

## 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

TEMPERATURE COEFFICIENT CODE			
TC CODE	MIL. CHAR.	TEMPERATURE COEFFICIENT	TEMPERATURE RANGE
T-1	K	0 ± 100ppm/°C	- 55°C to + 175°C
T-2	H	0 ± 50ppm/°C	- 55°C to + 175°C
T-9	J	0 ± 25ppm/°C	- 55°C to + 175°C

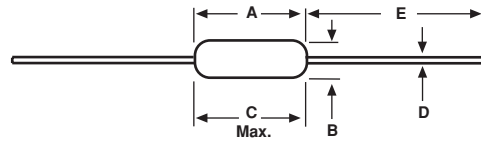
STANDARD ELECTRICAL SPECIFICATIONS									
VISHAY DALE MODEL	MIL-R-55182 TYPE	POWER RATING		RESISTANCE TOLERANCE %	MAXIMUM WEIGHT (Grams)	MAXIMUM WORKING VOLTAGE	RESISTANCE RANGE (Ohms)*		
		P <sub>70°C</sub> W	P <sub>125°C</sub> W				T-1 (K)	T-2 (H)	T-9 (J)
ERC-50	RNC50	0.10	0.05	± 0.1, ± 0.5, ± 1	.11	200	10R - 796k	10R - 796k	10R - 796k
ERC-55	RNC55	0.125	0.1	± 0.1, ± 0.5, ± 1	.35	200	10R - 2.0M	10R - 2.0M	10R - 2.0M
ERC-55-200	RNC60	0.25	0.125	± 0.1, ± 0.5, ± 1	.35	250	10R - 2.0M	10R - 2.0M	10R - 2.0M
ERC-65	RNC65	0.5	0.25	± 0.1, ± 0.5, ± 1	.84	300	10R - 3.01M	10R - 3.01M	10R - 3.01M
ERC-70	RNC70	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	ERC-50/ERC-55/ERC55-200 = 450; ERC-65/ERC-70 = 900
Insulation Resistance	Ω	≥ 10 <sup>11</sup> dry; ≥ 10 <sup>9</sup> after moisture test
Operating Temperature Range	°C	- 65 / + 175
Terminal Strength	lb	2lb pull test on ERC-50/ERC-55/ERC55-200/ERC-65; 4.5lb pull test on ERC-70
Solderability		Continuous satisfactory coverage when tested in accordance with MIL-STD-202, Method 208

ORDERING INFORMATION - MILITARY PART NUMBER					
RNC MIL. TYPE Per MIL-PRF-55182	55 SIZE	H CHARACTERISTIC (NON-HERMETIC)	2152 VALUE	F TOLERANCE	R FAILURE RATE %/1000 HOURS
RNC = Solderable/weldable leads RNR = Solderable only leads	50 = 0.05 watt 55 = 0.10 watt 60 = 0.25 watt 65 = 0.25 watt 70 = 0.5 watt	J = ± 25ppm/°C H = ± 50ppm/°C K = ± 100ppm/°C	First three digits are significant figures. Last digit specifies the number of zeros to follow. (21.5 kilohm illustrated.)	B = ± 0.1% D = ± 0.5% F = ± 1%	S = 0.001% R = 0.01% P = 0.1% M = 1%

**DIMENSIONS** in inches [millimeters]



\* 1.08 ± 0.125 [27.43 ± 3.18] IF TAPE AND REEL

MODEL	A	B	C (Max.)	D	E
ERC-50	0.150 ± 0.020 [3.81 ± 0.51]	0.070 ± 0.010 [1.78 ± 0.25]	.187 [4.75]	0.016 [0.41]	1.25 ± 0.266 [31.75 ± 6.76]
ERC-55	0.250 + 0.031 - 0.046 [6.35 + 0.79 - 1.17]	0.091 ± 0.009 [2.31 ± 0.23]	.300 [7.62]	0.025 [0.64]	1.50 ± 0.125 [38.1 ± 3.18]
ERC-55-200	0.280 ± 0.020 [7.11 ± 0.51]	0.094 ± 0.009 [2.39 ± 0.23]	.350 [8.89]	0.025 [0.64]	1.50 ± 0.125 [38.1 ± 3.18]
ERC-65	0.562 ± 0.031 [14.27 ± 0.79]	0.180 ± 0.015 [4.57 ± 0.38]	.687 [17.45]	0.025 [0.64]	1.50 ± 0.125 [38.1 ± 3.18]
ERC-70	0.562 ± 0.031 [14.27 ± 0.79]	0.180 ± 0.015 [4.57 ± 0.38]	.687 [17.45]	0.032 [0.81]	1.50 ± 0.125 [38.1 ± 3.18]

MATERIAL SPECIFICATIONS			
<b>Element:</b>	Vacuum-deposited nickel-chrome alloy	<b>Encapsulation:</b>	Specially formulated epoxy compound
<b>Core:</b>	Fire-cleaned high purity ceramic	<b>Termination:</b>	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.

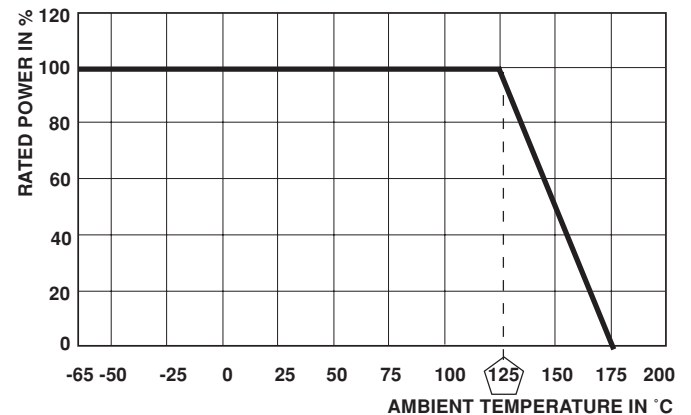
**APPLICABLE MIL-SPECIFICATIONS**

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

**MIL-PRF-10509:**  
 MIL-PRF-55182 supercedes MIL-PRF-10509 on new designs. The ERC series meets or exceeds MIL-PRF-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