

RNC Series—Precision Thin Film Chip Resistors

Features

- Precision tolerances to $\pm 0.01\%$
- TCR down to $\pm 5\text{ppm}/^\circ\text{C}$
- RoHS compliant / lead-free available (RNCF)
- E96 and E24 values are standard; E192 are built to order with no part marking
- Wide R-value range
- Consult factory for tighter tolerances
- 2010 and 2512 sizes now available



Electrical Specifications

Type / Code	Package Size	Power Rating (W) @ 70°C	Maximum Working Voltage*	Maximum Overload Voltage	Resistance Temperature Coefficient	Ohmic Range and Tolerance				
						0.01%	0.05%	0.1%	0.5%	1%
RNC 05	0201	0.050W	15V	30V	$\pm 25\text{ ppm}/^\circ\text{C}$ $\pm 200\text{ ppm}/^\circ\text{C}$	–	–	–	33 Ω – 22K –	– 100 Ω – 1M
RNC 10	0402	0.063W	50V	100V	$\pm 5\text{ ppm}/^\circ\text{C}$ $\pm 10\text{ ppm}/^\circ\text{C}$ $\pm 25\text{ ppm}/^\circ\text{C}$ $\pm 50\text{ ppm}/^\circ\text{C}$	49.9 Ω – 3K 49.9 Ω – 12K – –	49.9 Ω – 3K 49.9 Ω – 12K – –	49.9 Ω – 3K 49.9 Ω – 12K 10 Ω – 200K 10 Ω – 200K	100 Ω – 3K 47 Ω – 100K 10 Ω – 200K 10 Ω – 200K	–
RNC 16	0603	0.100W	75V	150V	$\pm 5\text{ ppm}/^\circ\text{C}$ $\pm 10\text{ ppm}/^\circ\text{C}$ $\pm 25\text{ ppm}/^\circ\text{C}$ $\pm 50\text{ ppm}/^\circ\text{C}$	25 Ω – 15K 25 Ω – 100K – –	25 Ω – 15K 25 Ω – 100K 4.7 Ω – 150K 4.7 Ω – 150K	25 Ω – 15K 4.7 Ω – 332K 4.7 Ω – 1M 4.7 Ω – 1M	– – 2 Ω – 1M 2 Ω – 1M	–
RNC 20	0805	0.125W	100V	200V	$\pm 5\text{ ppm}/^\circ\text{C}$ $\pm 10\text{ ppm}/^\circ\text{C}$ $\pm 25\text{ ppm}/^\circ\text{C}$ $\pm 50\text{ ppm}/^\circ\text{C}$	25 Ω – 30K 25 Ω – 200K – –	25 Ω – 30K 4.7 Ω – 500K 4.7 Ω – 500K 4.7 Ω – 500K	25 Ω – 30K 4.7 Ω – 500K 4.7 Ω – 2M 4.7 Ω – 2M	– – 1 Ω – 2M 1 Ω – 2M	–
RNC 32	1206	0.250W	150V	300V	$\pm 5\text{ ppm}/^\circ\text{C}$ $\pm 10\text{ ppm}/^\circ\text{C}$ $\pm 25\text{ ppm}/^\circ\text{C}$ $\pm 50\text{ ppm}/^\circ\text{C}$	25 Ω – 50K 25 Ω – 500K – –	25 Ω – 50K 25 Ω – 500K 4.7 Ω – 1M 4.7 Ω – 1M	25 Ω – 50K 4.7 Ω – 1M 4.7 Ω – 2.5M 4.7 Ω – 2.5M	– – 1 Ω – 2.5M 1 Ω – 2.5M	–
RNC 50	1210	0.250W	200V	400V	$\pm 25\text{ ppm}/^\circ\text{C}$ $\pm 50\text{ ppm}/^\circ\text{C}$	–	–	51 Ω – 2M 10 Ω – 49.9 Ω	51 Ω – 2M 10 Ω – 49.9 Ω	–
RNC 57	2010	0.500W	200V	400V	$\pm 5\text{ ppm}/^\circ\text{C}$ $\pm 10\text{ ppm}/^\circ\text{C}$ $\pm 25\text{ ppm}/^\circ\text{C}$ $\pm 50\text{ ppm}/^\circ\text{C}$	25 Ω – 100K 25 Ω – 500K – –	25 Ω – 100K 25 Ω – 500K 4.7 Ω – 1M 4.7 Ω – 1M	25 Ω – 100K 4.7 Ω – 1M 4.7 Ω – 3M 4.7 Ω – 3M	– – 1 Ω – 3M 1 Ω – 3M	–
RNC 63	2512	1.000W	200V	400V	$\pm 5\text{ ppm}/^\circ\text{C}$ $\pm 10\text{ ppm}/^\circ\text{C}$ $\pm 25\text{ ppm}/^\circ\text{C}$ $\pm 50\text{ ppm}/^\circ\text{C}$	25 Ω – 100K 25 Ω – 500K – –	25 Ω – 100K 25 Ω – 500K 4.7 Ω – 1M 4.7 Ω – 1M	25 Ω – 100K 4.7 Ω – 1M 4.7 Ω – 3M 4.7 Ω – 3M	– – 1 Ω – 3M 1 Ω – 3M	–

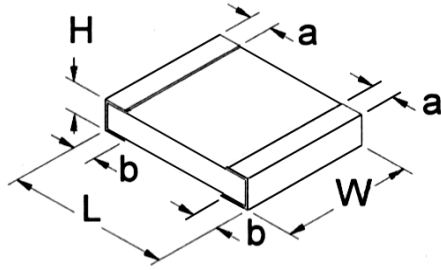
* Lesser of $\sqrt{\text{PR}}$ or maximum working voltage.

How to Order

RNC		20			T9		4.75K		0.5%		R			
SEI Type		Code			TCR		Nominal Resistance		Tolerance		Packaging			
SEI Type	Description	Code	Wattage	Size	TCR		Tolerance		Values		SEI Types	Pkg Qty	Code	Description
RNC	Standard	05	0.050W	0201	T1 = 100ppm		0.01%		E192*, E96,E24		5, 10	10,000	R	7" reel
RNCF	RoHS	10	0.063W	0402	T2 = 50ppm		0.05%		E192*, E96,E24		20, 32	5,000	R	
		16	0.100W	0603	T9 = 25ppm		0.10%		E192*, E96,E24			1,000	I	
		20	0.125W	0805	TB = 10ppm		0.50%		E192*, E96,E24		50	5,000	R	
		32	0.250W	1206	TA = 5ppm		1.00%		E96,E24		57, 63	4,000	R	
		50	0.250W	1210								1,000	I	
		57	0.500W	2010										
		63	1.000W	2512										

*non-standard

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Mechanical Specifications

Type / Code	L Body Length	W Body Width	H Body Height	a Top Termination	b Bottom Termination	Units
RNC 05	0.024 ± 0.002 0.60 ± 0.05	0.012 ± 0.002 0.30 ± 0.05	0.009 ± 0.001 0.23 ± 0.030	0.005 ± 0.002 0.12 ± 0.05	0.005 ± 0.002 0.12 ± 0.05	inches mm
RNC 10	0.039 ± 0.002 1.00 ± 0.05	0.020 ± 0.002 0.50 ± 0.05	0.014 ± 0.002 0.35 ± 0.05	0.008 ± 0.004 0.20 ± 0.10	0.010 ± 0.002 0.25 ± 0.10	inches mm
RNC 16	0.063 ± 0.008 1.60 ± 0.20	0.032 ± 0.008 0.80 ± 0.20	0.016 ± 0.004 0.40 ± 0.10	0.012 ± 0.008 0.30 ± 0.20	0.012 ± 0.008 0.30 ± 0.20	inches mm
RNC 20	0.079 ± 0.008 2.00 ± 0.20	0.049 ± 0.008 1.25 ± 0.20	0.016 ± 0.004 0.40 ± 0.10	0.016 ± 0.008 0.40 ± 0.20	0.016 ± 0.008 0.40 ± 0.20	inches mm
RNC 32	0.126 ± 0.008 3.20 ± 0.20	0.063 ± 0.008 1.60 ± 0.20	0.020 ± 0.004 0.50 ± 0.10	0.020 ± 0.012 0.50 ± 0.30	0.016 ± 0.008 0.40 ± 0.20	inches mm
RNC 50	0.126 ± 0.008 3.20 ± 0.20	0.100 ± 0.008 2.50 ± 0.20	0.024 ± 0.008 0.60 ± 0.20	0.020 ± 0.012 0.50 ± 0.30	0.016 ± 0.008 0.40 ± 0.20	inches mm
RNC 57	0.193 ± 0.006 4.90 ± 0.15	0.09 ± 0.006 2.40 ± 0.15	0.024 ± 0.004 0.60 ± 0.10	0.024 ± 0.012 0.60 ± 0.30	0.020 ± 0.010 0.50 ± 0.25	inches mm
RNC 63	0.246 ± 0.006 6.30 ± 0.15	0.122 ± 0.006 3.10 ± 0.15	0.024 ± 0.004 0.60 ± 0.10	0.024 ± 0.012 0.60 ± 0.30	0.020 ± 0.010 0.50 ± 0.25	inches mm

Performance Characteristics (JIS C 5202)

Test	Specification	Typical
Moisture Resistance, Thermal Shock	±(0.25% +0.05Ω)	≤0.1%
Load Life	±(0.5% +0.05Ω)	≤0.2%
Load Life in Moisture	±(0.5% +0.05Ω)	≤0.25%
Resistance to Soldering Heat	±(0.25% +0.05Ω)	≤0.05%
Solderability	min 95% coverage	≥0.95%
Terminal Strength	±(0.2% +0.05Ω)	≤0.05%
Dielectric Withstanding Voltage	±(0.25% +0.05Ω)	≤0.05%
Short Time Overload	±(0.25% +0.05Ω)	≤0.05%
Insulation Resistance	1MΩ minimum	≥1MΩ