

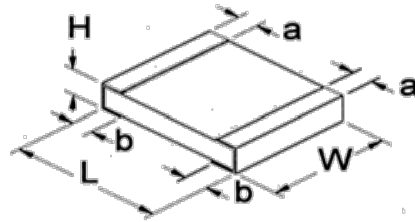
- Features:
- Precision tolerances to $\pm 0.01\%$
 - TCR down to $\pm 5\text{ppm}/^\circ\text{C}$
 - Wide R-value range
 - Consult factory for tighter tolerances
 - 2010 and 2512 sizes now available
 - RoHS compliant



Electrical Specifications											
Type / Code	Old Pkg Code	Power Rating (Watts) @ 70°C	Maximum Working Voltage(1)	Maximum Overload Voltage	Resistance Temperature Coefficient	Ohmic Range (Ω) and Tolerance					
						0.01%	0.05%	0.1%	0.25%	0.5%	1%
RNCF0201	05	0.032W (0.05W(2))	15V	30V	$\pm 25\text{ ppm}/^\circ\text{C}$ $\pm 50/100\text{ ppm}/^\circ\text{C}$	-	-	-	-	49.9 - 5K 49.9 - 33K	49.9 - 5K 49.9 - 33K
RNCF0402	10	0.063W	25V	50V	$\pm 5\text{ ppm}/^\circ\text{C}$	49.9 - 5K	49.9 - 5K	49.9 - 5K	-	-	-
					$\pm 10\text{ ppm}/^\circ\text{C}$	49.9 - 12K	49.9 - 12K	10 - 100K	10 - 100K	10 - 100K	10 - 100K
RNCF0603	16	0.063W (0.1W(2))	50V	100V	$\pm 15\text{ ppm}/^\circ\text{C}$	49.9 - 12K	-	49.9 - 70K	-	-	-
					$\pm 25\text{ ppm}/^\circ\text{C}$	-	-	10 - 205K	10 - 205K	10 - 205K	10 - 205K
					$\pm 50/100\text{ ppm}/^\circ\text{C}$	-	-	10 - 205K	10 - 205K	1 - 205K	1 - 205K
					$\pm 5\text{ ppm}/^\circ\text{C}$	24.9 - 15K	24.9 - 15K	24.9 - 15K	-	-	-
RNCF0805	20	0.1W (0.125W(2))	100V	200V	$\pm 10\text{ ppm}/^\circ\text{C}$	24.9 - 100K	4.7 - 332K	4.7 - 390K	10 - 390K	10 - 390K	10 - 390K
					$\pm 15\text{ ppm}/^\circ\text{C}$	24.9 - 100K	-	4.7 - 332K	-	-	-
					$\pm 25\text{ ppm}/^\circ\text{C}$	-	4.7 - 332K	4.7 - 1M	2 - 1M	2 - 1M	2 - 1M
					$\pm 50/100\text{ ppm}/^\circ\text{C}$	-	4.7 - 332K	4.7 - 1M	2 - 1M	1 - 1M	1 - 1M
RNCF1206	32	0.125W (0.25W(2))	150V	300V	$\pm 5\text{ ppm}/^\circ\text{C}$	24.9 - 30K	24.9 - 30K	24.9 - 30K	-	-	-
					$\pm 10\text{ ppm}/^\circ\text{C}$	24.9 - 200K	4.7 - 511K	4.7 - 800K	10 - 800K	10 - 800K	10 - 800K
					$\pm 15\text{ ppm}/^\circ\text{C}$	24.9 - 200K	-	4.7 - 511K	-	-	-
					$\pm 25\text{ ppm}/^\circ\text{C}$	-	4.7 - 511K	4.7 - 2M	1 - 2M	1 - 2M	1 - 2M
RNCF1210	50	0.2W (0.25W(2))	150V	300V	$\pm 50/100\text{ ppm}/^\circ\text{C}$	-	4.7 - 511K	4.7 - 2M	1 - 2M	1 - 2M	1 - 2M
					$\pm 5\text{ ppm}/^\circ\text{C}$	24.9 - 50K	24.9 - 50K	24.9 - 50K	-	-	-
					$\pm 10\text{ ppm}/^\circ\text{C}$	24.9 - 500K	4.7 - 1M	4.7 - 1M	10 - 1M	10 - 1M	10 - 1M
					$\pm 15\text{ ppm}/^\circ\text{C}$	24.9 - 500K	-	4.7 - 1M	-	-	-
RNCF2010	57	0.25W (0.5W(2))	150V	300V	$\pm 25\text{ ppm}/^\circ\text{C}$	-	4.7 - 1M	4.7 - 2.5M	1 - 2.5M	1 - 2.5M	1 - 2.5M
					$\pm 50/100\text{ ppm}/^\circ\text{C}$	-	4.7 - 1M	4.7 - 2.5M	1 - 2.5M	1 - 2.5M	1 - 2.5M
					$\pm 5\text{ ppm}/^\circ\text{C}$	24.9 - 50K	24.9 - 50K	24.9 - 50K	-	-	-
					$\pm 10\text{ ppm}/^\circ\text{C}$	24.9 - 500K	4.7 - 1M	4.7 - 1M	-	-	-
RNCF2512	63	0.5W (1W(2))	150V	300V	$\pm 15\text{ ppm}/^\circ\text{C}$	24.9 - 500K	-	4.7 - 1M	-	-	-
					$\pm 25\text{ ppm}/^\circ\text{C}$	-	4.7 - 1M	4.7 - 3M	1 - 3M	1 - 3M	1 - 3M
					$\pm 50/100\text{ ppm}/^\circ\text{C}$	-	4.7 - 1M	4.7 - 3M	1 - 3M	1 - 3M	1 - 3M
					$\pm 5\text{ ppm}/^\circ\text{C}$	24.9 - 100K	24.9 - 100K	24.9 - 100K	-	-	-
RNCF2512	63	0.5W (1W(2))	150V	300V	$\pm 10\text{ ppm}/^\circ\text{C}$	24.9 - 500K	4.7 - 1M	4.7 - 1M	-	-	-
					$\pm 15\text{ ppm}/^\circ\text{C}$	24.9 - 500K	-	4.7 - 1M	-	-	-
					$\pm 25\text{ ppm}/^\circ\text{C}$	-	4.7 - 1M	4.7 - 3M	1 - 3M	1 - 3M	1 - 3M
					$\pm 50/100\text{ ppm}/^\circ\text{C}$	-	4.7 - 1M	4.7 - 3M	1 - 3M	1 - 3M	1 - 3M

(1) Lesser of $\sqrt{\text{PR}}$ or maximum working voltage.

(2) Higher power rating for each package size is valid if ambient temp $\leq 80^\circ\text{C}$ and terminal temp $\leq 105^\circ\text{C}$



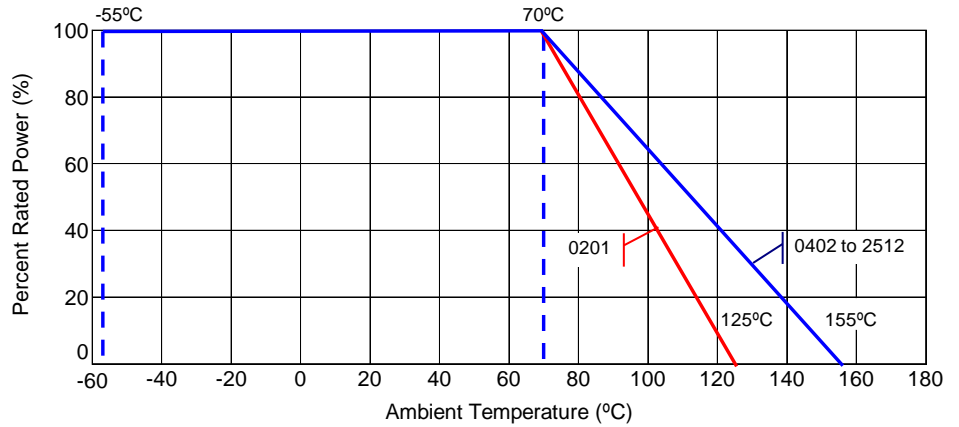
Mechanical Specifications						
Type / Code	L Body Length	W Body Width	H Body Height	a Top Termination	b Bottom Termination	Unit
RNCF0201	0.024 ± 0.002	0.012 ± 0.002	0.009 ± 0.001	0.005 ± 0.002	0.005 ± 0.002	inches
	0.60 ± 0.05	0.30 ± 0.05	0.23 ± 0.03	0.12 ± 0.05	0.12 ± 0.05	mm
RNCF0402	0.039 ± 0.002	0.020 ± 0.002	0.014 ± 0.002	0.008 ± 0.004	0.010 ± 0.004	inches
	1.00 ± 0.05	0.50 ± 0.05	0.35 ± 0.05	0.20 ± 0.10	0.25 ± 0.10	mm
RNCF0603	0.063 ± 0.008	0.031 ± 0.008	0.016 ± 0.006	0.012 ± 0.008	0.012 ± 0.008	inches
	1.60 ± 0.20	0.80 ± 0.20	0.40 ± 0.15	0.30 ± 0.20	0.30 ± 0.20	mm
RNCF0805	0.079 ± 0.008	0.049 ± 0.008	0.020 ± 0.006	0.016 ± 0.008	0.016 ± 0.008	inches
	2.00 ± 0.20	1.25 ± 0.20	0.50 ± 0.15	0.40 ± 0.20	0.40 ± 0.20	mm
RNCF1206	0.126 ± 0.008	0.063 ± 0.008	0.020 ± 0.006	0.020 ± 0.012	0.016 ± 0.008	inches
	3.20 ± 0.20	1.60 ± 0.20	0.50 ± 0.15	0.50 ± 0.30	0.40 ± 0.20	mm
RNCF1210	0.122 ± 0.008	0.094 ± 0.006	0.024 ± 0.004	0.020 ± 0.012	0.016 ± 0.008	inches
	3.10 ± 0.20	2.40 ± 0.15	0.60 ± 0.10	0.50 ± 0.30	0.40 ± 0.20	mm
RNCF2010	0.193 ± 0.006	0.094 ± 0.006	0.024 ± 0.004	0.024 ± 0.012	0.020 ± 0.010	inches
	4.90 ± 0.15	2.40 ± 0.15	0.60 ± 0.10	0.60 ± 0.30	0.50 ± 0.25	mm
RNCF2512	0.248 ± 0.006	0.122 ± 0.006	0.024 ± 0.004	0.024 ± 0.012	0.020 ± 0.010	inches
	6.30 ± 0.15	3.10 ± 0.15	0.60 ± 0.10	0.60 ± 0.30	0.50 ± 0.25	mm

Performance Characteristics					
Test	Specification	Specification for Tolerances = 0.01%	Specification for Tolerances = 0.05%	Typical for Tolerances ≥ 0.1%	Test Method
Moisture Resistance, Thermal Shock	ΔR±0.25%	ΔR±0.01%	ΔR±0.05%	≤0.1%	-55°C - 150°C, 100 cycles
Load Life	ΔR±0.2%	ΔR±0.01%	ΔR±0.05%	≤0.2%	70±2°C, Maximum working voltage for 1000 hrs with 1.5 hrs ON and 0.5 hrs OFF
	>7KΩ ΔR ± 0.5% ΔR±0.5% for high power rating				
Load Life in Moisture	ΔR±0.3%	ΔR±0.01%	ΔR±0.05%	≤0.25%	40±2°C, 90-95% RH Maximum working voltage for 1000 hrs with 1.5 hrs ON and 0.5 hrs OFF
	ΔR±0.5% for high power rating				
Resistance to Soldering Heat	ΔR±0.2%	ΔR±0.01%	ΔR±0.05%	≤0.05%	260±5°C for 10 seconds
Solderability	Min 95% coverage			≥95%	245±5°C for 3 seconds
Bending Strength	ΔR±0.2%	ΔR±0.01%	ΔR±0.05%	≤0.05%	Bending amplitude 3mm for 10 seconds
Dielectric Withstanding Voltage	by type			≤0.05%	Maximum overload voltage for 1 minute
Short Time Overload	ΔR±0.2%	ΔR±0.01%	ΔR±0.05%	≤0.05%	RCWV*2.5 or Maximum overload voltage for 5 seconds
Insulation Resistance	>1GΩ			≥1GΩ	Apply 100V _{DC} for 1 minute
Low Temperature Operation	ΔR±0.2%	ΔR±0.01%	ΔR±0.05%		1 hour, -65°C, followed by 45 minutes of RCWV
	ΔR±0.5% for high power rating				

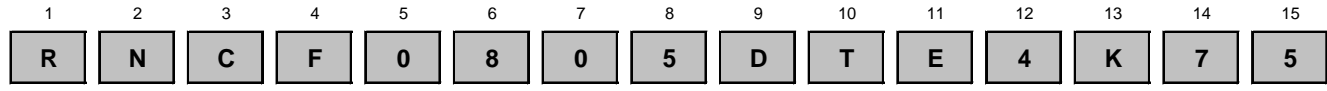
Operating Temperature Range: -55°C to +125°C (0201); -55°C to +155°C (0402 to 2512)

Reference Standards: MIL-STD-202, JIS-C 5201-1

Power Derating Curve:



How to Order



Product Series		Size	Power	Tolerance			Packaging				TCR		Resistance Value (2)
RNCF	Precision Thin Film Chip Resistors	0201	0.032W	Code	Tol	Value (1)	Code	Description	Size	Quantity	Code	ppm	Four characters with the multiplier used as the decimal holder. 24.9 ohm = 24R9 10 Kohm = 10K0 1 Mohm = 1M00
		0402	0.063W	T	0.01%	E192, E96, E24	T	7" Reel Paper Tape	0201, 0402	10,000	Y	5	
		0603	0.063W	A	0.05%				0603, 0805	5,000	T	10	
		0805	0.1W	B	0.1%				1206, 1210	4,000	S	15	
		1206	0.125W	C	0.25%				2010, 2512	1,000	E	25	
		1210	0.2W	D	0.5%	E96, E24	K	7" Reel Paper Tape	All Sizes	1,000	C	50	
		2010	0.25W	F	1%						D	100	
		2512	0.5W										

(1) E192 values are not marked, and may be subject to 20Kpc MOQ
(2) Values below 10 ohm and above 1 Mohm may be subject to 20Kpc MOQ

Legacy Part Number (before January 3, 2011):

SEI Type		Code			TCR	Nominal Resistance (2)	Tolerance	Packaging					
RNCF		20			T9	4.75K	0.5%	R					
Type	Description	Code	Wattage	Size	TCR	ToI		Values (1)		SEI Types	Pkg Qty	Code	Description
RNCF	Precision Thin Film Chip Resistor	05	0.032W	0201	T1	100ppm	E192, E96, E24			0201, 0402	10,000	R	7" reel paper tape
		10	0.063W	0402	T2	50ppm				0603, 0805, 1206, 1210	5,000	R	
		16	0.063W	0603	T9	25ppm				2010, 2512	4,000	R	
		20	0.1W	0805	TD	15ppm				All Sizes	1,000	I	
		32	0.125W	1206	TB	10ppm							
		50	0.2W	1210	TA	5ppm							
		57	0.25W	2010									
		63	0.5W	2512									

(1) E192 values are not marked, and may be subject to 20Kpc MOQ
(2) Values below 10 ohm and above 1 Mohm may be subject to 20Kpc MOQ