

Molded Metal Film High Ohmic Value (to 50 MΩ) Resistors



FEATURES

- 0.125 W to 0.5 W at 70 °C
- According to CECC 40 101043
- Resistance range: 300 kΩ to 50 MΩ
- Good initial precision: Up to ± 1 %
- High long term stability drift < 1 % after 1000 h
- Accurate dimensions
- Good insulation typical values: 10 MΩ
- Limiting element voltages: 500 V, 800 V and 1200 V
- Termination = Pure matte tin
- Compliant to RoHS directive 2002/95/EC



RoHS
COMPLIANT

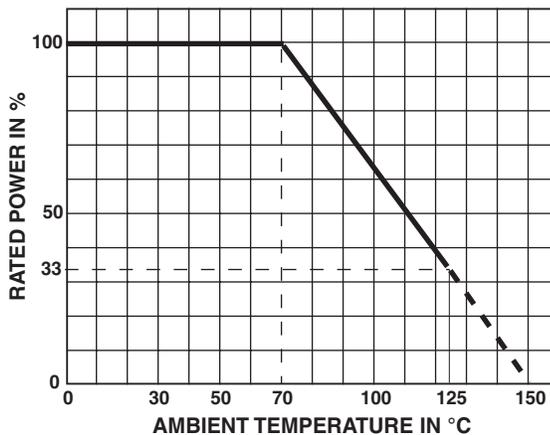
| DIMENSIONS in millimeters | | | | | |
|---------------------------|--------|------------|-----------------------------------|-----|------------------|
| | SERIES | DIMENSIONS | | | UNIT WEIGHT IN g |
| | | A | Ø B | Ø C | |
| | RCMX02 | 6.5 ± 0.2 | 2.5 ⁺⁰ _{-0.2} | 0.6 | 0.26 |
| | RCMX05 | 10.2 ± 0.2 | 3.65 ± 0.1 | 0.6 | 0.46 |
| | RCMX1 | 16 ± 0.5 | 6.2 ± 0.2 | 0.8 | 1.30 |

| TECHNICAL SPECIFICATIONS | | | |
|---|---|---------------|---------------|
| VISHAY SFERNICE SERIES | RCMX02 | RCMX05 | RCMX1 |
| Reference according to NFC 83 230 | RS80 | RS81 | RS82 |
| Power Rating at 70 °C | 0.125 W | 0.250 W | 0.500 W |
| Resistance Value Range | 300 kΩ to 10 MΩ | 1 MΩ to 20 MΩ | 2 MΩ to 50 MΩ |
| Tolerance and Associated Series | ± 1 % E96 | ± 1 % E96 | ± 5 % E24 |
| Maximum Voltage | 500 V | 750 V | 1000 V |
| Critical Resistance | 2 MΩ | 2.55 MΩ | 2.87 MΩ |
| Temperature Coefficient Rated in the Range - 55 °C to + 125 °C | K3 ≤ ± 50 ppm/°C | | |
| Insulation Resistance (Typical) | ≥ 10 ⁷ MΩ (500 V _{DC}) | | |
| Voltage Coefficient | ≤ 10 ppm/V | | |
| Environmental Specifications | - 65 °C/+ 155 °C/10 days | | |

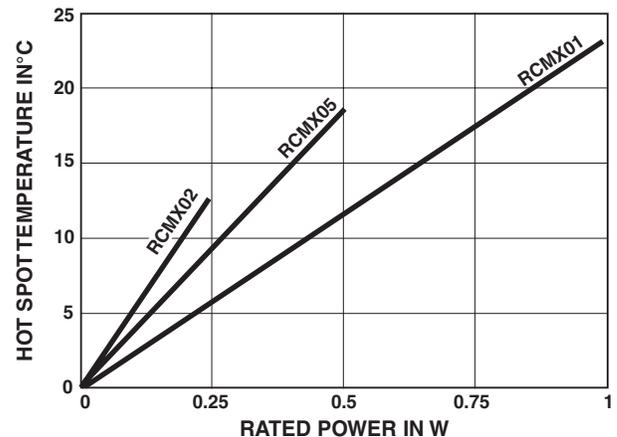


| PERFORMANCE | | | |
|--|---|---|--|
| ACCORDING TO CECC 40 101043 | | | TYPICAL VALUES AND DRIFTS |
| TESTS | CONDITIONS | REQUIREMENTS | |
| Load Life at Max. Category Temperature | 1000 h at 125 °C 33 % of P_n | $\leq \pm 1 \%$ Insulation resistance > 1 GΩ | $\pm 2 \%$ at 1000 h Insulation resistance $10^6 \text{ M}\Omega$ |
| Short Time Overload | $2.5 U_m/5 \text{ s}$ limited to $2 U_n$ | $\leq \pm 0.25 \%$ | $\pm 0.5 \%$ |
| Damp Heat Humidity (Steady State) | 10 days with low load | $\leq \pm 1 \%$ Insulation resistance > $10^2 \text{ M}\Omega$ | $\pm 1.5 \%$ |
| Rapid Temperature Change | - 55 °C + 125 °C | $\leq \pm 0.25 \%$ | $\pm 0.25 \%$ |
| Climatic Sequence | - 55 °C + 125 °C severity 1 | $\leq \pm 1 \%$ Insulation resistance > 100 MΩ | $\pm 1 \%$ Insulation resistance $10^6 \text{ M}\Omega$ |
| Terminal Strength | Pull - twist - 2 bends | $\leq \pm 0.25 \%$ | $\pm 0.05 \%$ |
| Vibration | 10 to 500 Hz | $\leq \pm 0.25 \%$ | $\pm 0.05 \%$ |
| Soldering (Thermal Shock) | + 260 °C 10 s | $\leq \pm 0.25 \%$ | $\pm 0.1 \%$ |
| Load Life | Cycle 90'/30' 1000 h at P_n at 70 °C | $\leq \pm 1 \%$ Insulation resistance > 1 GΩ | $\pm 0.5 \%$ Insulation resistance $10^6 \text{ M}\Omega$ |
| Shelf Life | 1 year ambient temperature | - | $\pm 0.25 \%$ |

POWER RATING



TEMPERATURE RISE



PRACTICAL OPERATING TOLERANCES

After 1000 h load life at rated power 90'/30' cycles + 70 °C ambient temperature, the typical total drifts, measured at + 70 °C, are as follows:

Typical total drift = drift due to TCR (K3) + life drift 0.5 %.

Maximum deviation from rated ohmic value including $\pm 1 \%$ manufacturing tolerance $\leq 1.5 \%$.

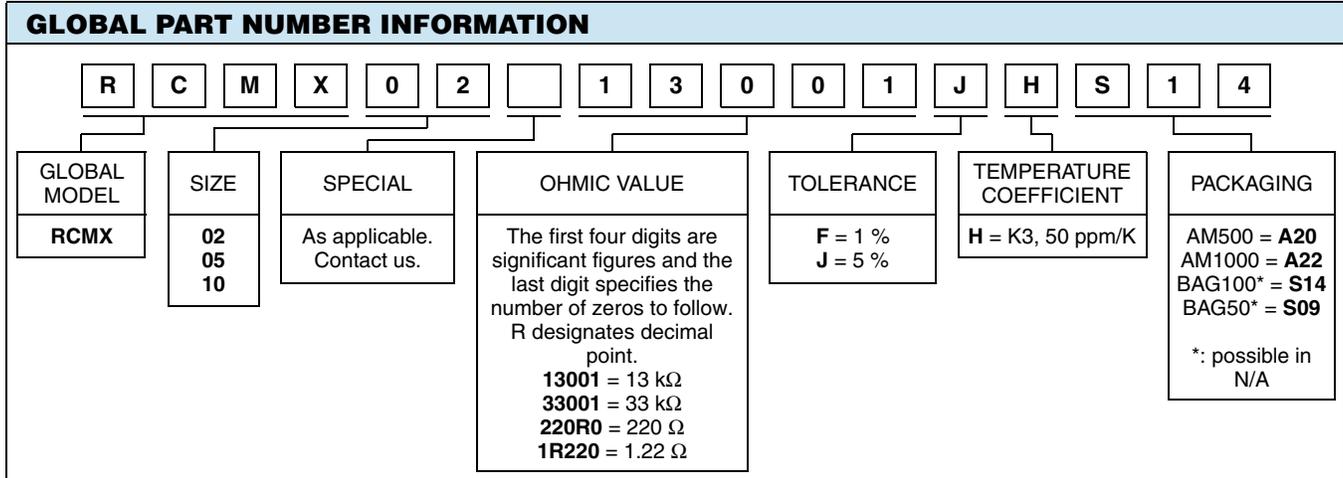
RCMX02, RCMX05, RCMX1



Vishay Sfernice Molded Metal Film High Ohmic Value (to 50 MΩ) Resistors

MARKING

Printed: Vishay Sfernice trademark, series, style, ohmic value (in Ω), tolerance (in %), temperature coefficient, manufacturing date. Due to lack of space RCMX02 is printed MX02.





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.

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 and agree to fully indemnify and hold Vishay and its distributors harmless from and against any and all claims, liabilities, expenses and damages arising or resulting in connection with such use or sale, including attorneys fees, even if such claim alleges that Vishay or its distributor was negligent regarding the design or manufacture of the part. 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.