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Vishay Sfernice

Wirebondable High Precision Single Value Thin Film Chip Resistors



Actual Size

The demand for high precision, high stability resistive chips for incorporating in hybrid micro-circuits has increased and is catered for by the comprehensive range of VISHAY micro and minichips.

The super stable RMK nickel chromium resistive film has transformed the performances and characteristics of micro resistive chips bringing a "new state-of-the-art" to the technology. A variety of substrates are available in silicon, alumina, to ensure the best possible characteristics compatible with your application needs.

Precision wafer laser trimming is employed to trim each resistor to precise tolerance.

FEATURES

- Precise tolerance from \pm 0.01 % to \pm 1 %
- Wide resistance ranges from 1 k Ω to 2 M Ω
- Low temperature coefficient ± 10 ppm/°C max.
- Aluminum or gold pads
- Excellent stability < 500 ppm (2000 h, at + 70 °C under Pn)





 Material categorization: For definitions of compliance please see www.vishav.com/doc?99912



Pb-free
RoHS
COMPLIANT
HALOGEN
FREE
GREEN
(5-2008)

STANDARD ELECTRICAL SPECIFICATIONS							
MODEL	SIZE	$ \begin{array}{c c} \textbf{RESISTANCE} \\ \textbf{RANGE} \\ \boldsymbol{\Omega} \end{array} \begin{array}{c c} \textbf{RATED POWER} \\ \boldsymbol{P_{70} ^{\circ}C} \\ \textbf{W} \end{array} \begin{array}{c c} \textbf{LIMITING} \\ \textbf{ELEMENT} \\ \textbf{VOLTAGE} \\ \textbf{V} \end{array} \begin{array}{c c} \textbf{TOLERANCE} \\ \pm \% \end{array} $		TEMPERATURE COEFFICIENT ± ppm/°C			
RMK 55N	0505	1K to 2.5M	0.125	100	0.01, 0.02, 0.05, 0.1, 0.5, 1.0	5, 10, 25	
RMK 515N	1505	1K to 2M	0.250	100	0.01, 0.02, 0.05, 0.1, 0.5, 1.0	5, 10, 25	

CLIMATIC SPECIFICATIONS			
Operating temperature range (1)	- 55 °C to + 155 °C		
Storage temperature range	- 55 °C to + 155 °C		

Note

For temperature up to 230 °C, please refer RMKHT datasheet (www.vishay.com/doc?60075)

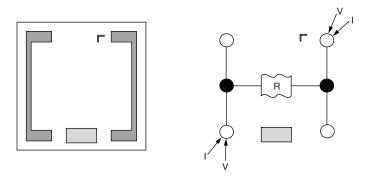
MECHANICAL SPECIFICATIONS			
Resistive element	Nichrome		
Passivation	Silicon nitride		
Substrate material	Silicon		
Bonding pads	Aluminum or gold		

TECHNICAL SPECIFICATIONS					
TEST	SPECIFICATIONS	CONDITIONS			
MATERIAL	ULTRAFILM				
Absolute TCR	± 5 ppm/°C ± 10 ppm/°C/25 ppm/°C	0 to + 70 °C - 55 °C to + 155 °C			
Stability: ∆R/R	± 0.03 %	2000 h Pn at + 70 °C			
Voltage coefficient	< 0.1 ppm/V				
Noise	< - 35 dB typical				
Thermal EMF	< 0.01 μV/°C				
Shelf life stability	50 ppm	1 year at + 25 °C			
Power rating	250 mW (RMK 55)/500 mW (RMK 515)	25 °C			

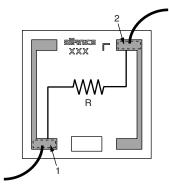
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SCHEMATIC AND PATTERN

The resistance of the four bonding pad configurations can vary, depending on the method of measurement used. Vishay Sfernice measure resistors by the four wires Kelvin technique. The method illustrated here below is important for resistors of less than 1 k Ω .

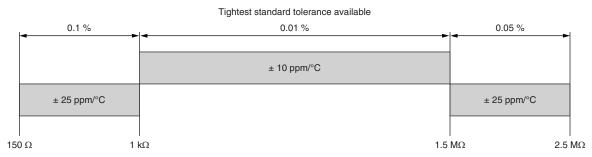


Areas 1 and 2: Preferred bonding pads for value $< 1 \text{ k}\Omega$.

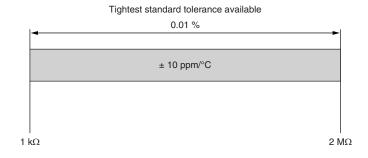


TEMPERATURE COEFFICIENT OF RESISTANCE, VALUES AND TOLERANCES

RMK 55N



RMK 515N

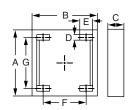




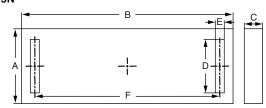
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DIMENSIONS in millimeters

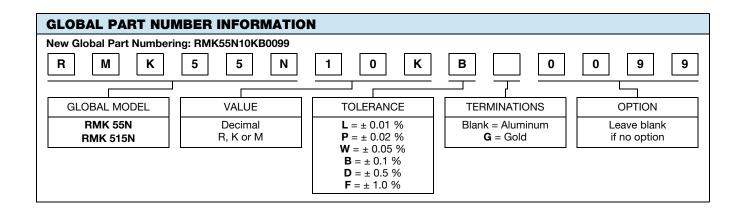
RMK 55N



RMK 515N



SERIES	A ± 0.05	B ± 0.05	С	D	E	F	G
RMK 55N	1.32	1.32	0.4 max.	0.11	0.26	0.87	1.02
RMK 515N	1.32	3.75	0.4 max.	0.96	0.16	3.3	-





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