

## 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

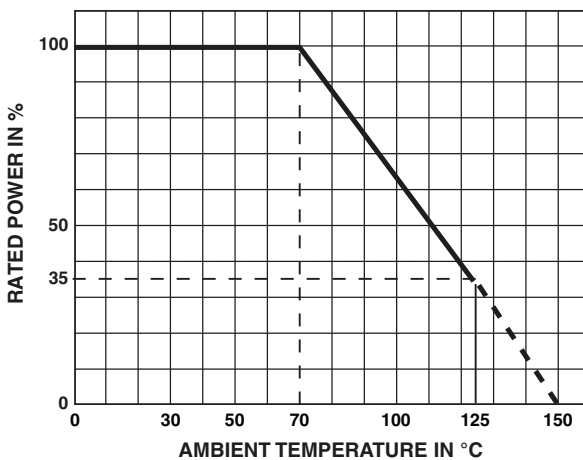
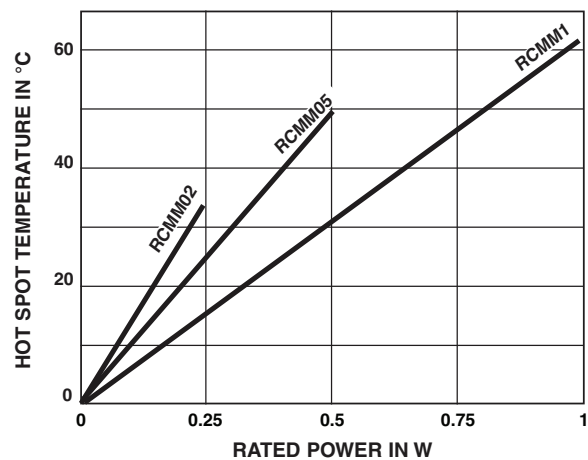
STANDARD ELECTRICAL SPECIFICATIONS					
MODEL	RESISTANCE RANGE Ω	RATED POWER P <sub>70 °C</sub> W	LIMITING ELEMENT VOLTAGE V	TOLERANCE ± %	TEMPERATURE COEFFICIENT ± ppm/°C
RCMM02	1 to 332K	0.25	300	2, 5	50, 100
	1 to 332K	0.50	350	2, 5	50, 100
RCMM05	1 to 1M	0.50	350	2, 5	50, 100
RCMM1	1 to 2.26M	1.0	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 <sup>6</sup> 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 <sup>6</sup> 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 <sup>6</sup> 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 <sup>6</sup> 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					



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