

## Molded Metal Film High Stability Resistors



### FEATURES

- 0.125 W to 0.5 W at 70 °C
- Approval according to CECC 40 101 (002/803)
- High long term stability drift < 0.5 % after 1000 h
- Excellent temperature coefficient  $\leq \pm 30$  ppm/°C in the range - 10 °C to 70 °C
- Excellent initial precision: Up to  $\pm 1$  %
- High insulation typical values:  $10^6$  M $\Omega$
- 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							
			<b>SERIES</b>	<b>A</b>	<b>Ø B</b>	<b>Ø C</b>	<b>WEIGHT in g</b>
			RCMS02	6.5 ± 0.2	2.5 <sup>-0</sup> / <sub>-0.2</sub>	0.6	0.26
			RCMS05	10.2 ± 0.2	3.65 ± 0.1	0.6	0.46
			RCMS1	16 ± 0.5	6.2 ± 0.2	0.8	1.30

STANDARD ELECTRICAL SPECIFICATIONS					
MODEL	RESISTANCE RANGE $\Omega$	RATED POWER $P_{70\text{ °C}}$ W	LIMITING ELEMENT VOLTAGE V	TOLERANCE $\pm$ %	TEMPERATURE COEFFICIENT $\pm$ ppm/°C
RCMS02	1 to 332K	0.125	300	1	30, 50
	1 to 332K	0.250	300,	1	30, 50
	1 to 332K	0.500	350	1	30, 50
RCMS05	1 to 1M	0.250	350	1	30, 50
	1 to 1M	0.500	350	1	30, 50
RCMS1	1 to 2.21M	0.500	400	1	30, 50

### Note

- Undergoes European Quality Insurance System (CECC)

TECHNICAL SPECIFICATIONS							
VISHAY SFERNICE SERIES		RCMS02			RCMS05		RCMS1
Reference under CECC 40 101-002 approvals		RS58Y	RS64Y	RS71Y	RS63Y	RS69Y	RS68Y
Reference under CECC 40 101-803 approvals		BC	-	-	CC	-	DC
MIL-R-105509 F equivalent reference		RN55C	-	-	RN60C	-	RN65C
Power Rating at 70 °C		0.125 W	0.250 W	0.500 W	0.250 W	0.500 W	0.500 W
Resistance Value Range in Relation to Tolerance $\pm 1$ % E96		1 $\Omega$ to 332 k $\Omega$	1 $\Omega$ to 332 k $\Omega$	1 $\Omega$ to 332 k $\Omega$	1 $\Omega$ to 1 M $\Omega$	1 $\Omega$ to 1 M $\Omega$	1 $\Omega$ to 2.21 M $\Omega$
Maximum Voltage		300 V	300 V	350 V	350 V	350 V	400 V
Critical Resistance		-	-	-	490 k $\Omega$	245 k $\Omega$	320 k $\Omega$
Temperature Coefficient		Rated in the range - 55 °C + 155 °C $K3 \leq \pm 50$ ppm/°C Typical in the range - 10 °C + 70 °C $K3 \leq \pm 30$ ppm/°C					
Insulation Resistance (Typical)		$\geq 10^7$ M $\Omega$ (500 V <sub>DC</sub> )					
Voltage Coefficient		10 ppm/V					
Environmental Specification		- 65 °C/+ 155 °C/56 days					

### Note

- Undergoes European Quality Insurance System (CECC)

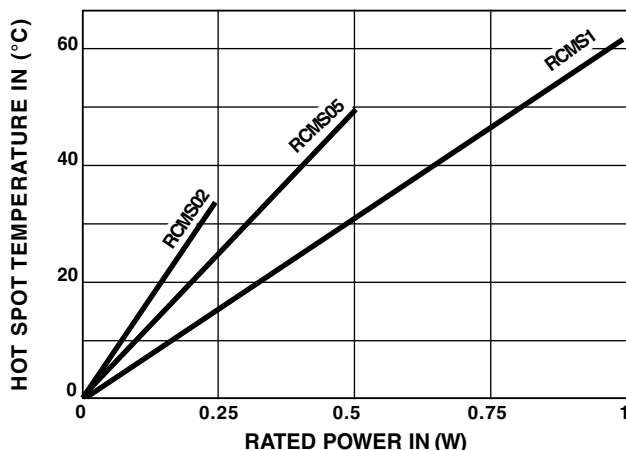


PERFORMANCE			
CECC 40 100	EN 140-100		TYPICAL VALUES AND DRIFTS
TESTS	CONDITIONS	REQUIREMENTS	
Load Life at Max. Category Temperature	1000 h at 125 °C 50 % of $P_n$	$\leq \pm (1 \% + 0.05 \Omega)$ Insulation resist. > 1 G $\Omega$	$\pm 0.5 \%$ or 0.05 $\Omega$ Insulation resist. 10 <sup>6</sup> M $\Omega$
Short Time Overload	$2.5 U_n/5$ s limited to $2 U_n$	$\leq \pm (0.25 \% + 0.05 \Omega)$	$\pm 0.1 \%$ or 0.05 $\Omega$
Damp Heat Humidity (Steady State)	56 days with low load	$\leq \pm (1 \% + 0.05 \Omega)$ Insulation resist. > 1 G $\Omega$	$\pm 0.5 \%$ or 0.05 $\Omega$ Insulation resist. 10 <sup>6</sup> M $\Omega$
Rapid Temperature Change	- 55 °C + 125 °C	$\leq \pm (0.25 \% + 0.05 \Omega)$	$\pm 0.1 \%$ or 0.05 $\Omega$
Climatic Sequence	- 55 °C + 125 °C severity 1	$\leq \pm (0.5 \% + 0.05 \Omega)$ Insulation resist. > 1 G $\Omega$	$\pm 0.1 \%$ or 0.05 $\Omega$ Insulation resist. 10 <sup>6</sup> M $\Omega$
Terminal Strength	Pull - twist - 2 bends	$\leq \pm (1 \% + 0.05 \Omega)$	$\pm 0.05 \%$ or 0.05 $\Omega$
Vibration	10 Hz to 500 Hz	$\leq \pm (0.25 \% + 0.05 \Omega)$	$\pm 0.05 \%$ or 0.05 $\Omega$
Soldering (Thermal Shock)	+ 260 °C 10 s	$\leq \pm (0.25 \% + 0.05 \Omega)$	$\pm 0.1 \%$ or 0.05 $\Omega$
Load Life	Cycle 90'/30' 1000 h at $P_n$ at 70 °C	$\leq \pm (1 \% + 0.05 W)$ Insulation resist. > 1 G $\Omega$	$\pm 0.2 \%$ or 0.05 $\Omega$ Insulation resist. 10 <sup>6</sup> M $\Omega$
Shelf Life	1 year ambient temperature	-	$\pm 0.1 \%$ or 0.05 $\Omega$

**POWER RATING**



**TEMPERATURE RISE**



**PRACTICAL OPERATING TOLERANCES**

Tables 2 and 3 show the basic characteristics and max. values under different stresses. In fact, the values and drifts are maintained to within narrower limits.

Temperature coefficient between - 10 °C and + 70 °C	K3 $\leq 30$ ppm/°C	
LONG LIFE 90'/30' cycles ambient temperature 70 °C	1000 h at $P_r$	$\pm 0.25 \%$
	10 000 h at $P_r$	$\pm 0.5 \%$

Thus, in operation under the specified conditions ( $P_r$  at 70 °C) the total drift (load life + TCR) of a RCMS K3 does not exceed  $\pm 0.5 \%$ .

**NOISE LEVEL**

In a frequency decade, the average noise level increases with the ohmic value and can reach 0.3  $\mu$ V/V for the highest values. It is non measurable for  $R_n < 2$  k $\Omega$ .

**MARKING**

Printed: Vishay Sfernice trademark, series, style NF style (if applicable), ohmic value (in  $\Omega$ ), tolerance (in %), temperature coefficient, manufacturing data. Due to lack of space RCMS 02 is printed MS 02.





## 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. 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.

## Material Category Policy

**Vishay Intertechnology, Inc. hereby certifies that all its products that are identified as RoHS-Compliant fulfill the definitions and restrictions defined under Directive 2011/65/EU of The European Parliament and of the Council of June 8, 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (EEE) - recast, unless otherwise specified as non-compliant.**

**Please note that some Vishay documentation may still make reference to RoHS Directive 2002/95/EC. We confirm that all the products identified as being compliant to Directive 2002/95/EC conform to Directive 2011/65/EU.**

**Vishay Intertechnology, Inc. hereby certifies that all its products that are identified as Halogen-Free follow Halogen-Free requirements as per JEDEC JS709A standards. Please note that some Vishay documentation may still make reference to the IEC 61249-2-21 definition. We confirm that all the products identified as being compliant to IEC 61249-2-21 conform to JEDEC JS709A standards.**



Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



#### Как с нами связаться

**Телефон:** 8 (812) 309 58 32 (многоканальный)

**Факс:** 8 (812) 320-02-42

**Электронная почта:** [org@eplast1.ru](mailto:org@eplast1.ru)

**Адрес:** 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.