RNCS Series — Anti-Corrosive Tantalum Nitride Replacement

SEI

Features

- Special passivation for moisture sensitive applications
- Absolute TCR's to ±25 ppm/°C
- Available in industry standard sizes from 0402 to 2512
- Resistance range from 10Ω to 1MΩ
- 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°C	Maximum Working Voltage*	Maximum Overload Voltage	Resistance Temperature Coefficient	Resistance Range	Resistance Tolerance
RNCS 10	0402	0.063W	25V	50V	±50 ppm/°C ±25 ppm/°C	25Ω – 25KΩ	±0.10% ±0.25% ±0.50%
RNCS 16	0603	0.063W (0.100W**)	50V	100V	±50 ppm/°C ±25 ppm/°C	25Ω – 332KΩ	±0.10% ±0.25% ±0.50%
RNCS 20	0805	0.100W (0.125W**)	100V	200V	±50 ppm/°C ±25 ppm/°C	10Ω – 800KΩ	±0.10% ±0.25% ±0.50%
RNCS 32	1206	0.125W (0.250W**)	150V	300V	±50 ppm/°C ±25 ppm/°C	10Ω – 1MΩ	±0.10% ±0.25% ±0.50%
RNCS 57	2010	0.250W (0.500W**)	150V	300V	±50 ppm/°C ±25 ppm/°C	10Ω – 1MΩ	±0.10% ±0.25% ±0.50%
RNCS 63	2512	0.500W (1.000W**)	150V	300V	±50 ppm/°C ±25 ppm/°C	10Ω – 1MΩ	±0.10% ±0.25% ±0.50%

* Lesser of √PR or maximum working voltage.

** Higher power rating for each package size is valid if ambient temp <= 80°C and terminal temp <= 105°C.

How to Order

RNCS	20	T9	4.75K	0.5%	R
SEI Type	Code	TCR	Nominal Resistance	Tolerance	Packaging

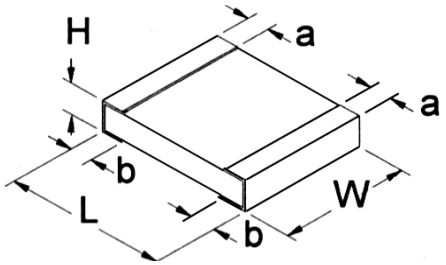
Type	Description
RNCS	Anti-corrosive Titanium-Nitride Replacement

Code	Wattage	Size
10	0.063W	0402
16	0.100W	0603
20	0.125W	0805
32	0.250W	1206
57	0.500W	2010
63	1.000W	2512

TCR
T2 = 50ppm
T9 = 25ppm

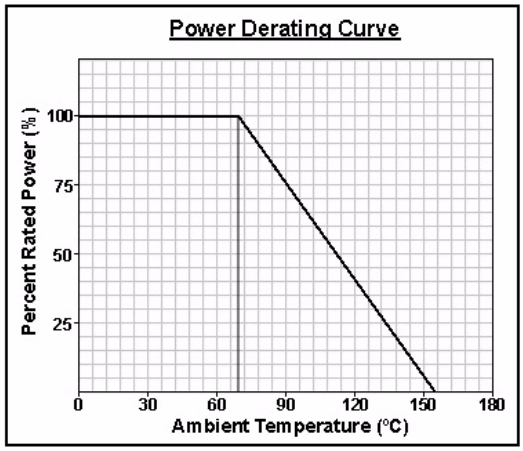
Tolerance	Values
±0.10%	E96,E24
±0.25%	E96,E24
±0.50%	E96,E24

SEI Types	Pkg Qty	Code	Description
10	10,000	R	7" reel
16, 20, 32	5,000	R	
	1,000	I	
57, 63	4,000	R	
	1,000	I	



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