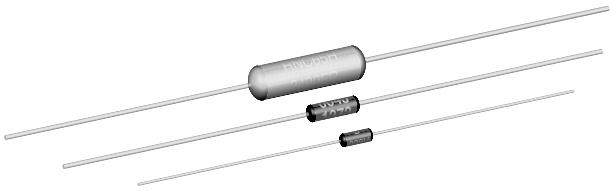
Metal Film Resistors, Military/Established Reliability, MIL-PRF-55182 Qualified, Type RNC, Characteristics J, H, K



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 Angstrohm's HDN (Military RNR/RNN) data sheet

STANDARD ELECTRICAL SPECIFICATIONS

VISHAY DALE MODEL	MIL-PRF-55182 TYPE	POWER RATING		RESISTANCE TOLERANCE %	MAXIMUM WORKING VOLTAGE	RESISTANCE RANGE (Ω) (1)			LIFE FAILURE RATE (1)
		$P_{70\,°C}$ W	$P_{125\,°C}$ W			100 ppm/°C (K)	50 ppm/°C (H)	25 ppm/°C (J)	
ERC50	RNC50, RNR50	0.10	0.05	± 0.1, ± 0.5, ± 1	200	10R - 796K	10R - 796K	10R - 796K	M, P, R, S
ERC55	RNC55, RNR55	0.125	0.10	± 0.1, ± 0.5, ± 1	200	10R - 2M0	10R - 2M0	10R - 2M0	M, P, R, S
ERC55..200	RNC60, RNR60	0.25	0.125	± 0.1, ± 0.5, ± 1	250	10R - 3M01	10R - 3M01	10R - 3M01	M, P, R, S
ERC65	RNC65, RNR65	0.50	0.25	± 0.1, ± 0.5, ± 1	300	10R - 3M01	10R - 3M01	10R - 3M01	M, P, R
ERC70	RNC70, RNR70	0.75	0.50	± 0.1, ± 0.5, ± 1	350	10R - 3M01	10R - 3M01	10R - 3M01	M, P, R

Note

(1) Consult factory for current QPL failure rates
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/°C	5/V when measured between 10 % and full rated voltage
Dielectric Strength	V_{AC}	RNC50, RNC55 and RNC60 = 450; RNC65 and RNC70 = 900
Insulations Resistance	Ω	≥ 10^{11} dry; ≥ 10^{9} 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: RNC55H2152FRR36 (preferred part numbering format)

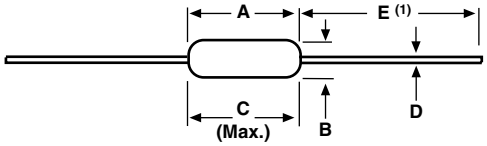
R	N	C	5	5	H	2	1	5	2	F	R	R	3	6			

MIL STYLE	CHARACTERISTICS	RESISTANCE VALUE	TOLERANCE CODE	FAILURE RATE	PACKAGING	SPECIAL
RNC = Solderable/ Weldable **RNR** = Solderable only (see Standard Electrical Specifications table)	**J** = ± 25 ppm **H** = ± 50 ppm **K** = ± 100 ppm	3 digit significant figure, followed by a multiplier **10R0** = 10 Ω **2152** = 21.5 kΩ **3014** = 3.01 MΩ	**B** = ± 0.1 % **D** = ± 0.5 % **F** = ± 1 %	**M** = 1.0 %/1000 h **P** = 0.1 %/1000 h **R** = 0.01 %/1000 h **S** = 0.001 %/1000 h	**B14** = Tin/Lead, Bulk **BSL** = Tin/Lead, Bulk, Single Lot Date Code **R36** = Tin/Lead, T/R (Full; 50, 55, 60) **R64** = Tin/Lead, T/R (Full; 65, 70) **RE6** = Tin/Lead, T/R (1000 pieces) **RSL** = Tin/Lead, T/R, Single Lot Date Code	Blank = Standard (Dash Number) (up to 3 digits) From **1 - 999** as applicable **4** = Hot Solder Dip (70's) **31** = Hot Solder Dip (50's) **65** = Hot Solder Dip (55's) **65** = Hot Solder Dip (65's) **201** = Hot Solder Dip (60's)

Historical Part Number example: RNC55H2152FR R36 (will continue to be accepted)

RNC55	H	2152	F	R	R36
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

Element:	Vacuum-deposited nickel-chrome alloy	**Encapsulation:**	Specially formulated epoxy compound
Core:	Fire-cleaned high purity ceramic	**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 ΔR in 10 000 h load life
2. + 175 °C maximum operating temperature

APPLICABLE MIL-SPECIFICATIONS

MIL-PRF-55182:

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

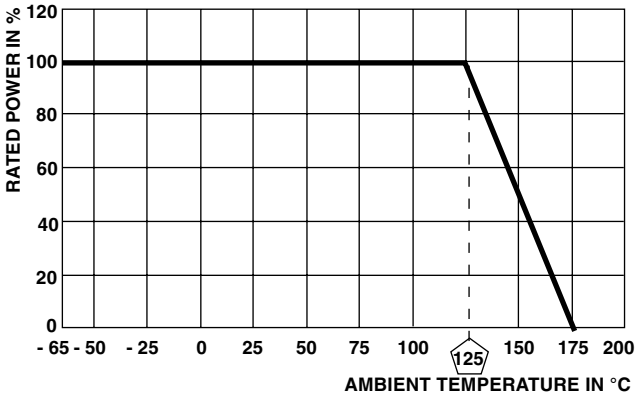
MIL-R-10509:

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.

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



DERATING

CAGE CODE: 91637

MARKING

- Per MIL-PRF-55182

Disclaimer

All product specifications and data are subject to change without notice.

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