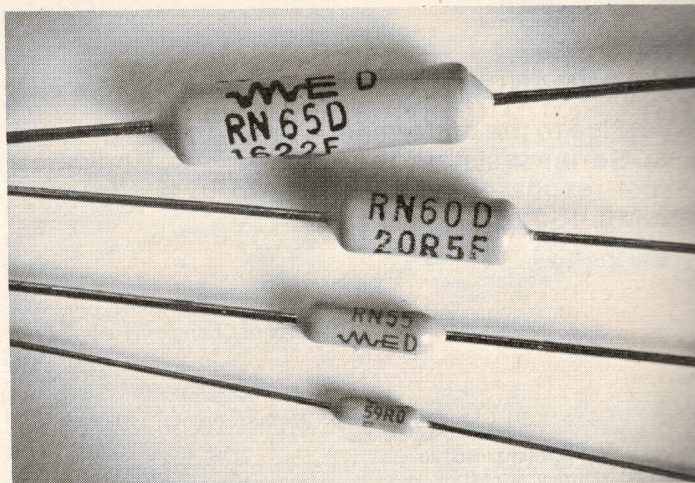


# MIL STYLE RN

## Standard Military Resistors

### Conformal-Coated (MIL-R-10509 Qualified)

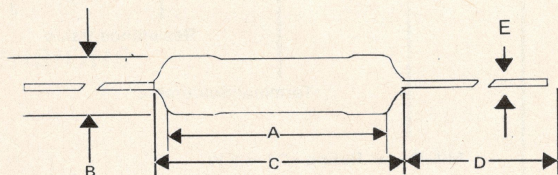
±0.1%, 0.25%, 0.5%, and 1% Tolerance  
Characteristics C (±50PPM), D (±100PPM),  
and E (±25PPM)



#### DESCRIPTION

This Series encompasses an unusually broad selection of tolerances, temperature characteristics, and power ratings, in all their combinations, with full MIL-R-10509 performance. In almost every instance, the MIL requirements are exceeded to a substantial degree. These resistors feature the low noise, high stability, and wide operating frequency range characterizing the Mepco/Electra metal-film design, in minimum size for their power ratings.

#### DIMENSIONS



#### DESIGN FEATURES

- **Excellent Initial Accuracy and Long-Term Stabilities**, approaching wirewound resistor performance.
- **Lowest Voltage and Power Coefficients** ever attained in a metal-film resistor.
- **Low Temperature Coefficients**. Characteristic E equals the performance of conventional wirewound designs.
- **Excellent Matching and Tracking**. Tolerances of 0.1%, 0.25%, 0.5% and 1% are standard. Ratio sets track closely over wide temperature ranges, long term.
- **Very Low Reactance**—low series L, low shunt C; reactance error is generally less than tolerance up to 10MHz, for most resistance values.

#### SPECIFICATIONS & NOMENCLATURE

MIL Type	Mepco-Electra P/N	Power Rating* (Watts)		Temperature Coefficient of Resistance (PPM/°C)	Qualified Resistance Range (ohms)	Mepco/Electra Resistance Range (ohms) †	Resistance Tolerance (±%)	Max Voltage	Dimensions—See Diagram Inches (mm)				
		125°C	70°C						A	B	C **	D	E
RN50	5023R	1/10		D = ±100	***	10 Ω - 499K	D = .5, F = 1	200	.150±.020 (3.81 ± 0.51)	.070±.010 (1.79 ± 0.23)	200 (5.08)	1.5 (38.1)	.016" (.41 #26)
		1/20		C = ±50	30.1 Ω - 100K	30.1 Ω - 499K	B = .1 C = .25 D = .5 F = 1	200					
				E = ±25	30.1 Ω - 100K	30.1 Ω - 200K							
RN55	5033R	1/8		D = ±100	10 Ω - 301K	1 Ω - 2M	D = .5, F = 1	250	.261 ± .020 (6.63 ± 0.51)	.093±.005 (2.36±0.13)	.300 (7.62)	1.5 (38.1)	.025" (.63 #22)
		1/10		C = ±50 E = ±25	49.9 Ω - 100K	49.9 Ω - 2M 49.9 Ω - 1M	B = .1, D = .5 C = .25, F = 1	200					
RN60	5043R	1/4		D = ±100	10 Ω - 1M	10 Ω - 2M	D = .5, F = 1	300	.390±.020 (9.91 ± 0.51)	.152 ± .009 (3.86 ± 0.23)	.430 (10.92)	1.5 (38.1)	.025" (.63 #22)
		1/8		C = ±50	49.9 Ω - 499K	30.1 Ω - 2M	B = .1 C = .25 D = .5 F = 1	250					
				E = ±25	49.9 Ω - 499K	30.1 Ω - 1M							
RN65	5053R	1/2		D = ±100	10 Ω - 2M	10 Ω - 4M	D = .5, F = 1	350	.620±.020 (15.75 ± 0.51)	.167±.010 (4.24 ± 0.26)	.650 (16.51)	1.5 (38.1)	.025" (.63 #22)
		1/4		C = ±50	49.9 Ω - 1M	49.9 Ω - 4M	B = .1, C = .25	300					
				E = ±25	49.9 Ω - 1M	49.9 Ω - 2M	D = .5, F = 1						

\*Because of efficient design, the Mepco/Electra RN series will safely support a 70°C power rating of 2x the Mil-R-10509 rating.

\*\*Clean lead to clean lead. \*\*\*Mil-R-10509 does not include a D characteristic RN50.

†Within the resistance ranges shown, resistance values indicated in the MIL 10 to 100 decade table of values (see table page 524), and their decade multiples, are available as standard. Other values are available on special order.

Lake-View Electronics Corp. 1054 Pioneer Rd. Grafton, WI Ph: 262-377-8250 Fax: 262-375-0109

www.lvelectronics.com

Email: sales@lvelectronics.com



# Standard Military Resistors Conformal-Coated (MIL-R-10509) **MIL STYLE RN**

## PERFORMANCE CHARACTERISTICS

As a guide to the performance that can be expected of RN Series resistors, the following chart indicates typical results of tests performed in accordance with MIL-R-10509.

Test	Max. % Change in Resistance	
	MIL-R-10509 (Characteristics C & E) Requirements	MEPCO/ ELECTRA RN - Series Average
Temperature Cycling, -65 to +150°C	.25%	.05%
Low temperature operation, -65*	.25%	.02%
Short time overload	.25%	.02%
Terminal strength, 5 lb load	.2%	.02%
Dielectric withstanding Voltage	.25%	.01%
Resistance to soldering heat, 350°C	.10%	.01%
Moisture resistance	.50%	.05%
Life (1,000 hours)	.50%	.10%
Shock, medium impact, 50G, 11ms.	.25%	.01%
Vibration, High frequency 10-2000Hz	.25%	.01%

## MARKING

Standard military RN Series resistors are marked with the MIL style, characteristic, resistance, and tolerance, as specified in MIL-R-10509. (See JAN Marking)

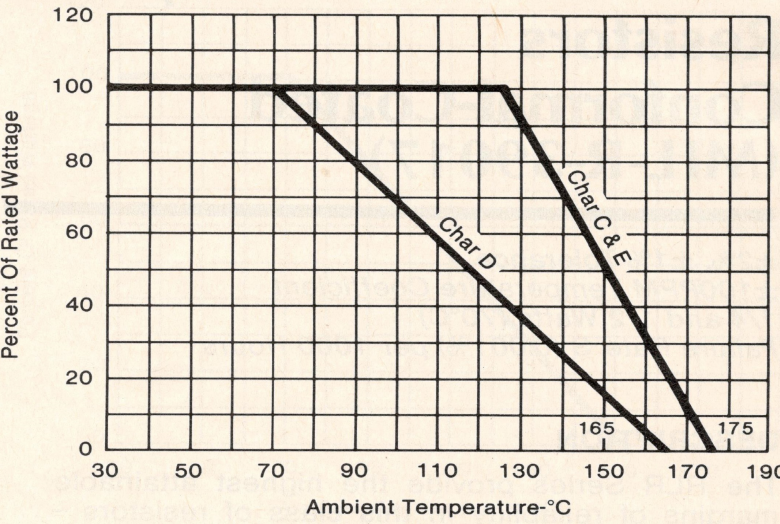
## LEAD MATERIAL

Type C, Mil-Std-1276

See table below for typical capacitance values.

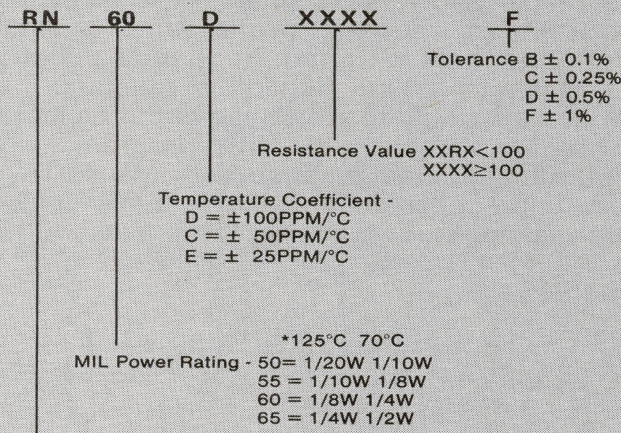
M/E Style	5023R	5033R	5043R	5053R
C (pF) ±25%	0.18	0.18	0.21	0.33
Voltage Coefficient (PPM/Volt) ±25%	6	5	3	2
Power Coefficient (°C/Watt) ±10%	220	130	93	75

## DERATING CURVE



## HOW TO SPECIFY

MIL STYLE RN Resistors can be completely specified using the following designation.



## MIL-R-10509 "J" OR "JAN" MARKING

The Defense Electronics Supply Center (D.E.S.C.) has stated that all Mil-R-10509 qualified products, manufactured after January 4, 1982 must be marked with the "J" or "JAN" marking, to prevent the sale of non-qualified product as qualified product. In order to permit usage of stock manufactured prior to January 4, 1982, parts manufactured (without the JAN marking) may be supplied until October 7, 1983.

Mil-R-10509 has limited resistance ranges (compared to Mil-R-55182). Mepco/Electra's policy is to supply products qualified to Mil-R-10509 with the JAN marking. Resistance values above or below those specified in Mil-R-10509, where Mepco/Electra testing demonstrates the capability of meeting the performance requirement of Mil-R-10509, will be marked in accordance with Mil-R-10509 but without the JAN marking.