

## Molded Metal Film Resistors



### FEATURES

- 0.25 W to 1 W at 70 °C
- According to NF C 83-230 (RC21U-31U-41U-32)
- According to CECC 40 100
- High insulation > 10<sup>7</sup> MΩ
- Great mechanical strength
- 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 max.	Ø B max.	Ø C	WEIGHT in g
	RCMM02	6.5 ± 0.2	2.5 <sup>-0</sup> <sub>-0.2</sub>	0.6	0.26
	RCMM05	10.2 ± 0.2	3.65 ± 0.1	0.6	0.46
	RCMM1	16 ± 0.5	6.2 ± 0.2	0.8	1.30

STANDARD ELECTRICAL SPECIFICATIONS					
MODEL	RESISTANCE RANGE Ω	RATED POWER P <sub>70 °C</sub> W	LIMITING ELEMENT VOLTAGE V	TOLERANCE ± %	TEMPERATURE COEFFICIENT ± ppm/°C
RCMM02	1 to 332K	0.25	300	2, 5	50, 100
	1 to 332K	0.50	350	2, 5	50, 100
RCMM05	1 to 1M	0.50	350	2, 5	50, 100
RCMM1	1 to 2.26M	1.0	500	2, 5	50, 100

TECHNICAL SPECIFICATIONS					
VISHAY SFERNICE SERIES		RCMM02		RCMM05	RCMM1
CECC 83-230 (for information)		RC21U	RC32	RC31U	RC41U
CECC 40 100-802 (for information)		BV	-	CV	-
Power rating at 70 °C		0.25 W	0.50 W	0.50 W	1 W
Resistance value range in relation to tolerance	± 5 %	1 Ω to 330 kΩ E24	1 Ω to 330 kΩ E24	1 Ω to 1 MΩ E24	1 Ω to 2.2 MΩ E24
	± 2 %	1 Ω to 332 kΩ E48	1 Ω to 332 kΩ E48	1 Ω to 1 MΩ E48	1 Ω to 2.26 MΩ E48
Maximum voltage		300 V	350 V	350 V	500 V
Critical resistance		-	245 kΩ	245 kΩ	250 kΩ
Temperature coefficient	Rated in the range -55 °C +155 °C	K2 ≤ ± 100 ppm/°C			
	Typical in the range -10 °C +70 °C	≤ ± 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 / 56 days			

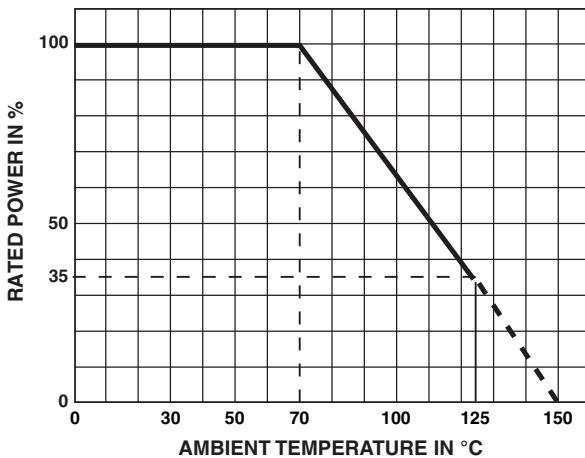


PERFORMANCE			
TESTS	CONDITIONS	REQUIREMENTS	TYPICAL VALUES AND DRIFTS
Load life at max. category temperature	1000 h at 125 °C 35 % of $P_n$	$\leq \pm (2 \% + 0.1 \Omega)$ Insulation resist. > 1 G $\Omega$	$\pm 0.75 \%$ or 0.05 $\Omega$ Insulation resist. $10^6 M\Omega$
Short time overload	2.5 $U_n$ / 5 s Limited to 2 $U_m$	$\leq \pm (0.5 \% + 0.05 \Omega)$	$\pm 0.2 \%$ or 0.05 $\Omega$
Damp heat humidity (steady state)	56 days with low load	$\leq \pm (2 \% + 0.1 \Omega)$ Insulation resist. > 100 M $\Omega$	$\pm 0.5 \%$ or 0.05 $\Omega$ Insulation resist. $10^6 M\Omega$
Rapid temperature change	-55 °C +125 °C	$\leq \pm (0.5 \% + 0.05 \Omega)$	$\pm 0.1 \%$ or 0.05 $\Omega$
Climatic sequence	-55 °C +125 °C	$\leq \pm (2 \% + 0.1 \Omega)$ Insulation resist. > 100 M $\Omega$	$\pm 0.1 \%$ or 0.05 $\Omega$ Insulation resist. $10^6 M\Omega$
Terminal strength	Pull - twist - 2 bends	$\leq \pm (0.5 \% + 0.05 \Omega)$	$\pm 0.05 \%$ or 0.05 $\Omega$
Vibration	10 Hz to 500 Hz	$\leq \pm (0.5 \% + 0.05 \Omega)$	$\pm 0.05 \%$ or 0.05 $\Omega$
Soldering (thermal shock)	+260 °C, 10 s	$\leq \pm (0.5 \% + 0.05 \Omega)$	$\pm 0.1 \%$ or 0.05 $\Omega$
Load life	Cycle 90°/30° 1000 h at $P_n$ at 70 °C	$\leq \pm (2 \% + 0.1 \Omega)$ Insulation resist. > 1 G $\Omega$	$\pm 0.5 \%$ or 0.05 $\Omega$ Insulation resist. $10^6 M\Omega$
Shelf life	1 year ambient temperature	-	$\pm 0.1 \%$ or 0.05 $\Omega$

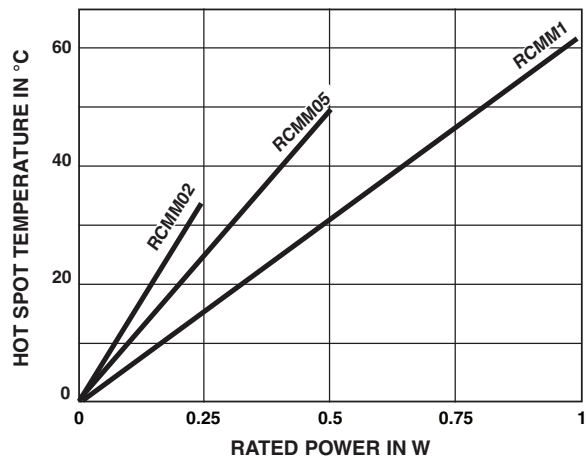
Note

- RC41: 15 s

POWER RATING



TEMPERATURE RISE



MARKING

Printed: Vishay Sfernice trademark, series, ohmic value (in  $\Omega$ ), tolerance (in %), temperature coefficient, manufacturing date. Due to lack of space RCMM02 is printed MM02.

GLOBAL PART NUMBER INFORMATION															
R	C	M	M	0	2		1	3	0	1	J	K	S	1	4
GLOBAL MODEL	SIZE	SPECIAL	OHMIC VALUE				TOLERANCE	TEMPERATURE COEFFICIENT		PACKAGING					
RCMM	02 05 10	As applicable. Contact us.	The first three digits are significant figures and the last digit specifies the number of zeros to follow. R designates decimal point. 1301 = 1.3 k $\Omega$ 3301 = 3.3 k $\Omega$ 22R0 = 22.0 $\Omega$ 1R22 = 1.22 $\Omega$				G = 2 % J = 5 %	K = K2, 100 ppm/K		AM500 = A20 AM1000 = A22 BAG100 = S14 BAG50 = S09					



## 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.

Vishay products are not designed for use in life-saving or life-sustaining applications or any application in which the failure of the Vishay product could result in personal injury or death unless specifically qualified in writing by Vishay. 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.