

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 $\leq \pm 30 \text{ ppm}/\text{°C}$ in the range -10 °C to +70 °C
- Excellent initial precision: Up to $\pm 1 \%$
- High insulation typical values: $10^6 \text{ M}\Omega$
- Termination = pure matte tin
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912



DIMENSIONS in millimeters

	25 min.	A	25 min.	Ø B	Ø C	SERIES	A	Ø B	Ø C	WEIGHT in g
						RCMS02	6.5 \pm 0.2	2.5 $^0_{-0.2}$	0.6	0.26
RCMS05				10.2 \pm 0.2	3.65 \pm 0.1	10.2 \pm 0.2	10.2 \pm 0.2	3.65 \pm 0.1	0.6	0.46
RCMS1				16 \pm 0.5	6.2 \pm 0.2	16 \pm 0.5	16 \pm 0.5	6.2 \pm 0.2	0.8	1.30

STANDARD ELECTRICAL SPECIFICATIONS

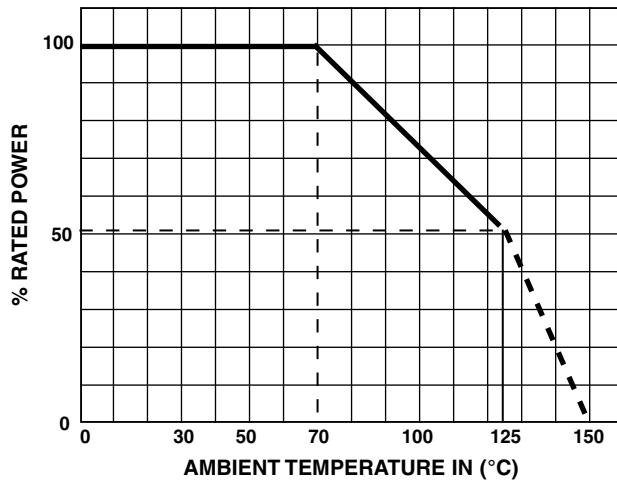
MODEL	RESISTANCE RANGE Ω	RATED POWER $P_{70\text{ °C}}$ W	LIMITING ELEMENT VOLTAGE V	TOLERANCE $\pm \%$	TEMPERATURE COEFFICIENT $\pm \text{ppm}/\text{°C}$
RCMS02	1 to 150K	0.125	300	1	30, 50
	1 to 150K	0.250	300,	1	30, 50
	1 to 150K	0.500	350	1	30, 50
RCMS05	1 to 332K	0.250	350	1	30, 50
	1 to 332K	0.500	350	1	30, 50
RCMS1	1 to 1M	0.500	400	1	30, 50

TECHNICAL AND QUALITY SPECIFICATIONS

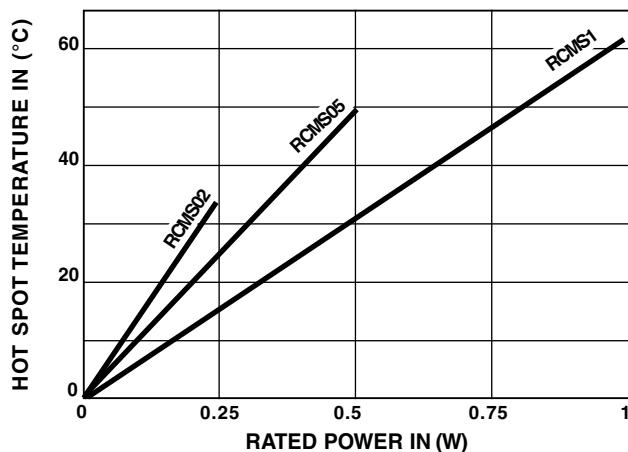
VISHAY SFERNICE SERIES	RCMS02	RCMS05	RCMS1
Reference under CECC 40 101-002 approvals	RS58Y	RS64Y	RS71Y
Reference under CECC 40 101-803 approvals	BC	-	-
MIL-R-105509 F equivalent reference	RN55C	-	-
Power Rating at 70 °C	0.125 W	0.250 W	0.500 W
Resistance Value Range in Relation to Tolerance $\pm 1 \%$ E96	1 Ω to 150 k Ω	1 Ω to 150 k Ω	1 Ω to 332 k Ω
Maximum Voltage	300 V	300 V	350 V
Critical Resistance	-	-	490 k Ω
Temperature Coefficient	Rated in the range -55 °C +155 °C	K3 $\leq \pm 50 \text{ ppm}/\text{°C}$	
	Typical in the range -10 °C +70 °C	K3 $\leq \pm 30 \text{ ppm}/\text{°C}$	
Insulation Resistance (Typical)		$\geq 10^7 \text{ M}\Omega$ (500 V _{DC})	
Voltage Coefficient		10 ppm/V	
Environmental Specification		-65 °C / +155 °C / 56 days	

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

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 $\leq 30\text{ ppm/}^\circ\text{C}$	
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 $\mu\text{V/V}$ for the highest values. It is non measurable for $R_n < 2\text{ k}\Omega$.

MARKING

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

GLOBAL PART NUMBER INFORMATION																
R	C	M	S	0	5		4	R	6	4	0	F	H	A	2	0
GLOBAL MODEL	SIZE	SPECIAL										TOLERANCE	TEMPERATURE COEFFICIENT	PACKAGING		
RCMS	02 05 10	As applicacable. Contact us.										F = 1 %	H = K3, 50 ppm/K	AM500 = A20 AM1000 = A22 BAG50 = S09 BAG100 = S14		
<p>The first four digits are significant figures and the last digit specifies the number of zeros to follow. R designates decimal point.</p> <p>4R640 = 4.64 Ω 48701 = 48 700 Ω 10002 = 100 000 Ω R0100 = 0.01 Ω R6800 = 0.68 Ω 27000 = 2700 Ω = 2.7 kΩ</p>																

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