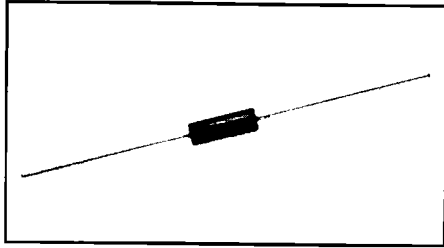


MODELS NE, NC, CT, NA Metal Film Resistors

Military, MIL-R-10509, Qualified, Type RN, Precision



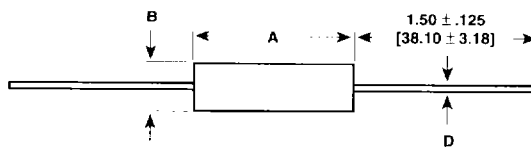
FEATURES

- Low noise and low inductance characteristics
- Blue epoxy encapsulation over moisture resistant polyimide varnish undercoat
- Special marking available
- Controlled Temperature Coefficient: ± 25 , ± 50 and ± 100 PPM/°C
- Excellent high frequency characteristics
- Low voltage coefficient
- These resistors are provided with high purity copper leads in accordance with MIL-STD-1276. Two solder finishes are available: Electroplated 60/40 solder and hot dipped 60/40 solder.

STANDARD ELECTRICAL SPECIFICATIONS

DALE® MODEL	MIL-R-10509 TYPE	WATTAGE RATING						RESISTANCE RANGE (Ohms)	STANDARD TOLERANCE	TC PPM/°C
		MILITARY			INDUSTRIAL					
		@ + 70°C	@ + 125°C	VOLTAGE RATING	@ + 70°C	@ + 125°C	VOLTAGE RATING			
NE50	RN50E	—	1/20	200	1/4	1/8	200	10 - 499k	$\pm .5\%$, $\pm 1\%$	± 25
NE55	RN55E	—	1/10	200	1/2	1/4	250	49.9 - 1M	$\pm .1\%$, $\pm .25\%$, $\pm .5\%$, $\pm 1\%$	± 25
NE60	RN60E	—	1/8	250	1	1/2	350	49.9 - 1M	$\pm .1\%$, $\pm .25\%$, $\pm .5\%$, $\pm 1\%$	± 25
NE65	RN65E	—	1/4	300	1	1/2	350	49.9 - 1M	$\pm .1\%$, $\pm .25\%$, $\pm .5\%$, $\pm 1\%$	± 25
NC50	RN50C	—	1/20	200	1/4	1/8	200	10 - 499k	$\pm .5\%$, $\pm 1\%$	± 50
NC55	RN55C	—	1/10	200	1/2	1/4	250	49.9 - 1M	$\pm .1\%$, $\pm .25\%$, $\pm .5\%$, $\pm 1\%$	± 50
NC60	RN60C	—	1/8	250	1	1/2	350	49.9 - 1M	$\pm .1\%$, $\pm .25\%$, $\pm .5\%$, $\pm 1\%$	± 50
NC65	RN65C	—	1/4	300	1	1/2	350	49.9 - 1M	$\pm .1\%$, $\pm .25\%$, $\pm .5\%$, $\pm 1\%$	± 50
CT50	—	—	—	—	1/4	1/8	200	2 - 499k	$\pm 1\%$	± 100
CT55	RN55D	1/8	—	200	1/2	1/4	300	10 - 1M	$\pm 1\%$	± 100
NA60	RN60D	1/4	—	300	1	1/2	350	10 - 1M	$\pm 1\%$	± 100
NA65	RN65D	1/2	1/4	350	1	1/2	350	49.9 - 1M 10 - 2M	$\pm .5\%$ $\pm 1\%$	± 100

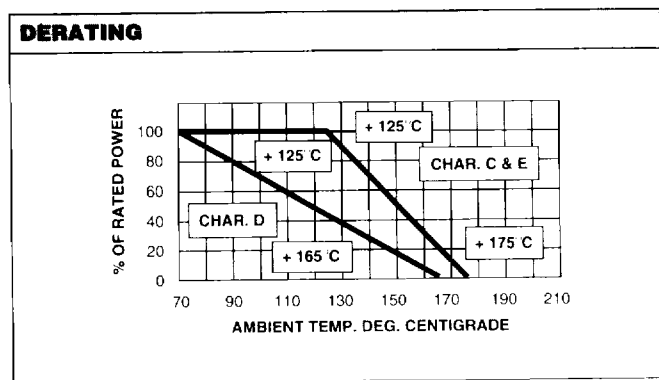
DIMENSIONAL CONFIGURATIONS [Numbers in brackets indicate millimeters]



DALE® MODEL	MIL-R-10509 TYPE	A	B	D
NE50	RN50E	.145 \pm .015 [3.68 \pm .381]	.066 \pm .008 [1.68 \pm .203]	.016 [.406]
NE55	RN55E	.245 \pm .030 [6.22 \pm .762]	.088 \pm .010 [2.24 \pm .254]	.025 [.635]
NE60	RN60E	.375 \pm .025 - .040 [9.53 \pm .635 - 1.02]	.135 \pm .020 - .005 [3.43 \pm .508 - .127]	.025 [.635]
NE65	RN65E	.560 \pm .030 [14.22 \pm .762]	.190 \pm .007 - .015 [4.83 \pm .178 - .381]	.025 [.635]
NC50	RN50C	.145 \pm .015 [3.68 \pm .381]	.066 \pm .008 [1.68 \pm .203]	.016 [.406]
NC55	RN55C	.245 \pm .030 [6.22 \pm .762]	.088 \pm .010 [2.24 \pm .254]	.025 [.635]
NC60	RN60C	.375 \pm .025 - .040 [9.53 \pm .635 - 1.02]	.135 \pm .020 - .005 [3.43 \pm .508 - .127]	.025 [.635]
NC65	RN65C	.560 \pm .030 [14.22 \pm .762]	.190 \pm .007 - .015 [4.83 \pm .178 - .381]	.025 [.635]
CT50	—	.145 \pm .015 [3.68 \pm .381]	.066 \pm .008 [1.68 \pm .203]	.016 [.406]
CT55	RN55D	.235 \pm .020 [5.97 \pm .508]	.090 \pm .008 [2.29 \pm .203]	.025 [.635]
NA60	RN60D	.355 \pm .020 [9.02 \pm .508]	.148 \pm .000 - .023 [3.76 \pm .000 - .584]	.025 [.635]
NA65	RN65D	.560 \pm .030 [14.22 \pm .762]	.190 \pm .015 [4.83 \pm .381]	.025 [.635]

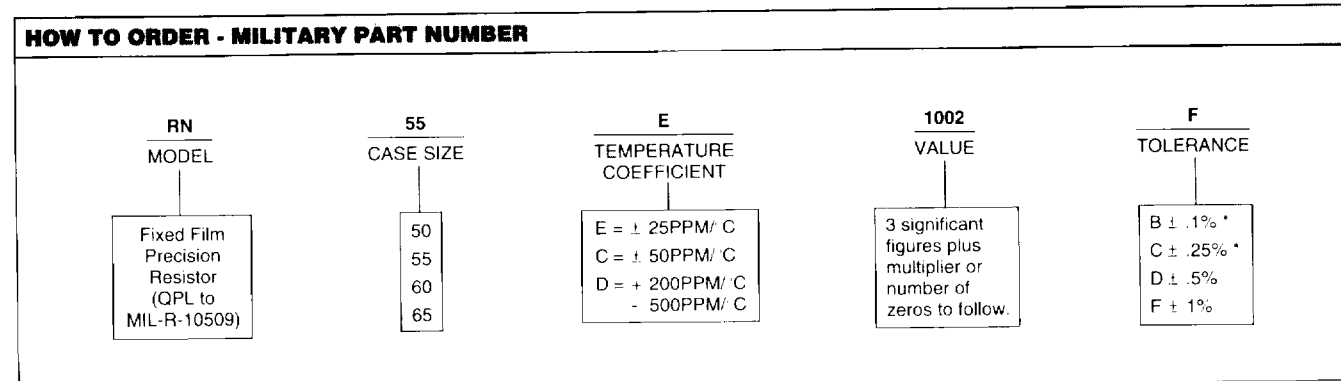
TEST	MAXIMUM ΔR											
	NE50/ RN50E	NE55/ RN55E	NE60/ RN60E	NE65/ RN65E	NC50/ RN50C	NC55/ RN55C	NC60/ RN60C	NC65/ RN65C	CT50 —	CT55/ RN55D	NA60/ RN60D	NA65/ RN65D
Thermal Shock	± 0.1%	± 0.1%	± 0.1%	± 0.1%	± 0.25%	- 0.1%	± 0.1%	± 0.1%	± 0.25%	± 0.25%	± 0.25%	± 0.25%
Short Time Overload	± 0.1%	± 0.1%	± 0.1%	± 0.1%	± 0.1%	± 0.1%	± 0.1%	± 0.1%	± 0.1%	± 0.1%	± 0.1%	± 0.1%
Low Temperature Operation	± 0.1%	± 0.1%	± 0.1%	± 0.1%	± 0.1%	± 0.1%	± 0.1%	± 0.1%	+ 0.1%	± 0.1%	± 0.1%	± 0.1%
Moisture Resistance	± 0.5%	± 0.5%	± 0.5%	± 0.5%	± 0.5%	± 0.5%	± 0.5%	± 0.5%	± 0.5%	± 0.5%	± 0.5%	± 0.5%
Shock	± 0.05%	± 0.05%	± 0.05%	± 0.05%	± 0.05%	± 0.05%	± 0.05%	± 0.05%	± 0.05%	± 0.05%	± 0.05%	± 0.05%
Vibration	± 0.05%	± 0.05%	± 0.05%	± 0.05%	± 0.05%	± 0.05%	± 0.05%	± 0.05%	± 0.05%	± 0.05%	± 0.05%	± 0.05%
Load Life (1000 hours MIL rating)	± 0.5%	± 0.5%	± 0.5%	± 0.5%	± 0.5%	± 0.5%	± 0.5%	± 0.5%	± 0.5%	± 0.5%	± 1.0%*	± 1.0%*
Terminal Strength	± 0.05%	± 0.05%	± 0.05%	± 0.05%	± 0.05%	± 0.05%	± 0.05%	± 0.05%	+ 0.05%	± 0.05%	± 0.05%	± 0.05%
Dielectric Withholding Voltage	± 0.05%	± 0.05%	± 0.05%	± 0.05%	± 0.05%	± 0.05%	± 0.05%	± 0.05%	± 0.05%	± 0.05%	± 0.05%	± 0.05%
Effect Solder Heat	± 0.1%	± 0.1%	± 0.1%	± 0.1%	± 0.1%	± 0.1%	± 0.1%	± 0.1%	± 0.1%	± 0.1%	± 0.1%	± 0.1%

* Commercial load life rating.



PART MARKING

- Dale®
- MIL designation
- Value
- Tolerance & JAN



* Available only in Characteristics C and E (± 25 and ± 50PPM/ C).

