

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
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912



RoHS
COMPLIANT
HALOGEN
FREE
GREEN
(5-2008)

STANDARD ELECTRICAL SPECIFICATIONS

MODEL	SIZE	RESISTANCE RANGE Ω	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 ⁽¹⁾	-55°C to $+155^\circ\text{C}$
Storage temperature range	-55°C to $+155^\circ\text{C}$

Note

⁽¹⁾ For temperature up to 230°C , please refer RMKHT datasheet (www.vishay.com/doc?60075)

MECHANICAL SPECIFICATIONS

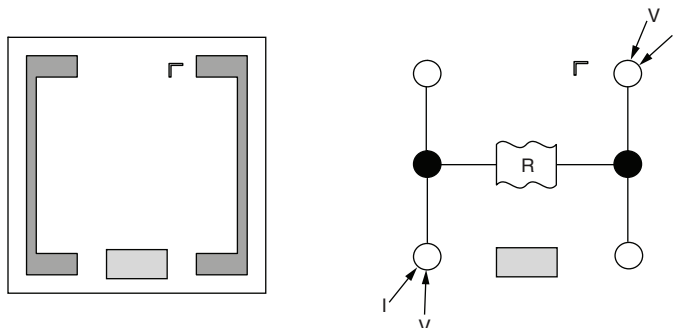
Resistive element	Nichrome
Passivation	Silicon nitride
Substrate material	Silicon
Bonding pads	Aluminum

TECHNICAL SPECIFICATIONS

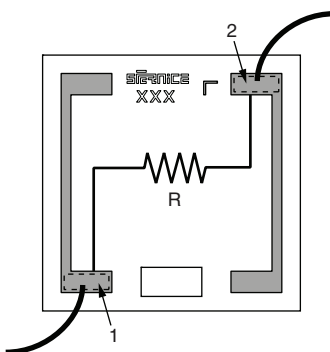
TEST	SPECIFICATIONS	CONDITIONS
MATERIAL	ULTRAFILM	
Absolute TCR	$\pm 5\text{ ppm}/^\circ\text{C}$ $\pm 10\text{ ppm}/^\circ\text{C}/25\text{ ppm}/^\circ\text{C}$	0 to $+70^\circ\text{C}$ -55°C to $+155^\circ\text{C}$
Stability: $\Delta R/R$	$\pm 0.03\%$	2000 h Pn at $+70^\circ\text{C}$
Voltage coefficient	$< 0.1\text{ ppm}/\text{V}$	
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°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 Ω .

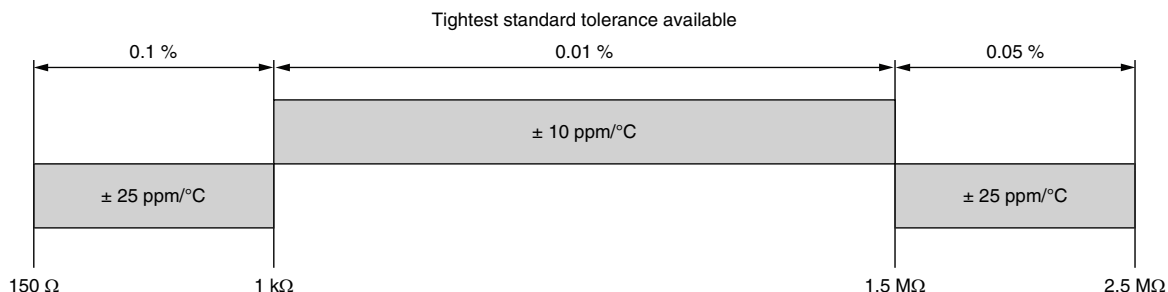


Areas 1 and 2: Preferred bonding pads for value < 1 k Ω .

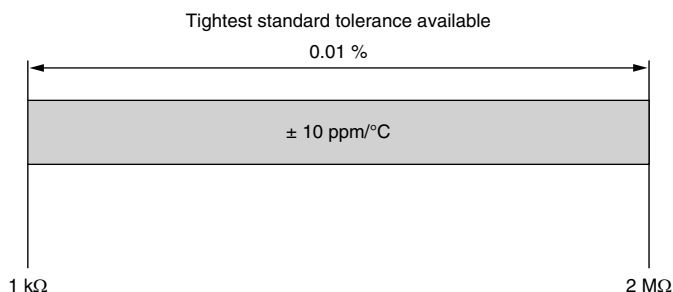


TEMPERATURE COEFFICIENT OF RESISTANCE, VALUES AND TOLERANCES

RMK 55N



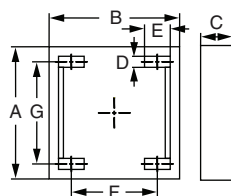
RMK 515N



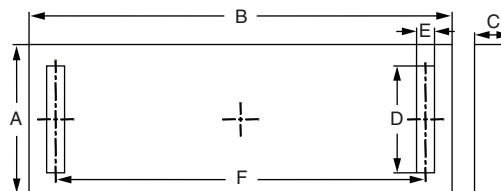


DIMENSIONS in millimeters

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		



Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay's knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Hyperlinks included in this datasheet may direct users to third-party websites. These links are provided as a convenience and for informational purposes only. Inclusion of these hyperlinks does not constitute an endorsement or an approval by Vishay of any of the products, services or opinions of the corporation, organization or individual associated with the third-party website. Vishay disclaims any and all liability and bears no responsibility for the accuracy, legality or content of the third-party website or for that of subsequent links.

Except as expressly indicated in writing, Vishay products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Vishay product could result in personal injury or death. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.