

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 ± 1 %
- High insulation typical values: 10^6 M Ω
- 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 ± 0.2	2.5 ⁺⁰ _{-0.2}	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

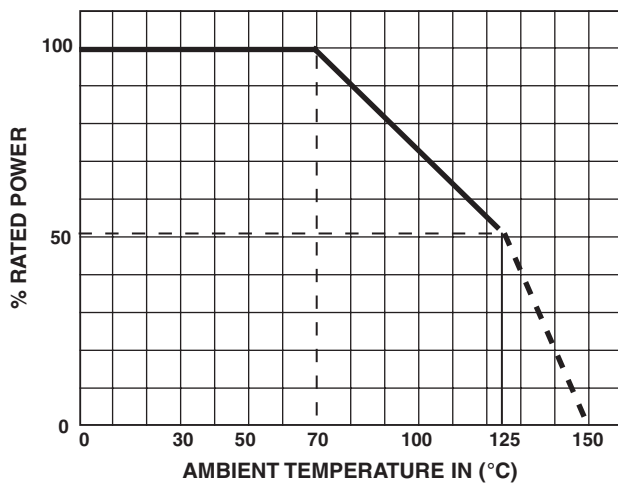
TECHNICAL SPECIFICATIONS						
VISHAY SFERNICE SERIES	RCMS02			RCMS05		RCMS1
Reference under CECC 40 101-002 approvals	RS58Y	RS64Y	RS71Y	RS63Y	RS69Y	RS68Y
Reference under CECC 40 101-803 approvals	BC	-	-	CC	-	DC
MIL-R-105509 F equivalent reference	RN55C	-	-	RN60C	-	RN65C
Power Rating at 70 °C	0.125 W	0.250 W	0.500 W	0.250 W	0.500 W	0.500 W
Resistance Value Range in Relation to Tolerance ± 1 % E96	1 Ω to 332 k Ω	1 Ω to 332 k Ω	1 Ω to 332 k Ω	1 Ω to 1 M Ω	1 Ω to 1 M Ω	1 Ω to 2.21 M Ω
Maximum Voltage	300 V	300 V	350 V	350 V	350 V	400 V
Critical Resistance	-	-	-	490 k Ω	245 k Ω	320 k Ω
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 Ω (500 VDC)					
Voltage Coefficient	10 ppm/V					
Environmental Specification	- 65 °C/+ 155 °C/56 days					

Note

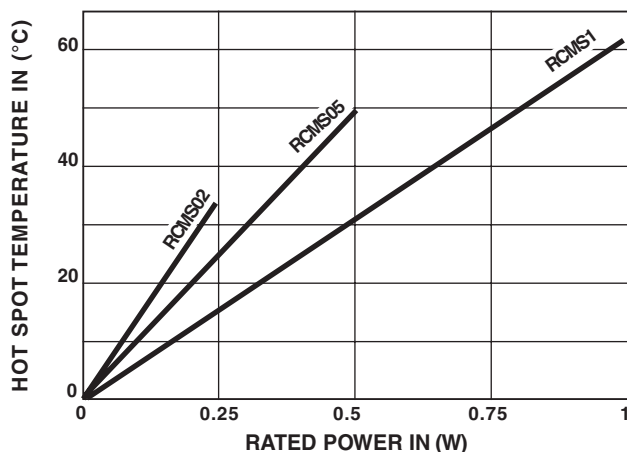
- Undergoes European Quality Insurance System (CECC)

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 Ω	$\pm 0.5 \%$ or 0.05 Ω Insulation resist. 10 ⁶ M Ω
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 Ω
Damp Heat Humidity (Steady State)	56 days with low load	$\leq \pm (1 \% + 0.05 \Omega)$ Insulation resist. > 1 G Ω	$\pm 0.5 \%$ or 0.05 Ω Insulation resist. 10 ⁶ M Ω
Rapid Temperature Change	- 55 °C + 125 °C	$\leq \pm (0.25 \% + 0.05 \Omega)$	$\pm 0.1 \%$ or 0.05 Ω
Climatic Sequence	- 55 °C + 125 °C severity 1	$\leq \pm (0.5 \% + 0.05 \Omega)$ Insulation resist. > 1 G Ω	$\pm 0.1 \%$ or 0.05 Ω Insulation resist. 10 ⁶ M Ω
Terminal Strength	Pull - twist - 2 bends	$\leq \pm (1 \% + 0.05 \Omega)$	$\pm 0.05 \%$ or 0.05 Ω
Vibration	10 - 500 Hz	$\leq \pm (0.25 \% + 0.05 \Omega)$	$\pm 0.05 \%$ or 0.05 Ω
Soldering (Thermal Shock)	+ 260 °C 10 s	$\leq \pm (0.25 \% + 0.05 \Omega)$	$\pm 0.1 \%$ or 0.05 Ω
Load Life	Cycle 90°/30° 1000 h at P_n at 70 °C	$\leq \pm (1 \% + 0.05 \Omega)$ Insulation resist. > 1 G Ω	$\pm 0.2 \%$ or 0.05 Ω Insulation resist. 10 ⁶ M Ω
Shelf Life	1 year ambient temperature	-	$\pm 0.1 \%$ or 0.05 Ω

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 ≤ 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	$\pm 0.5 \%$

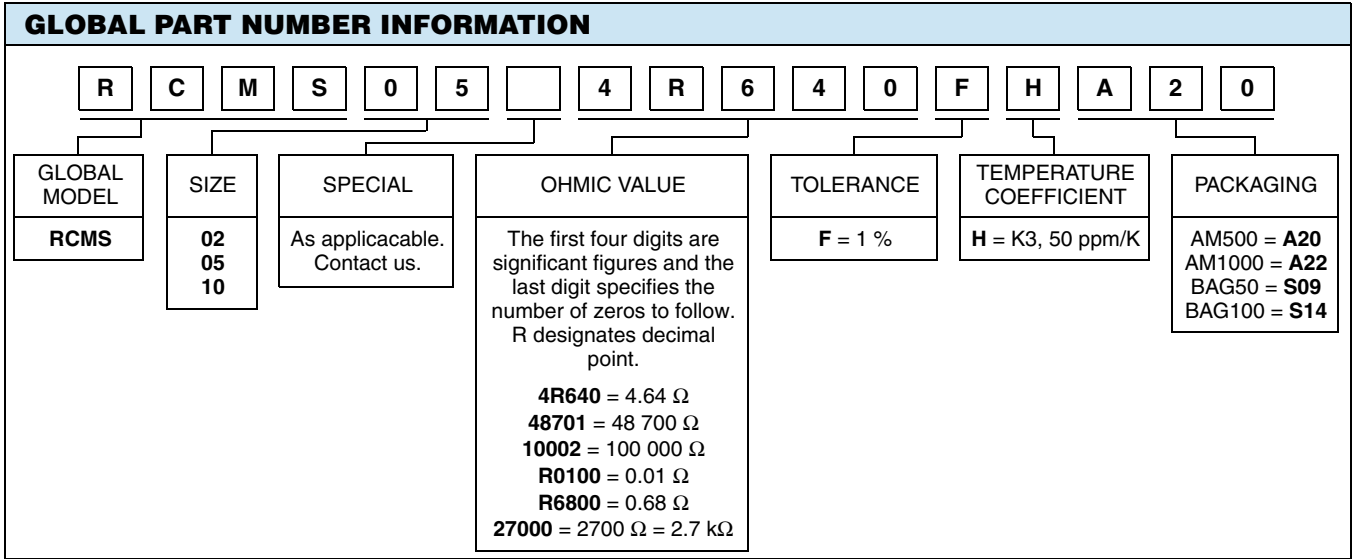
Thus, in operation under the specified conditions (P_r at 70 °C) the total drift (load life + TCR) of a RCMS K3 does not exceed $\pm 0.5 \%$.

NOISE LEVEL

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

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.





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