

## Wirebondable High Precision Single Value Thin Film Chip Resistors



■ Actual Size

### LINKS TO ADDITIONAL RESOURCES



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 mini chips.

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  $1\text{ k}\Omega$  to  $2\text{ M}\Omega$
- Low temperature coefficient  $\pm 10\text{ ppm}/^\circ\text{C}$  max.
- Aluminum pads
- Excellent stability  $< 500\text{ ppm}$  (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 $\pm\text{ ppm}/^\circ\text{C}$
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 $+155^\circ\text{C}$

#### 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))

### MECHANICAL SPECIFICATIONS

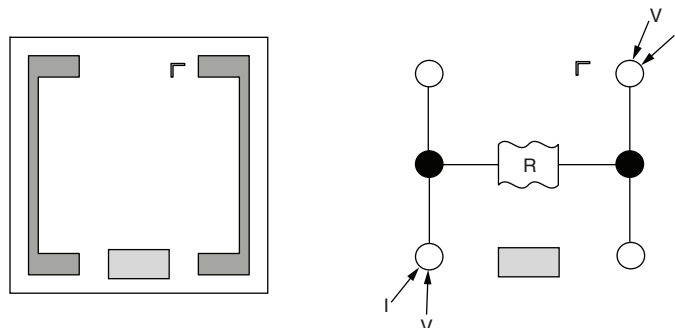
Resistive element	Nichrome
Passivation	Silicon nitride
Substrate material	Silicon
Bonding pads	Aluminum

### TECHNICAL SPECIFICATIONS

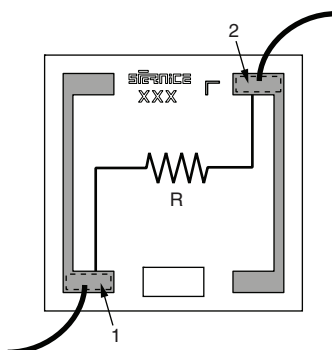
TEST	SPECIFICATIONS	CONDITIONS
<b>MATERIAL</b>	<b>ULTRAFILM</b>	
Absolute TCR	$\pm 5\text{ ppm}/^\circ\text{C}$ $\pm 10\text{ ppm}/^\circ\text{C}/25\text{ ppm}/^\circ\text{C}$	$0$ to $+70^\circ\text{C}$ $-55^\circ\text{C}$ to $+155^\circ\text{C}$
Stability: $\Delta R/R$	$\pm 0.03\%$	2000 h Pn at $+70^\circ\text{C}$
Voltage coefficient	$< 0.1\text{ ppm}/\text{V}$	
Noise	$< -35\text{ dB}$ typical	
Thermal EMF	$< 0.01\text{ }\mu\text{V}/^\circ\text{C}$	
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 k $\Omega$ .

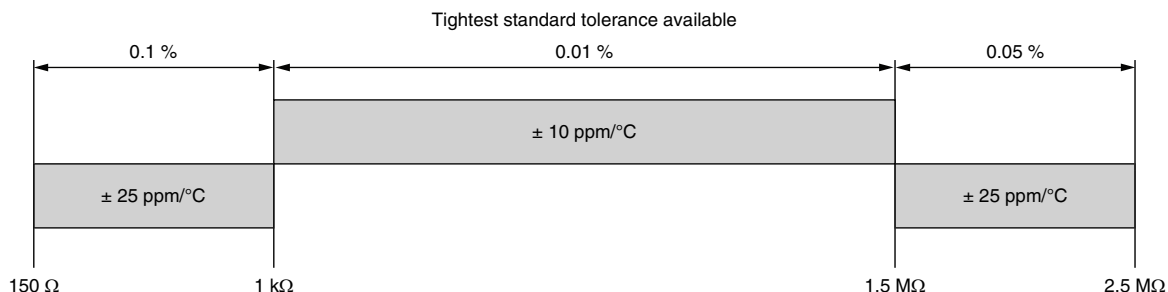


Areas 1 and 2: Preferred bonding pads for value < 1 k $\Omega$ .

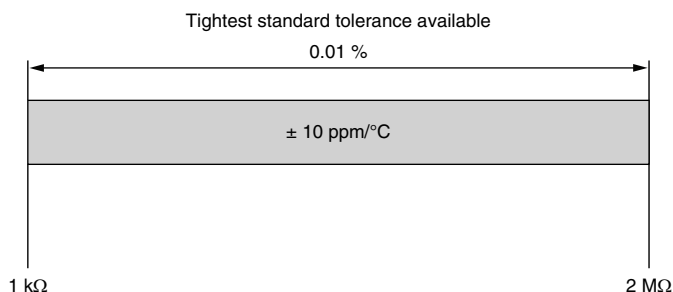


## TEMPERATURE COEFFICIENT OF RESISTANCE, VALUES AND TOLERANCES

### RMK 55N



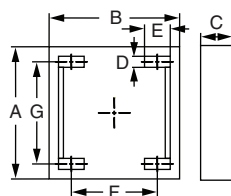
### RMK 515N



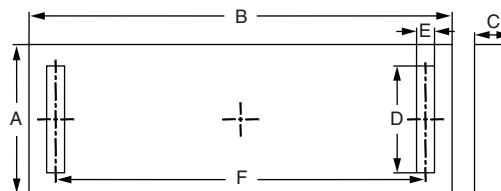


## DIMENSIONS in millimeters

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

R	M	K	5	5	N	1	0	K	B		0	0	9	9
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			Leave blank if no option		



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