

# Wirebondable Dual Value Thin Film Chip Resistor Networks, Center Tap


 **Actual Size**

## LINKS TO ADDITIONAL RESOURCES



The Vishay RSK33 resistive dividers are based on a nickel-chromium thin metal film formulation on an oxidized silicon substrate and incorporate two resistors of equal ohmic value for use either as a precision voltage divider or as a four terminal resistor. The RSK33 micro dividers were developed as a low cost, temperature and time stable resistive range for hybrid circuit applications demanding miniaturization with improved parametric performances in both industrial and military environments.

Their close ratio tolerance and TCR tracking performances are particularly relevant to amplifier gain-setting and diverse attenuator and terminator applications.

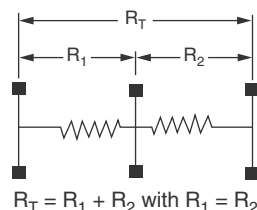
## FEATURES

- Low TCR < 25 ppm/°C
- Rapid rise time
- Low noise < -35 dB
- High temperature version (up to 230 °C) see RMKHT
- Wirebondable
- Stability 0.03 % (2000 h, rated power, at + 70 °C)
- 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)

## SCHEMATIC



(Unequal value on request)

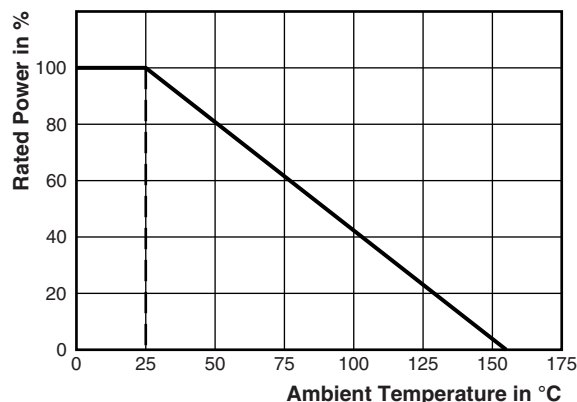
## STANDARD ELECTRICAL SPECIFICATIONS

| MODEL   | SIZE | RESISTANCE RANGE <sup>(1)</sup><br>Ω | POWER RATING<br>$P_{70\text{ °C}}$<br>W | ABSOLUTE TOLERANCE<br>± % | RATIO TOLERANCE <sup>(2)</sup><br>% | ABSOLUTE TCR <sup>(3)</sup><br>± ppm/°C | RATIO TCR<br>± ppm/°C |
|---------|------|--------------------------------------|-----------------------------------------|---------------------------|-------------------------------------|-----------------------------------------|-----------------------|
| RSK 33N | 0303 | 10 to 500K                           | 0.250                                   | 0.5, 1, 2                 | 0.05, 0.1, 0.5, no                  | 15, 25                                  | 5                     |

### Notes

- (1)  $(R_T = R_1 + R_2)$   
(2)  $R > 10\text{ } \Omega$ . Tighter on request: please consult (ohmic range may vary)  
(3) ± 25 ppm/°C maximum, ± 15 ppm/°C maximum at -55 °C to +155 °C

## DERATING

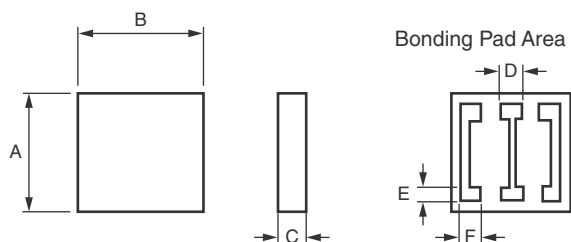


## CLIMATIC SPECIFICATIONS

|                             |                   |
|-----------------------------|-------------------|
| Operating temperature range | -55 °C to +155 °C |
| Storage temperature range   | -55 °C to +155 °C |

| PERFORMANCES         |                                       |                                                                |
|----------------------|---------------------------------------|----------------------------------------------------------------|
| TEST                 | SPECIFICATIONS                        | CONDITIONS                                                     |
| Extended ohmic range | > 500 kΩ to 1 MΩ                      | $R_1 = R_2 \left( R_T = \frac{R_T}{2} + \frac{R_T}{2} \right)$ |
|                      |                                       | $R_1 \neq R_2$ : Please consult                                |
| Stability            | 300 ppm typical                       | 2000 h Pn at +70 °C                                            |
| Voltage coefficient  | < 0.01 ppm/V                          |                                                                |
| Limiting voltage     | 100 V <sub>DC</sub> on R <sub>T</sub> |                                                                |
| Noise                | < -35 dB typical                      | MIL-STD-202 method 308                                         |
| Thermal EMF          | < 0.01 μV/°C                          |                                                                |
| Shelf life stability | 50 ppm                                | 1 year                                                         |

## DIMENSIONS



| DIMENSION | INCHES        | MILLIMETERS  |
|-----------|---------------|--------------|
| A         | 0.033 ± 0.004 | 0.855 ± 0.10 |
| B         | 0.033 ± 0.004 | 0.855 ± 0.10 |
| C         | 0.01 to 0.015 | 0.25 to 0.40 |
| D         | 0.006         | 0.15         |
| E         | 0.004         | 0.10         |
| F         | 0.006         | 0.15         |

| MECHANICAL SPECIFICATIONS |                           |
|---------------------------|---------------------------|
| Resistive element         | Passivated nichrome       |
| Passivation               | Silicon nitride           |
| Substrate material        | Silicon                   |
| Bonding pads              | Aluminum, gold on request |

| GLOBAL PART NUMBER INFORMATION                                              |   |                       |   |                                           |   |                       |   |                                                |   |                             |   |
|-----------------------------------------------------------------------------|---|-----------------------|---|-------------------------------------------|---|-----------------------|---|------------------------------------------------|---|-----------------------------|---|
| New Global Part Numbering: RSK33N5KD25KB0099 (preferred part number format) |   |                       |   |                                           |   |                       |   |                                                |   |                             |   |
| R                                                                           | S | K                     | 3 | 3                                         | N | 5                     | K | D                                              | 2 | 5                           | K |
| B                                                                           | 0 | 0                     | 9 | 9                                         |   |                       |   |                                                |   |                             |   |
| GLOBAL MODEL                                                                |   | R <sub>1</sub> VALUE  |   | ABS. TOLERANCE                            |   | R <sub>2</sub> VALUE  |   | RAT. TOLERANCE                                 |   | OPTION                      |   |
|                                                                             |   | Decimal<br>R, K, or M |   | D = ± 0.5 %<br>F = ± 1.0 %<br>G = ± 2.0 % |   | Decimal<br>R, K, or M |   | D = 0.5 %<br>B = 0.1 %<br>W = 0.05 %<br>N = no |   | Leave blank if<br>no option |   |



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