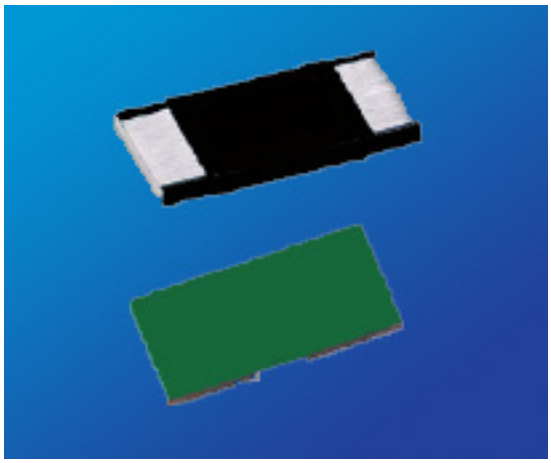
Resistor Metal Element Current Sense SMT
RNC Series



Key Features

- Resistances from 0.5 mOhms to 15 mOhms
- Resistance Tolerances to ± 1%
- Customized Resistance available
- Power Rating up to 3 Watts
- TCR's to ± 50 ppm/ ºC
- Available in sizes 1206 / 2010 / 2512

Applications

- Engine Sensors
- Surge Protection
- Data Recorders
- Temperature Sensors

Product Summary

PRODUCT SERIES (RNC)	PACKAGE SIZE	POWER RATING (W) at 80ºC	RESISTANCES (mΩ)	TCR (ppm/ºC)	TOLERANCES	TEMPERATURE RANGE
RNC18A	1206	1	0.5 - 10	± 50 ± 200 (0.5 mΩ)	1% 3% 5%	-55ºC to +170ºC
RNC19B	2010	1.5	0.5 - 10	± 50 ± 100 (0.5 mΩ)		
RNC20A [1]	2512	1	0.5, 0.75, 1, 1.5, 2, 11, 12, 13, 14, 15	± 50		
			6, 6.5, 7	± 75		
			4, 5, 10	± 100		
			2.5, 3	± 150		
RNC20C [2]	2512	2	0.5, 0.75, 1, 1.5, 2, 6.5, 7, 8, 9, 10	± 50		
			6, 6.5, 7	± 75		
			4, 5, 10	± 100		
			2.5, 3	± 150		
RNC20D [3]	2512	2.5	4, 4.5, 5, 6	± 50		
RNC20E [3]	2512	3	0.5, 0.75	± 100		
			1, 1.5, 2, 2.5, 3, 3.5	± 50		

Maximum Operating Voltage = $\sqrt{Power \times Resistance}$

[1] 11, 12, 13, 14, 15 mΩ - coating is green
[2] 6.5, 7, 8, 9, 10 mΩ at 50ppm - coating is green
[3] All values contain green coating

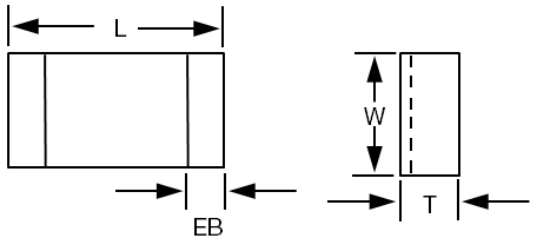
How to Order

RNC	20	E	N	R00075	F	E
Resistor Metal Element Current Sense SMT	PACKAGE CODE	POWER RATING, WATTS	TEMPERATURE COEFFICIENT OF RESISTANCE (TCR)	RESISTANCE	TOLERANCE	PACKING
	18 = 1206 19 = 2010 20 = 2512	A = 1.0W B = 1.5W C = 2.0W D = 2.5W E = 3.0W	Q = ± 50ppm/°C P = ± 75ppm/°C N = ± 100ppm/°C M = ±150ppm/°C L = ± 200ppm/°C	R00075 = 0.00075Ω (0.75mΩ) 0R0005 = 0.0005Ω (0.5mΩ) 00R001 = 0.001Ω (1mΩ) 0R0015 = 0.0015Ω (1.5mΩ) Letter denotes decimal place. R = decimal., "K" 10^3, "M" 10^6 Remaining 5 digits are significant or placeholders.	F = ± 1.0% H = ± 3.0% J = ± 5.0%	E = Embossed Tape & Reel

Standard Termination Finish: Nickel Tin Alloy
Example P/N: RNC20ENR00075FT is Resistor Metal Element Current Sense SMT, size 2512, 3.0W, ±100ppm/ºC, 0.00075Ω (0.75mΩ), ±1.0%, embossed tape & reel

Resistor Metal Element Current Sense SMT
RNC Series

Electrical & Mechanical Characteristics



Package Code	Power Rating (W)	Resistance Value (Ω)	L (Length) [mm]	W (Width) [mm]	T (Thickness) [mm]	EB (End Band) [mm]
RNC18 (Size1206)	1	0.5	3.20 ±0.25	1.60 ±0.10	0.60 ±0.20	1.35 ±0.25
		0.75	3.20 ±0.25	1.60 ±0.10	0.60 ±0.20	1.23 ±0.25
		1, 4, 5, 6	3.20 ±0.25	1.60 ±0.10	0.60 ±0.20	1.10 ±0.25
		2, 3, 10	3.20 ±0.25	1.60 ±0.10	0.60 ±0.20	0.60 ±0.25
		7, 8, 9	3.20 ±0.25	1.60 ±0.10	0.60 ±0.20	0.90 ±0.25
RNC19 (Size 2010)	1.5	0.5	5.08 ±0.25	2.54 ±0.15	0.60 ±0.20	2.17 ±0.25
		0.75	5.08 ±0.25	2.54 ±0.15	0.60 ±0.20	2.04 ±0.25
		1	5.08 ±0.25	2.54 ±0.15	0.60 ±0.20	1.84 ±0.25
		2, 6, 7, 8	5.08 ±0.25	2.54 ±0.15	0.60 ±0.20	1.54 ±0.25
		3	5.08 ±0.25	2.54 ±0.15	0.60 ±0.20	1.04 ±0.25
		4, 5	5.08 ±0.25	2.54 ±0.15	0.60 ±0.20	1.84 ±0.25
		9, 10	5.08 ±0.25	2.54 ±0.15	0.60 ±0.20	1.29 ±0.25
RNC20 (Size 2512)	1	0.5	6.35 ±0.254	3.18 ±0.254	1.25 ±0.20	1.30 ±0.38
		0.75	6.35 ±0.254	3.18 ±0.254	0.75 ±0.20	1.30 ±0.38
		1	6.35 ±0.254	3.18 ±0.254	0.65 ±0.20	1.30 ±0.38
		1.5	6.35 ±0.254	3.18 ±0.254	0.45 ±0.20	1.30±0.38
		2	6.35 ±0.254	3.18 ±0.254	0.35 ±0.20	1.30 ±0.38
		2.5	6.35 ±0.254	3.18 ±0.254	0.65 ±0.20	1.30 ±0.38
		3	6.35 ±0.254	3.18 ±0.254	0.55 ±0.20	1.30 ±0.38
		4	6.35 ±0.254	3.18 ±0.254	0.45 ±0.20	1.30 ±0.38
		5	6.35 ±0.254	3.18 ±0.254	0.35 ±0.20	1.30 ±0.38
		6	6.35 ±0.254	3.18 ±0.254	0.32 ±0.20	1.30 ±0.38
		6.5	6.35 ±0.254	3.18 ±0.254	0.30 ±0.20	1.30 ±0.38
		7	6.35 ±0.254	3.18 ±0.254	0.27 ±0.20	1.30 ±0.38
		10	6.35 ±0.254	3.18 ±0.254	0.25 ±0.20	1.30 ±0.38
RNC20 w/Green Coating (Size 2512)	1 to 3	0.5	6.35 ±0.25	3.00 ±0.20	0.60 ±0.20	2.68 ±0.25
		0.75	6.35 ±0.25	3.00 ±0.20	0.60 ±0.20	2.48 ±0.25
		1, 5, 6	6.35 ±0.25	3.00 ±0.20	0.60 ±0.20	1.93 ±0.25
		1.5, 6.5, 7	6.35 ±0.25	3.00 ±0.20	0.60 ±0.20	1.43 ±0.25
		2, 3	6.35 ±0.25	3.00 ±0.20	0.60 ±0.20	1.18 ±0.25
		4, 4.5	6.35 ±0.25	3.00 ±0.20	0.60 ±0.20	2.18 ±0.25
		8 to 15	6.35 ±0.25	3.00 ±0.20	0.60 ±0.20	1.18 ±0.25

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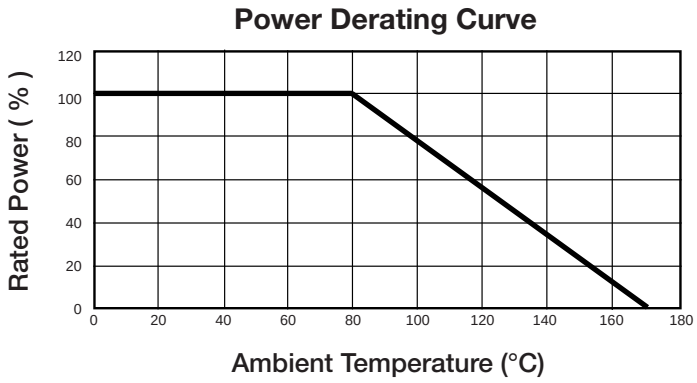

Specifications

Test	Specification		Test Method
	Black Coating	Green Coating	
Solderability	95% min. coverage		245 ±5°C for 3 seconds
Temperature Coefficient of Resistance	As Spec.		+25/-55/+25/+125/+25°C
Dry Heat	± 1.0%	± 1.0%	at +170°C for 1000 hrs
Load Life	± 1.0%	± 1.0%	70 ±2°C, Max. working voltage for 1000 hrs with 1.5 hrs "ON"and 0.5 hrs "OFF"
Short Time Overload	± 0.5%	± 1.0%	5x rated power for 5 seconds
Resistance to Soldering Heat	± 0.5%	± 1.0%	260 ±5°C for 10 seconds
Thermal Shock	± 0.5%	± (0.5% + 0.05Ω)	-55°C ~ 150°C, 100 cycles

Note: Green coating cannot be used in solder bath

Packaging Information

Package Code	RNC18 (Reel Size 1206)	RNC19 (Reel Size 2010)	RNC20 (Reel Size 2512)
Quantity	2000		
Type	Embossed Tape		

Moisture Sensitivity Level: MSL-1

Available Options *(Consult Factory)*

- **Special Testing Requirements**

This datasheet is subject to change without notice.