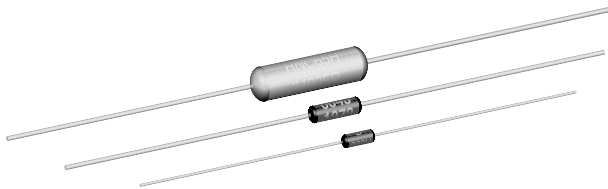


## Metal Film Resistors, Military/Established Reliability, MIL-PRF-55182 Qualified, Precision, Type RNC, Characteristics J, H, K



### 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

STANDARD ELECTRICAL SPECIFICATIONS										
VISHAY DALE MODEL	MIL-PRF-55182 STYLE	MIL SPEC. SHEET	POWER RATING		TOLERANCE <sup>(4)</sup> ± %	MAXIMUM WORKING VOLTAGE <sup>(2)</sup> V	RESISTANCE RANGE Ω			LIFE FAILURE RATE <sup>(1)</sup>
			P <sub>70 °C</sub> W	P <sub>125 °C</sub> W			± 100 ppm/°C (K)	± 50 ppm/°C (H)	± 25 ppm/°C (J)	
ERC50, ERC50..31 <sup>(3)</sup>	RNC50, RNR50	07	0.10	0.05	0.1, 0.5, 1	200	10 to 796K			M, P, R, S
ERC55, ERC55..65 <sup>(3)</sup>	RNC55, RNR55	01	0.125	0.10	0.1, 0.5, 1	200	10 to 2M			M, P, R, S
ERC55..200, ERC55..201 <sup>(3)</sup>	RNC60, RNR60	03	0.25	0.125	0.1, 0.5, 1	250	10 to 2M			M, P, R, S
							2.01M to 3.01M			M
ERC65, ERC65..65 <sup>(3)</sup>	RNC65, RNR65	05	0.50	0.25	0.1, 0.5, 1	300	10 to 3.01M			M, P, R
ERC70, ERC70..4 <sup>(3)</sup>	RNC70, RNR70	06	0.75	0.50	0.1, 0.5, 1	350	10 to 3.01M			M, P, R

**Notes**

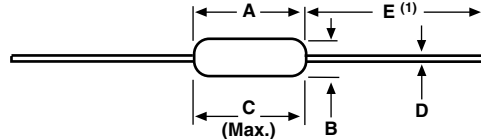
- <sup>(1)</sup> Consult factory for current QPL failure rates.  
<sup>(2)</sup> Continuous working voltage shall be  $\sqrt{P \times R}$  or maximum working voltage, whichever is less.  
<sup>(3)</sup> Hot solder dipped leads  
<sup>(4)</sup> Standard resistance tolerances: ± 0.1 % (B), ± 0.5 % (D) and ± 1 % (F). ± 0.1 % not applicable to characteristic K.

TECHNICAL SPECIFICATIONS		
PARAMETER	UNIT	CONDITION
Voltage Coefficient, max.	ppm/V	5/V when measured between 10 % and full rated voltage
Dielectric Strength	V <sub>AC</sub>	RNC50, RNC55 and RNC60 = 450; RNC65 and RNC70 = 900
Insulations Resistance	Ω	≥ 10 <sup>11</sup> dry; ≥ 10 <sup>9</sup> after moisture test
Operating Temperature Range	°C	- 65 to + 175
Terminal Strength	lb	2 lb pull test on RNC50, RNC55, RNC60 and RNC65; 4.5 lb pull test on RNC70
Solderability		Continuous satisfactory coverage when tested in accordance with MIL-STD-202, Method 208
Weight	g	RNC50 = 0.11; RNC55 = 0.35; RNC60 = 0.35; RNC65 = 0.84; RNC70 = 1.60



GLOBAL PART NUMBER INFORMATION						
New Global Part Numbering: <b>RNC55H2152FRR36</b> (preferred part numbering format)						
<div style="display: flex; justify-content: space-around; font-weight: bold; font-size: 1.2em;"> <span>R</span><span>N</span><span>C</span><span>5</span><span>5</span><span>H</span><span>2</span><span>1</span><span>5</span><span>2</span><span>F</span><span>R</span><span>R</span><span>3</span><span>6</span><span></span><span></span><span></span> </div>						
MIL STYLE	CHARACTERISTICS	RESISTANCE VALUE	TOLERANCE CODE	FAILURE RATE	PACKAGING	SPECIAL
<b>RNC</b> = Solderable/weldable <b>RNR</b> = Solderable only (see Standard Electrical Specifications table)	<b>J</b> = ± 25 ppm <b>H</b> = ± 50 ppm <b>K</b> = ± 100 ppm	3 digit significant figure, followed by a multiplier Use "R" for values < 100 Ω <b>10R0</b> = 10 Ω <b>2152</b> = 21.5 kΩ <b>3014</b> = 3.01 MΩ	<b>B</b> = ± 0.1 % <b>D</b> = ± 0.5 % <b>F</b> = ± 1 %	<b>M</b> = 1.0%/1000 h <b>P</b> = 0.1%/1000 h <b>R</b> = 0.01%/1000 h <b>S</b> = 0.001%/1000 h	<b>B14</b> = Tin/lead, bulk <b>BSL</b> = Tin/lead, bulk, single lot date code <b>R36</b> = Tin/lead, T/R (full; 50, 55, 60) <b>R64</b> = Tin/lead, T/R (full; 65, 70) <b>RE6</b> = Tin/lead, T/R (1000 pieces) <b>RSL</b> = Tin/lead, T/R, single lot date code	Blank = Standard (Dash number) (Up to 3 digits) From <b>1 to 999</b> as applicable <b>4</b> = Hot solder dip (70's) <b>31</b> = Hot solder dip (50's) <b>65</b> = Hot solder dip (55's, 65's) <b>201</b> = Hot solder dip (60's)
Historical Part Number example: <b>RNC55H2152FR R36</b> (will continue to be accepted)						
<b>RNC55</b>	<b>H</b>	<b>2152</b>	<b>F</b>	<b>R</b>	<b>R36</b>	
MIL STYLE	CHARACTERISTIC	RESISTANCE VALUE	TOLERANCE CODE	FAILURE RATE	PACKAGING	

**DIMENSIONS** in inches (millimeters)



**Note**  
 (1) 1.08 ± 0.125 (27.43 ± 3.18) if tape and reel

VISHAY DALE MODEL	MIL-PRF-55182 STYLE	A	B	C (Max.)	D	E
ERC50	RNC50, RNR50	0.150 ± 0.020 (3.81 ± 0.51)	0.070 ± 0.010 (1.78 ± 0.25)	0.187 (4.75)	0.016 ± 0.002 (0.41 ± 0.05)	1.25 ± 0.266 (31.75 ± 6.76)
ERC55	RNC55, RNR55	0.250 + 0.031 - 0.046 (6.35 + 0.79 - 1.17)	0.094 ± 0.012 (2.39 ± 0.30)	0.300 (7.62)	0.025 ± 0.002 (0.64 ± 0.05)	1.50 ± 0.125 (38.1 ± 3.18)
ERC55..200	RNC60, RNR60	0.280 ± 0.020 (7.11 ± 0.51)	0.097 ± 0.012 (2.46 ± 0.30)	0.350 (8.89)	0.025 ± 0.002 (0.64 ± 0.05)	1.50 ± 0.125 (38.1 ± 3.18)
ERC65	RNC65, RNR65	0.562 ± 0.031 (14.27 ± 0.79)	0.180 ± 0.015 (4.57 ± 0.38)	0.687 (17.45)	0.025 ± 0.002 (0.64 ± 0.05)	1.50 ± 0.125 (38.1 ± 3.18)
ERC70	RNC70, RNR70	0.562 ± 0.031 (14.27 ± 0.79)	0.180 ± 0.015 (4.57 ± 0.38)	0.687 (17.45)	0.032 ± 0.002 (0.81 ± 0.05)	1.50 ± 0.125 (38.1 ± 3.18)

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

**APPLICABLE MIL-SPECIFICATIONS**

**MIL-PRF-55182:**

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

**MIL-R-10509:**

MIL-PRF-55182 supercedes 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.

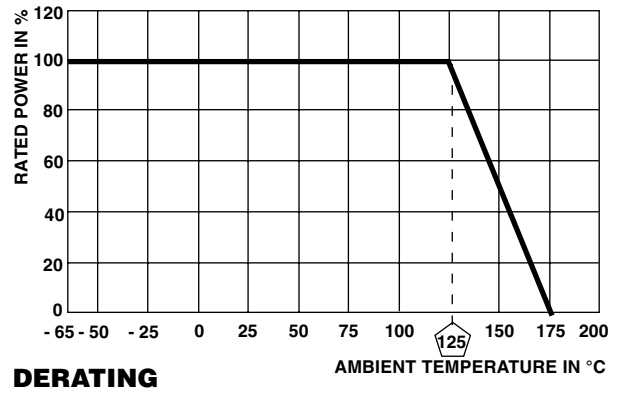
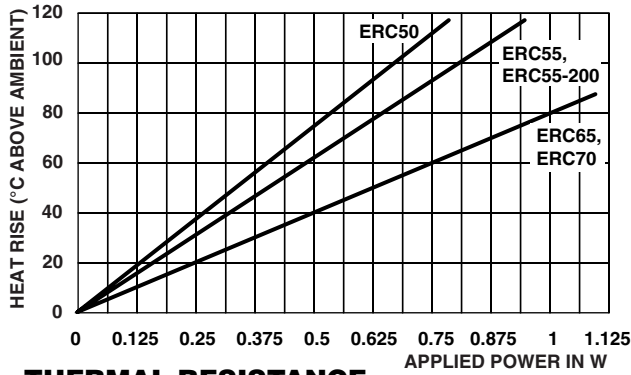
**POWER RATING**

Power ratings are based on the following two conditions:

- ± 2.0 % maximum ΔR in 10 000 h load life
- + 175 °C maximum operating temperature

**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



## Disclaimer

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## Material Category Policy

**Vishay Intertechnology, Inc. hereby certifies that all its products that are identified as RoHS-Compliant fulfill the definitions and restrictions defined under Directive 2011/65/EU of The European Parliament and of the Council of June 8, 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (EEE) - recast, unless otherwise specified as non-compliant.**

**Please note that some Vishay documentation may still make reference to RoHS Directive 2002/95/EC. We confirm that all the products identified as being compliant to Directive 2002/95/EC conform to Directive 2011/65/EU.**