

## 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, 750 V, and 1000 V
- Termination = pure matte tin
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)


**RoHS**  
COMPLIANT

DIMENSIONS in millimeters					
	SERIES	A	Ø B	Ø C	WEIGHT g
	RCMX02	6.5 ± 0.2	2.5 <sup>-0</sup> <sub>-0.2</sub>	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	1.3

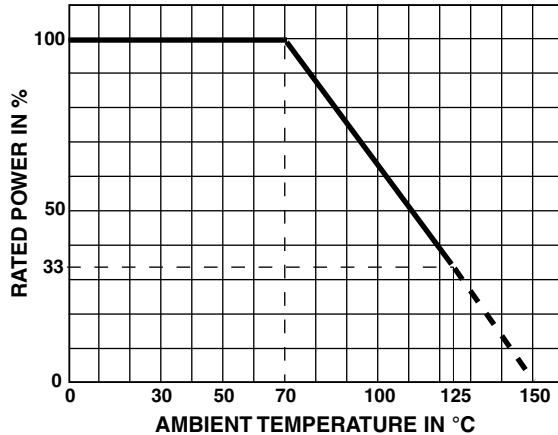
STANDARD ELECTRICAL SPECIFICATIONS					
MODEL	RESISTANCE RANGE Ω	RATED POWER P <sub>70 °C</sub> W	LIMITING ELEMENT VOLTAGE V	TOLERANCE ± %	TEMPERATURE COEFFICIENT ± ppm/°C
RCMX02	300K to 10M	0.125	500	1.5	50
RCMX05	1M to 20M	0.250	750	1.5	50
RCMX1	2M to 50M	0.500	1000	1.5	50

TECHNICAL SPECIFICATIONS			
VISHAY SFERNICE SERIES	RCMX02	RCMX05	RCMX1
Reference according to NFC 83 230	RS80	RS81	RS82
Tolerance and Associated Series	± 1 % E96 and ± 5 % E24		
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 <sup>7</sup> MΩ (500 V <sub>DC</sub> )		
Voltage Coefficient	≤ 10 ppm/V		
Environmental Specifications	-65 °C / +155 °C / 10 days		

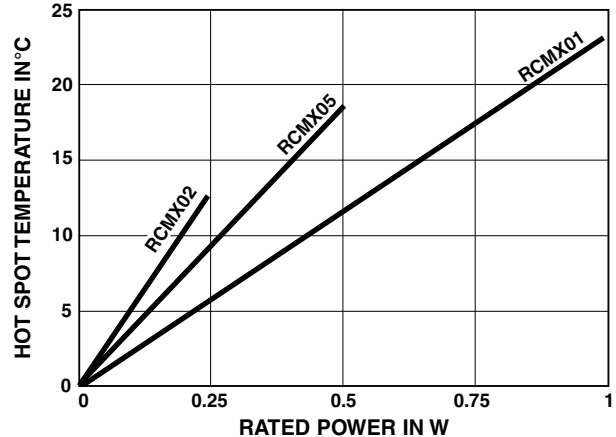


PERFORMANCE			
ACCORDING TO CECC 40 101043			TYPICAL VALUES AND DRIFTS
TESTS	CONDITIONS	REQUIREMENTS	
Load Life at Max. Category Temperature	1000 h at 125 °C 33 % of $P_n$	$\leq \pm 1 \%$ Insulation resistance $> 1 \text{ G}\Omega$	$\pm 2 \%$ at 1000 h Insulation resistance $10^6 \text{ M}\Omega$
Short Time Overload	2.5 $U_n$ / 5 s Limited to 2 $U_m$	$\leq \pm 0.25 \%$	$\pm 0.5 \%$
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 $> 100 \text{ M}\Omega$	$\pm 1 \%$ Insulation resistance $10^6 \text{ M}\Omega$
Terminal Strength	Pull - twist - 2 bends	$\leq \pm 0.25 \%$	$\pm 0.05 \%$
Vibration	10 Hz 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 $> 1 \text{ G}\Omega$	$\pm 0.5 \%$ Insulation resistance $10^6 \text{ M}\Omega$
Shelf Life	1 year ambient temperature	-	$\pm 0.25 \%$

**POWER RATING**



**TEMPERATURE RISE**



**PRACTICAL OPERATING TOLERANCES**

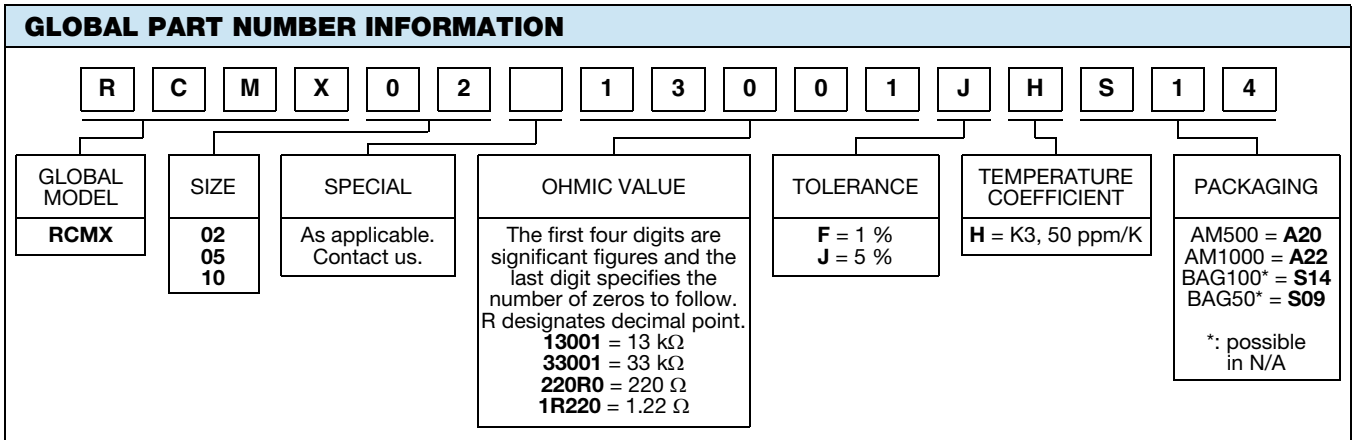
After 1000 h load life at rated power 90'/30' cycles +70 °C ambient temperature, the typical total drifts, measured at +70 °C, are as follows:

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

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

**MARKING**

Printed: Vishay Sfernice trademark, series, style, ohmic value (in  $\Omega$ ), 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.

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.