Excellent Integrated System Limited

Stocking Distributor

Click to view price, real time Inventory, Delivery & Lifecycle Information:

Vishay/Dale
RNC60H4991FSB14

For any questions, you can email us directly:
sales@integrated-circuit.com
Metal Film Resistors, Military/Established Reliability, MIL-PRF-55182 Qualified, Precision, Type RNC, Characteristics J, H, K

**FEATURES**
- Meets requirements of MIL-PRF-55182
- Very low noise (-40 dB)
- Verified failure rate (contact factory for current level)
- 100 % stabilization and screening tests. Group A testing, if desired, to customer requirements
- Controlled temperature coefficient
- Epoxy coating provides superior moisture protection
- Standard lead on RNC product is solderable and weldable
- Traceability of materials and processing
- Monthly acceptance testing
- Vishay Dale has complete capability to develop specific reliability programs designed to customer requirements
- Extensive stocking program at distributors and factory on RNC50, RNC55, RNC60 and RNC65
- For MIL-PRF-55182 characteristics E and C product, see Vishay Angstrom’s HDN (Military RNR/RNN) datasheet (www.vishay.com/doc?66001)

**STANDARD ELECTRICAL SPECIFICATIONS**

<table>
<thead>
<tr>
<th>GLOBAL MODEL</th>
<th>MIL-PRF-55182 STYLE</th>
<th>MIL SPEC. SHEET</th>
<th>POWER RATING $P_W$</th>
<th>POWER RATING $P_\text{MAX} \Omega$</th>
<th>TOLERANCE $\pm %$</th>
<th>MAXIMUM WORKING VOLTAGE $V$</th>
<th>RESISTANCE RANGE $\Omega$</th>
<th>TEMPERATURE COEFFICIENT $\pm \text{ppm}/^\circ\text{C}$</th>
<th>LIFE FAILURE RATE $[\ ]$</th>
</tr>
</thead>
<tbody>
<tr>
<td>ERC50, ERC50..31 [2]</td>
<td>RNC50, RNR50</td>
<td>07</td>
<td>0.10</td>
<td>0.05</td>
<td>0.1, 0.5, 1</td>
<td>200</td>
<td>10 to 796K</td>
<td>100 (K), 50 (H), 25 (J)</td>
<td>M, P, R, S</td>
</tr>
<tr>
<td>ERC55, ERC55..65 [2]</td>
<td>RNC55, RNR55</td>
<td>01</td>
<td>0.125</td>
<td>0.1</td>
<td>0.1, 0.5, 1</td>
<td>200</td>
<td>10 to 2M</td>
<td>100 (K), 50 (H), 25 (J)</td>
<td>M, P, R, S</td>
</tr>
<tr>
<td>ERC55..200, ERC55..201 [2]</td>
<td>RNC60, RNR60</td>
<td>03</td>
<td>0.25</td>
<td>0.125</td>
<td>0.1, 0.5, 1</td>
<td>250</td>
<td>10 to 2M</td>
<td>100 (K), 50 (H), 25 (J)</td>
<td>M, P, R, S</td>
</tr>
<tr>
<td>ERC65, ERC65..65 [2]</td>
<td>RNC65, RNR65</td>
<td>05</td>
<td>0.50</td>
<td>0.25</td>
<td>0.1, 0.5, 1</td>
<td>300</td>
<td>10 to 3.01M</td>
<td>100 (K), 50 (H), 25 (J)</td>
<td>M, P, R</td>
</tr>
<tr>
<td>ERC70, ERC70..4 [2]</td>
<td>RNC70, RNR70</td>
<td>06</td>
<td>0.75</td>
<td>0.50</td>
<td>0.1, 0.5, 1</td>
<td>350</td>
<td>10 to 3.01M</td>
<td>100 (K), 50 (H), 25 (J)</td>
<td>M, P, R</td>
</tr>
</tbody>
</table>

**Notes**
- [2] Continuous working voltage shall be $\frac{P}{R}$ or maximum working voltage, whichever is less.
- [4] Tolerance of $\pm 0.1 \%$ is not applicable to characteristics K.

**TECHNICAL SPECIFICATIONS**

<table>
<thead>
<tr>
<th>PARAMETER</th>
<th>UNIT</th>
<th>CONDITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage Coefficient, max.</td>
<td>ppm/V</td>
<td>5/V when measured between 10 % and full rated voltage</td>
</tr>
<tr>
<td>Dielectric Strength</td>
<td>$V_{AC}$</td>
<td>RNC50, RNC55 and RNC60 = 450; RNC65 and RNC70 = 900</td>
</tr>
<tr>
<td>Insulations Resistance</td>
<td>$\Omega$</td>
<td>$\geq 10^{11}$ dry; $\geq 10^{9}$ after moisture test</td>
</tr>
<tr>
<td>Operating Temperature Range</td>
<td>°C</td>
<td>-65 to +175</td>
</tr>
<tr>
<td>Terminal Strength</td>
<td>lb</td>
<td>2 lb pull test on RNC50, RNC55, RNC60 and RNC65; 4.5 lb pull test on RNC70</td>
</tr>
<tr>
<td>Solderability</td>
<td></td>
<td>Continuous satisfactory coverage when tested in accordance with MIL-STD-202, method 208</td>
</tr>
<tr>
<td>Weight</td>
<td>g</td>
<td>RNC50 = 0.11; RNC55 = 0.35; RNC60 = 0.35; RNC65 = 0.84; RNC70 = 1.08</td>
</tr>
</tbody>
</table>
ERC (Military RNC/RNR)

Vishay Dale

**GLOBAL PART NUMBER INFORMATION**

New Global Part Numbering: RNC55H2152FRR36 (preferred part numbering format)

<table>
<thead>
<tr>
<th>R</th>
<th>N</th>
<th>C</th>
<th>5</th>
<th>5</th>
<th>H</th>
<th>2</th>
<th>1</th>
<th>5</th>
<th>2</th>
<th>F</th>
<th>R</th>
<th>R</th>
<th>3</th>
<th>6</th>
</tr>
</thead>
</table>

MIL STYLE CHARACTERISTICS
- RNC = solderable/weldable
- RNR = solderable only

### RESISTANCE

- **J** = ± 25 ppm
- **H** = ± 50 ppm
- **K** = ± 100 ppm

**TOLERANCE CODE**
- **B** = ± 0.1 %
- **D** = ± 0.5 %
- **F** = ± 1 %

**FAILURE RATE**
- **M** = 1.0 %/1000 h
- **P** = 0.1 %/1000 h
- **R** = 0.01 %/1000 h
- **S** = 0.001 %/1000 h

**PACKAGING**
- **B14** = tin/lead, bulk
- **BSL** = tin/lead, bulk, single lot date code
- **R36** = tin/lead, T/R (full; 55, 60)

**SPECIAL**
- Blank = standard (Dash number)
- (Up to 3 digits)

**DIMENSIONS** in inches (millimeters)

**MATERIAL SPECIFICATIONS**
- **Element**
  - Vacuum-deposited nickel-chrome alloy
- **Core**
  - Fire-cleaned high purity ceramic
- **Encapsulation**
  - Specially formulated epoxy compound
- **Termination**
  - Standard lead material is solder-coated copper. Solderable and weldable per MIL-STD-1276, type C

### POWER RATING

Power ratings are based on the following two conditions:
1. ± 2.0 % maximum ±R in 10 000 h load life
2. +175 °C maximum operating temperature

**APPLICATION SPECIFICATIONS**

**MIL-PRF-55182**

- The ERC series meets the electrical, environmental and dimensional requirements of MIL-PRF-55182.

**MIL-R-10509**

- MIL-PRF-55182 supersedes MIL-R-10509 on new designs. The ERC series meets or exceeds MIL-R-10509 requirements.

**DOCUMENTATION:**

- Qualification and failure rate verification test data is maintained by Vishay Dale and is available upon request.
- Lot traceability and identification data is maintained by Vishay Dale for five years.

**CAGE CODE:** 91637
Vishay Dale ERC resistors have an operating temperature range of -65 °C to +175 °C. They must be derated according to the following curve:

**MARKING (per MIL-PRF-55182)**

Characteristics: K = 100 ppm, H = 50 ppm, J = 25 ppm
Tolerance: F = 1 %, D = 0.5 %, B = 0.1 %
Value = three significant figures and multiplier
J = JAN (Joint Army - Navy) brand

<table>
<thead>
<tr>
<th>RNC/RNR50, 55 (4 lines)</th>
<th>RNC/RNR60, 65, 70 (5 lines)</th>
</tr>
</thead>
<tbody>
<tr>
<td>D 210H 1003 FSCJ</td>
<td>91637 1213J 12110A</td>
</tr>
<tr>
<td>Manufacturer’s code</td>
<td>CAGE code</td>
</tr>
<tr>
<td>3 digit date code and characteristic</td>
<td>4 digit date code and JAN</td>
</tr>
<tr>
<td>Value</td>
<td>Style and characteristic</td>
</tr>
<tr>
<td>Tolerance, failure rate, lead material and JAN</td>
<td>Value, tolerance, and failure rate</td>
</tr>
<tr>
<td></td>
<td>Production lot code</td>
</tr>
</tbody>
</table>
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Vishay

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