

Metal Film Resistors, Military/Established Reliability MIL-PRF-55182, Qualified, Type RNC



FEATURES

- Meets requirements of MIL-PRF-55182
- Very low noise
- Verified Failure Rate (Contact factory for current level)
- 100% stabilization and screening tests. Group A Testing, if desired, to customer requirements.
- Controlled temperature coefficient
- Excellent high frequency performance
- 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

STANDARD ELECTRICAL SPECIFICATIONS									
VISHAY DALE MODEL	MIL-R-55182 TYPE	POWER RATING		RESISTANCE TOLERANCE %	MAXIMUM WEIGHT (Grams)	MAXIMUM WORKING VOLTAGE	RESISTANCE RANGE (Ω)*		
		P _{70°C} W	P _{125°C} W				100ppm/°C (K)	50ppm/°C (H)	25ppm/°C (J)
ERC50	RNC50, RNR50	0.10	0.05	± 0.1, ± 0.5, ± 1	0.11	200	10R - 796k	10R - 796k	10R - 796k
ERC55	RNC55, RNR55	0.125	0.1	± 0.1, ± 0.5, ± 1	0.35	200	10R - 2.0M	10R - 2.0M	10R - 2.0M
ERC55..200	RNC60, RNR60	0.25	0.125	± 0.1, ± 0.5, ± 1	0.35	250	10R - 2.0M	10R - 2.0M	10R - 2.0M
ERC65	RNC65, RNR65	0.5	0.25	± 0.1, ± 0.5, ± 1	0.84	300	10R - 3.01M	10R - 3.01M	10R - 3.01M
ERC70	RNC70, RNR70	0.75	0.5	± 0.1, ± 0.5, ± 1	1.60	350	10R - 3.01M	10R - 3.01M	10R - 3.01M

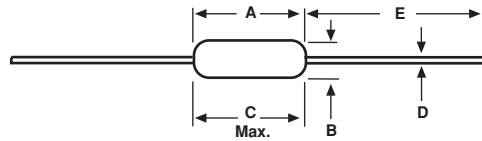
* Consult factory for values on QPL.

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/Volt when measured between 10% and full rated voltage
Dielectric Strength	VAC	RNC50, RNC55 and RNC60 = 450; RNC65 and RNC70 = 900
Insulation Resistance	Ω	≥ 10 ¹¹ dry; ≥ 10 ⁹ after moisture test
Operating Temperature Range	°C	- 65 / + 175
Terminal Strength	lb	2lb pull test on RNC50, RNC55, RNC60 and RNC65; 4.5lb pull test on RNC70
Solderability		Continuous satisfactory coverage when tested in accordance with MIL-STD-202, Method 208

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	CHARACTERISTIC	RESISTANCE VALUE	TOLERANCE CODE	FAILURE RATE	PACKAGING	SPECIAL
RNC = Solderable/Weldable RNR = Solderable only (see Standard Electrical Specifications Table)	J = 25ppm H = 50ppm K = 100ppm	3 digit significant figure, followed by a multiplier 10R0 = 10Ω 2152 = 21.5KΩ 3014 = 3.01MΩ	B = ± 0.1% D = ± 0.5% F = ± 1%	M = 1.0%/1000h P = 0.1%/1000h R = 0.01%/1000h S = 0.001%/1000h	B14 = Tin/Lead, Bulk R36 = Tin/Lead, T/R (Full; 50,55,60) R64 = Tin/Lead, T/R (Full; 65,70) RE6 = Tin/Lead, T/R (1000 pcs)	Blank = Standard (Dash Number) (up to 3 digits) From 1-999 as applicable 4 = Hot Solder Dip (70s) 31 = Hot Solder Dip (50s) 65 = Hot Solder Dip (55s) 65 = Hot Solder Dip (65s) 201 = Hot Solder Dip (60s)
Historical Part Number example: RNC55H2152FR (will continue to be accepted)						
RNC55	H	2152	F	R	R	R36
MIL STYLE	CHARACTERISTIC	RESISTANCE VALUE	TOLERANCE CODE	FAILURE RATE	PACKAGING	

DIMENSIONS in inches [millimeters]



* 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]	0.091 ± 0.009 [2.31 ± 0.23]	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]	0.094 ± 0.009 [2.39 ± 0.23]	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 10000 hours load life.
 2. + 175°C maximum operating temperature.

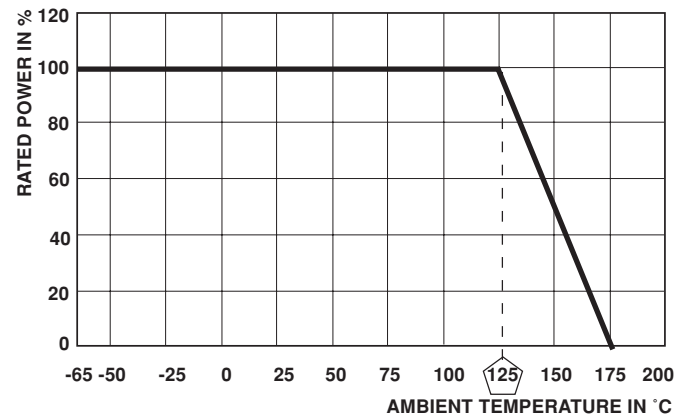
APPLICABLE MIL-SPECIFICATIONS

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

MARKING
— Per MIL-PRF-55182