

## Molded Metal Film High Stability Resistors



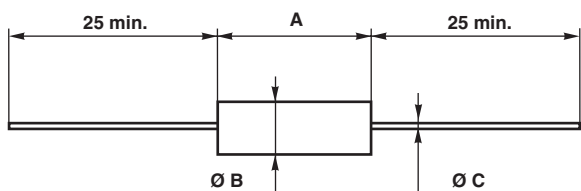
### FEATURES

- 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
- Compliant to RoHS directive 2002/95/EC






**RoHS**  
COMPLIANT


### DIMENSIONS in millimeters

	SERIES AND STYLES	A	Ø B	Ø C	UNIT WEIGHT IN g
	RCMS02	$6.5 \pm 0.2$	$2.5^{+0}_{-0.2}$	0.6	0.26
	RCMS05	$10.2 \pm 0.2$	$3.65 \pm 0.1$	0.6	0.46
	RCMS1	$16 \pm 0.5$	$6.2 \pm 0.2$	0.8	1.30

### TECHNICAL SPECIFICATIONS

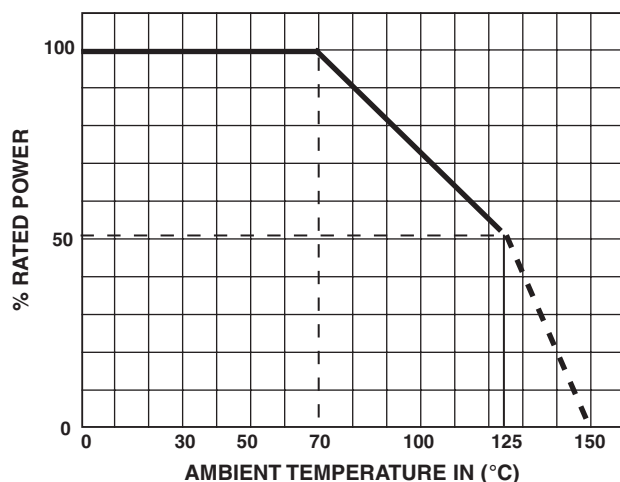
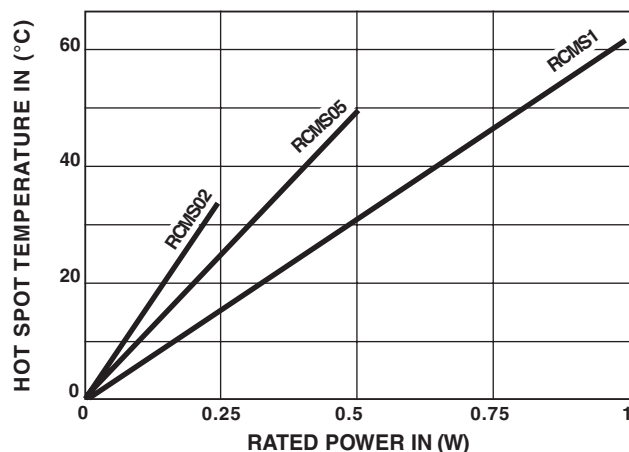
VISHAY SFERNICE SERIES	RCMS02 			RCMS05 		RCMS1 
Reference under CECC 40 101-002 approvals	RS58Y	RS64Y	RS71Y	RS63Y	RS69Y	RS68Y
Reference under CECC 40 101-803 approvals	BC	-	-	CC	-	DC
MIL-R-105509 F equivalent reference	RN55C	-	-	RN60C	-	RN65C
Power Rating at 70 °C	0.125 W	0.250 W	0.500 W	0.250 W	0.500 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					
	Typical in the range - 10 °C + 70 °C					
Insulation Resistance (Typical)	$\geq 10^7$ M $\Omega$ (500 VDC)					
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 $U_m/5$ 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 - 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	$\leq \pm (1 \% + 0.05 \Omega)$ 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.



### GLOBAL PART NUMBER INFORMATION

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



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