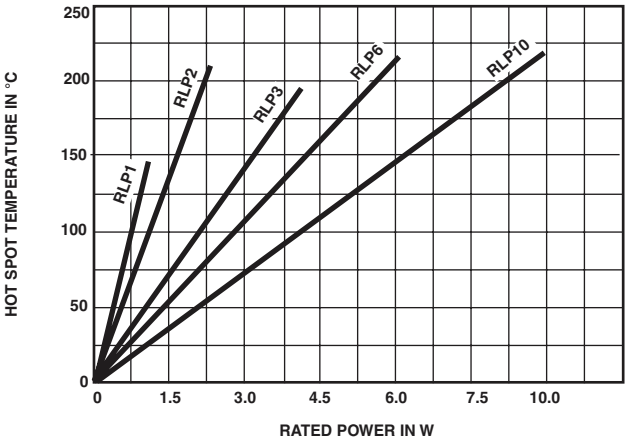
## INDUCTANCE (Example)



## POWER RATING CHART




## TEMPERATURE RISE




## MARKING

SFERNICE trademark, series, style, CECC style (if applicable) nominal resistance (in Ω, kΩ), tolerance (in %), manufacturing date.

## ORDERING INFORMATION

| RLP | 1 | | XXX | 5U5 | ± 5 % | TR100 | e1 (e3: RLP1 < 1R RLP2 < 3R52) |
|---|---|---|---|---|---|---|---|
| MODEL | STYLE | NON INDUCTIVE WINDING | SPECIAL DESIGN | OHMIC VALUE | TOLERANCE | PACKAGING | LEAD (Pb)-FREE |
| | | Optional **(NI)** | Method N° Optional | Custom items are subject to extra-charge and min. order. Please see price list. | | Optional | |

## SAP PART NUMBERING GUIDELINES

| RLP | 01 | 5R500 | J | R15 |
|---|---|---|---|---|
| MODEL | STYLE | OHMIC VALUE | TOLERANCE | PACKAGING |

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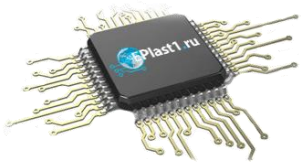


**Как с нами связаться**

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