

Single Value 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 $1\text{ k}\Omega$ to $2\text{ M}\Omega$
- Low temperature coefficient $\pm 10\text{ ppm}/^\circ\text{C}$ max.
- Excellent stability $< 500\text{ ppm}$ (2000 h, at $+70\text{ }^\circ\text{C}$ under Pn)
- Wirebondable



TYPICAL PERFORMANCE

| | ABS |
|------|----------|
| TCR | 5 ppm/°C |
| TOL. | 0.01 % |

SCHEMATIC AND PATTERN



| STANDARD ELECTRICAL SPECIFICATIONS | | |
|------------------------------------|-------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| TEST | SPECIFICATIONS | CONDITIONS |
| MATERIAL | ULTRAFILM® | |
| Resistance range | 1 kΩ to 750 kΩ RMK 55 1 kΩ to 2 MΩ RMK 515 | |
| Absolute TCR: | $\pm 5\text{ ppm}/^\circ\text{C}$ $\pm 10\text{ ppm}/^\circ\text{C}$ | 0 to $+70\text{ }^\circ\text{C}$ $-55\text{ }^\circ\text{C}$ to $+155\text{ }^\circ\text{C}$ |
| Absolute tolerance: | 0.01 % to 1 % | |
| Stability: $\Delta R/R$ | $\pm 0.03\%$ | 2000 h Pn at $+70\text{ }^\circ\text{C}$ |
| Voltage coefficient | $< 0.1\text{ ppm}/\text{V}$ | |
| Working voltage | 100 V | |
| Operating temperature range | $-55\text{ }^\circ\text{C}$ to $+155\text{ }^\circ\text{C}$ (1) | |
| Storage temperature range | $-55\text{ }^\circ\text{C}$ to $+155\text{ }^\circ\text{C}$ | |
| Noise | $< -35\text{ dB}$ typical | |
| Thermal EMF | $< 0.01\text{ }\mu\text{V}/^\circ\text{C}$ | |
| Shelf life stability | 50 ppm | 1 year at $+25\text{ }^\circ\text{C}$ |
| Power rating | 250 mW (RMK 55)/500 mW (RMK515) 125 mW (RMK 55)/250 mW (RMK 515) | 25 °C 70 °C |

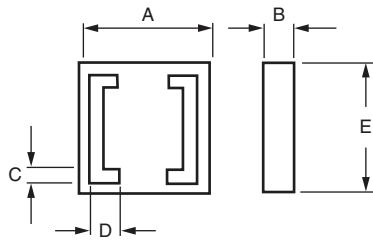
Note:

(1) For temperature up to $200\text{ }^\circ\text{C}$, please contact factory

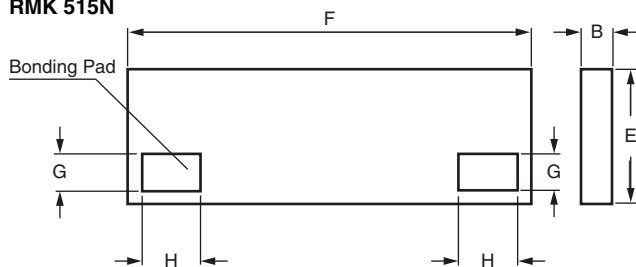
* Please see document “Vishay Green and Halogen-Free Definitions (5-2008)” <http://www.vishay.com/doc?99902>

DIMENSIONS

RMK 55N



RMK 515N



| DIMENSION | INCHES | MILLIMETERS |
|-----------|---------------|-------------|
| A | 0.050 | 1.27 |
| B | 0.015 maximum | 0.4 maximum |
| C | 0.005 | 0.12 |
| D | 0.010 | 0.27 |
| E | 0.050 | 1.27 |
| F | 0.150 | 3.81 |
| G | 0.015 | 0.40 |
| H | 0.023 | 0.60 |

MECHANICAL SPECIFICATIONS

| | |
|--------------------|-----------------|
| Resistive element | Nichrome |
| Passivation | Silicon Nitride |
| Substrate material | Silicon |
| Bonding pads | Aluminum |

GLOBAL PART NUMBER INFORMATION

New Global Part Numbering: RMK55N10KB0002 (preferred part number format)

R **M** **K** **5** **5** **N** **1** **0** **K** **B** **0** **0** **0** **2**

| | | | |
|-------------------|----------------------|----------------------------------------------------------------|--------------------------|
| GLOBAL MODEL | VALUE | TOLERANCE | OPTION |
| RMK55N RMK515N | Decimal R, K or M | B = ± 0.1 % D = ± 0.5 % F = ± 1.0 % | leave blank if no option |

Historical Part Number example: RMK 55N 10K 0.1 % R0002 (will continue to be accepted)

| | | | |
|------------------|-------|-----------|--------|
| RMK 55N | 10K | 0.1 % | R0002 |
| HISTORICAL MODEL | VALUE | TOLERANCE | OPTION |



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