



# 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 $\Omega$  to 2 M $\Omega$
- Low temperature coefficient  $\pm 10$  ppm/ $^{\circ}\text{C}$  max.
- Aluminum or gold pads
- Excellent stability < 500 ppm (2000 h, at + 70  $^{\circ}\text{C}$  under Pn)
- Wirebondable
- For high temperature see datasheet RMKHT: [www.vishay.com/doc?60075](http://www.vishay.com/doc?60075)
- Material categorization: For definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



RoHS COMPLIANT  
HALOGEN FREE  
GREEN (5-2008)

STANDARD ELECTRICAL SPECIFICATIONS						
MODEL	SIZE	RESISTANCE RANGE $\Omega$	RATED POWER $P_{70^{\circ}\text{C}}$ W	LIMITING ELEMENT VOLTAGE V	TOLERANCE $\pm \%$	TEMPERATURE COEFFICIENT $\pm$ ppm/ $^{\circ}\text{C}$
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 <sup>(1)</sup>	- 55 $^{\circ}\text{C}$ to + 155 $^{\circ}\text{C}$
Storage temperature range	- 55 $^{\circ}\text{C}$ to + 155 $^{\circ}\text{C}$

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

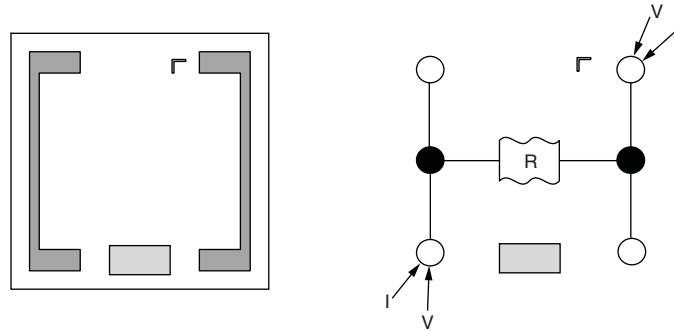
### Note

<sup>(1)</sup> For temperature up to 230  $^{\circ}\text{C}$ , please refer RMKHT datasheet ([www.vishay.com/doc?60075](http://www.vishay.com/doc?60075))

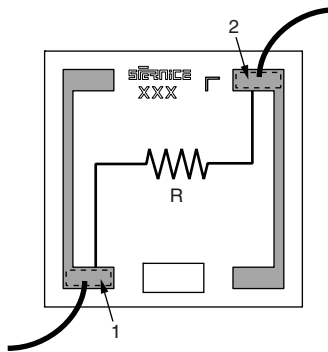
TECHNICAL SPECIFICATIONS		
TEST	SPECIFICATIONS	CONDITIONS
<b>MATERIAL</b>	<b>ULTRAFILM</b>	
Absolute TCR	$\pm 5$ ppm/ $^{\circ}\text{C}$ $\pm 10$ ppm/ $^{\circ}\text{C}/25$ ppm/ $^{\circ}\text{C}$	0 to + 70 $^{\circ}\text{C}$ - 55 $^{\circ}\text{C}$ to + 155 $^{\circ}\text{C}$
Stability: $\Delta R/R$	$\pm 0.03\%$	2000 h Pn at + 70 $^{\circ}\text{C}$
Voltage coefficient	< 0.1 ppm/V	
Noise	< - 35 dB typical	
Thermal EMF	< 0.01 $\mu\text{V}/^{\circ}\text{C}$	
Shelf life stability	50 ppm	1 year at + 25 $^{\circ}\text{C}$
Power rating	250 mW (RMK 55)/500 mW (RMK 515)	25 $^{\circ}\text{C}$

**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 kΩ.

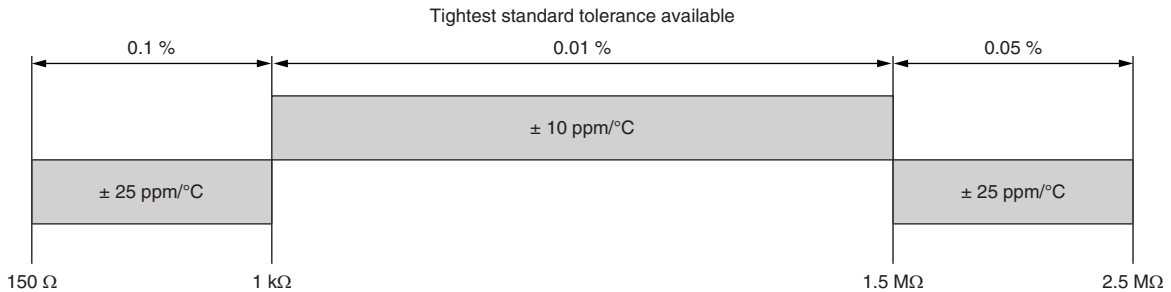


Areas 1 and 2: Preferred bonding pads for value < 1 kΩ.

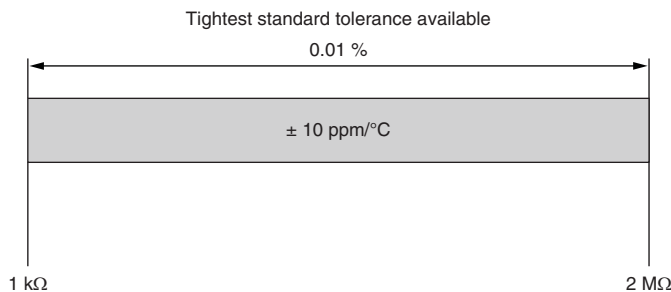


**TEMPERATURE COEFFICIENT OF RESISTANCE, VALUES AND TOLERANCES**

**RMK 55N**



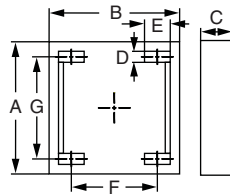
**RMK 515N**



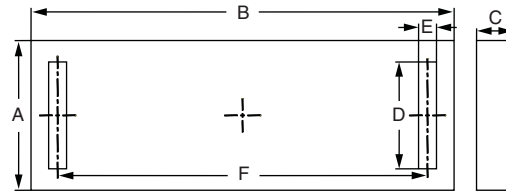


**DIMENSIONS** in millimeters

**RMK 55N**



**RMK 515N**



SERIES	A ± 0.05	B ± 0.05	C	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	-

**GLOBAL PART NUMBER INFORMATION**

New Global Part Numbering: **RMK55N10KB0099**

<b>R</b>	<b>M</b>	<b>K</b>	<b>5</b>	<b>5</b>	<b>N</b>	<b>1</b>	<b>0</b>	<b>K</b>	<b>B</b>		<b>0</b>	<b>0</b>	<b>9</b>	<b>9</b>
GLOBAL MODEL			VALUE			TOLERANCE			TERMINATIONS			OPTION		
RMK 55N RMK 515N			Decimal R, K or M			L = ± 0.01 % P = ± 0.02 % W = ± 0.05 % B = ± 0.1 % D = ± 0.5 % F = ± 1.0 %			Blank = Aluminum G = Gold			Leave blank if no option		



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