

RNCS Series — Anti-Corrosive Tantalum Nitride Replacement *SEI*

Features

- Special passivation for moisture sensitive applications
- Absolute TCR's to ± 25 ppm/ $^{\circ}$ C
- Available in industry standard sizes from 0402 to 2512
- Resistance range from 10 Ω to 1M Ω
- Test proven immunity to humidity and moisture corrosion
- Absolute tolerances to 0.1%
- Ideal replacement for costly Tantalum Nitride resistors
- RoHS compliant / lead-free



The RNCS series employs a special manufacturing process to ensure high precision, ultra stable performance, and long life in the harshest environments. In moisture comparison testing the RNCS series outperformed Nichrome Chip Resistors and demonstrated the anti-corrosive claims characterized by Tantalum Nitride resistor products.

Electrical Specifications

Type / Code	Package Size	Power Rating (Watts) @ 70 $^{\circ}$ C	Maximum Working Voltage*	Maximum Overload Voltage	Resistance Temperature Coefficient	Resistance Range	Resistance Tolerance
RNCS 10	0402	0.063W	25V	50V	± 50 ppm/ $^{\circ}$ C ± 25 ppm/ $^{\circ}$ C	25 Ω – 25K Ω	$\pm 0.10\%$ $\pm 0.25\%$ $\pm 0.50\%$
RNCS 16	0603	0.063W (0.100W**)	50V	100V	± 50 ppm/ $^{\circ}$ C ± 25 ppm/ $^{\circ}$ C	25 Ω – 332K Ω	$\pm 0.10\%$ $\pm 0.25\%$ $\pm 0.50\%$
RNCS 20	0805	0.100W (0.125W**)	100V	200V	± 50 ppm/ $^{\circ}$ C ± 25 ppm/ $^{\circ}$ C	10 Ω – 800K Ω	$\pm 0.10\%$ $\pm 0.25\%$ $\pm 0.50\%$
RNCS 32	1206	0.125W (0.250W**)	150V	300V	± 50 ppm/ $^{\circ}$ C ± 25 ppm/ $^{\circ}$ C	10 Ω – 1M Ω	$\pm 0.10\%$ $\pm 0.25\%$ $\pm 0.50\%$
RNCS 57	2010	0.250W (0.500W**)	150V	300V	± 50 ppm/ $^{\circ}$ C ± 25 ppm/ $^{\circ}$ C	10 Ω – 1M Ω	$\pm 0.10\%$ $\pm 0.25\%$ $\pm 0.50\%$
RNCS 63	2512	0.500W (1.000W**)	150V	300V	± 50 ppm/ $^{\circ}$ C ± 25 ppm/ $^{\circ}$ C	10 Ω – 1M Ω	$\pm 0.10\%$ $\pm 0.25\%$ $\pm 0.50\%$

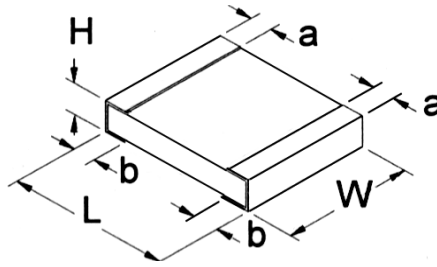
* Lesser of \sqrt{PR} or maximum working voltage.

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

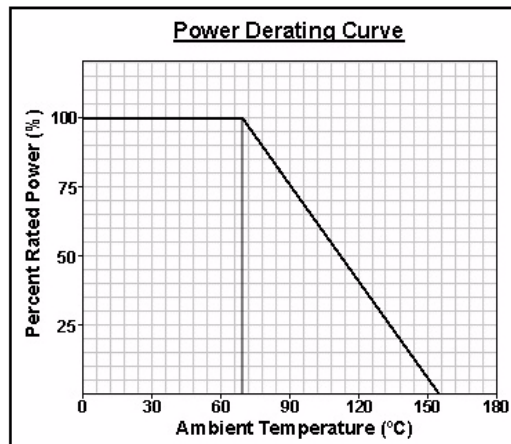
How to Order

RNCS		20		T9		4.75K		0.5%		R			
SEI Type		Code		TCR		Nominal Resistance		Tolerance		Packaging			
Type	Description	Code	Wattage	Size	TCR		Tolerance	Values	SEI Types	Pkg Qty	Code	Description	
RNCS	Anti-corrosive Titanium-Nitride Replacement	10	0.063W	0402	T2 = 50ppm T9 = 25ppm		$\pm 0.10\%$	E96,E24	10	10,000	R	7" reel	
		16	0.100W	0603			$\pm 0.25\%$	E96,E24	16, 20, 32	5,000	R		
		20	0.125W	0805			$\pm 0.50\%$	E96,E24		1,000	I		
		32	0.250W	1206					57, 63	4,000	R		
		57	0.500W	2010						1,000	I		
		63	1.000W	2512									

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Mechanical Specifications						
Type / Code	L Body Length	W Body Width	H Body Height	a Top Termination	b Bottom Termination	Units
RNCS 10	0.039 ± 0.002 1.00 ± 0.05	0.020 ± 0.002 0.50 ± 0.05	0.012 ± 0.002 0.30 ± 0.05	0.008 ± 0.004 0.20 ± 0.10	0.008 ± 0.002 0.20 ± 0.10	inches mm
RNCS 16	0.061 ± 0.008 1.55 ± 0.20	0.032 ± 0.008 0.80 ± 0.20	0.018 ± 0.004 0.45 ± 0.10	0.012 ± 0.008 0.30 ± 0.20	0.012 ± 0.008 0.30 ± 0.20	inches mm
RNCS 20	0.079 ± 0.008 2.00 ± 0.20	0.049 ± 0.008 1.25 ± 0.20	0.022 ± 0.004 0.55 ± 0.10	0.012 ± 0.008 0.30 ± 0.20	0.016 ± 0.008 0.40 ± 0.20	inches mm
RNCS 32	0.120 ± 0.008 3.05 ± 0.20	0.061 ± 0.008 1.55 ± 0.20	0.022 ± 0.004 0.55 ± 0.10	0.017 ± 0.012 0.42 ± 0.30	0.014 ± 0.008 0.35 ± 0.20	inches mm
RNCS 57	0.193 ± 0.006 4.90 ± 0.15	0.090 ± 0.006 2.40 ± 0.15	0.022 ± 0.004 0.55 ± 0.10	0.024 ± 0.012 0.60 ± 0.30	0.020 ± 0.010 0.50 ± 0.25	inches mm
RNCS 63	0.246 ± 0.006 6.30 ± 0.15	0.122 ± 0.006 3.10 ± 0.15	0.022 ± 0.004 0.55 ± 0.10	0.024 ± 0.012 0.60 ± 0.30	0.020 ± 0.010 0.50 ± 0.25	inches mm



Performance Characteristics			
Test	Test Conditions	Test Results	
		Size 0603 / 0805 / 1206 / 2012 / 2512	Size 0402
Short Time Overload	RCWV * 2.5 or Max Overloading Voltage, 2 seconds	≤±0.02%	≤±0.1%
Thermal Shock	MIL - STD - 202F Method 107G -55°C - 125°C, 100 Cycles	≤±0.02%	≤±0.1%
Load Life	MIL - STD - 202F Method 108A RCWV, 70°C, 1.5 hours ON, 0.5 hours OFF, total 1000 - 1048 hours	≤±0.05%	≤±0.25%
Humidity (Steady State)	MIL - STD - 202F Method 103B 40°C, 90-95% RH, RCWV 1.5 hours ON, 0.5 hours OFF, total 1000 -1048 hours	≤±0.1%	≤±0.5%
Resistance to Dry Heat	JIS - C 5202 - 7.2 1000 hours @ +125°C without load	≤±0.05%	≤±0.5%
Resistance to Soldering Heat	MIL - STD - 202F Method 210E 260 ± 5°C, 10 ± 1 second	≤±0.02%	≤±0.1%

*Storage Temperature : 25 ± 3°C; Humidity <80%RH