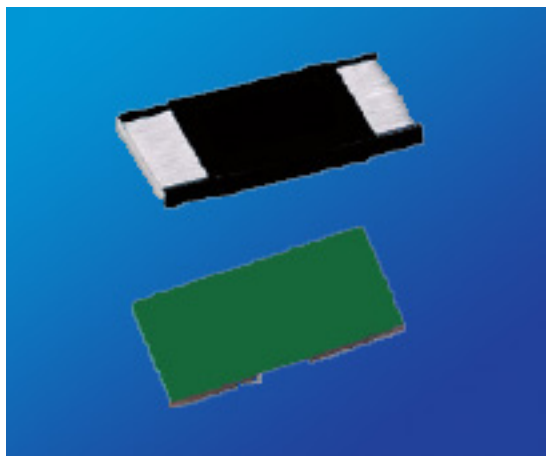


RESISTOR METAL ELEMENT CURRENT SENSE SMT

RNC SERIES



KEY FEATURES

- Resistances from 0.5 mOhms to 15 mOhms
- Resistance Tolerances to $\pm 1\%$
- Customized Resistance available
- Power Rating up to 3 Watts
- TCR's to ± 50 ppm/°C
- 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 80°C	RESISTANCES (mΩ)	TCR (ppm/°C)	TOLERANCES	TEMPERATURE RANGE
RNC18A	1206	1	0.5 - 10	± 50 ± 200 (0.5 mΩ)	1% 3% 5%	-55°C to +170°C
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 = $\sqrt{\text{Power} \times \text{Resistance}}$

HOW TO ORDER

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

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 = ± 50 ppm/°C P = ± 75 ppm/°C N = ± 100 ppm/°C M = ± 150 ppm/°C L = ± 200 ppm/°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 = $\pm 1.0\%$ H = $\pm 3.0\%$ J = $\pm 5.0\%$	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, ± 100 ppm/°C, 0.00075Ω (0.75mΩ), $\pm 1.0\%$, embossed tape & reel



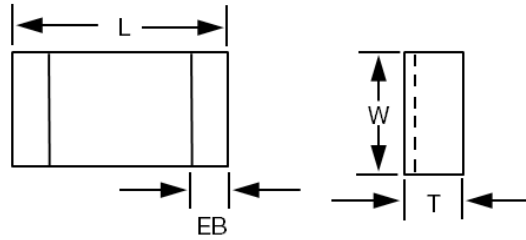
www.johansondielectrics.com

RESISTOR METAL ELEMENT CURRENT SENSE SMT

RNC SERIES



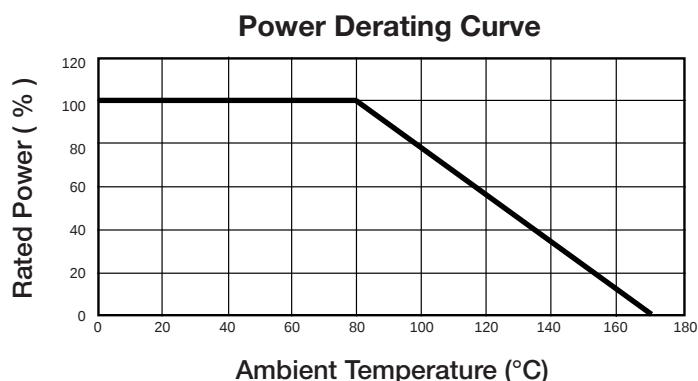
ELECTRICAL & MECHANICAL CHARACTERISTICS



Package Code	Power Rating (W)	Resistance Value (Ω)	L (Length) [mm]	W (Width) [mm]	T (Thickness) [mm]	EB (End Band) [mm]
RNC18 (Size 1206)	1	0.5	3.20 $\pm$ 0.25	1.60 $\pm$ 0.10	0.60 $\pm$ 0.20	1.35 $\pm$ 0.25
		0.75	3.20 $\pm$ 0.25	1.60 $\pm$ 0.10	0.60 $\pm$ 0.20	1.23 $\pm$ 0.25
		1, 4, 5, 6	3.20 $\pm$ 0.25	1.60 $\pm$ 0.10	0.60 $\pm$ 0.20	1.10 $\pm$ 0.25
		2, 3, 10	3.20 $\pm$ 0.25	1.60 $\pm$ 0.10	0.60 $\pm$ 0.20	0.60 $\pm$ 0.25
		7, 8, 9	3.20 $\pm$ 0.25	1.60 $\pm$ 0.10	0.60 $\pm$ 0.20	0.90 $\pm$ 0.25
RNC19 (Size 2010)	1.5	0.5	5.08 $\pm$ 0.25	2.54 $\pm$ 0.15	0.60 $\pm$ 0.20	2.17 $\pm$ 0.25
		0.75	5.08 $\pm$ 0.25	2.54 $\pm$ 0.15	0.60 $\pm$ 0.20	2.04 $\pm$ 0.25
		1	5.08 $\pm$ 0.25	2.54 $\pm$ 0.15	0.60 $\pm$ 0.20	1.84 $\pm$ 0.25
		2, 6, 7, 8	5.08 $\pm$ 0.25	2.54 $\pm$ 0.15	0.60 $\pm$ 0.20	1.54 $\pm$ 0.25
		3	5.08 $\pm$ 0.25	2.54 $\pm$ 0.15	0.60 $\pm$ 0.20	1.04 $\pm$ 0.25
		4, 5	5.08 $\pm$ 0.25	2.54 $\pm$ 0.15	0.60 $\pm$ 0.20	1.84 $\pm$ 0.25
RNC20 (Size 2512)	1	9, 10	5.08 $\pm$ 0.25	2.54 $\pm$ 0.15	0.60 $\pm$ 0.20	1.29 $\pm$ 0.25
		0.5	6.35 $\pm$ 0.254	3.18 $\pm$ 0.254	1.25 $\pm$ 0.20	1.30 $\pm$ 0.38
		0.75	6.35 $\pm$ 0.254	3.18 $\pm$ 0.254	0.75 $\pm$ 0.20	1.30 $\pm$ 0.38
		1	6.35 $\pm$ 0.254	3.18 $\pm$ 0.254	0.65 $\pm$ 0.20	1.30 $\pm$ 0.38
		1.5	6.35 $\pm$ 0.254	3.18 $\pm$ 0.254	0.45 $\pm$ 0.20	1.30 $\pm$ 0.38
		2	6.35 $\pm$ 0.254	3.18 $\pm$ 0.254	0.35 $\pm$ 0.20	1.30 $\pm$ 0.38
		2.5	6.35 $\pm$ 0.254	3.18 $\pm$ 0.254	0.65 $\pm$ 0.20	1.30 $\pm$ 0.38
		3	6.35 $\pm$ 0.254	3.18 $\pm$ 0.254	0.55 $\pm$ 0.20	1.30 $\pm$ 0.38
		4	6.35 $\pm$ 0.254	3.18 $\pm$ 0.254	0.45 $\pm$ 0.20	1.30 $\pm$ 0.38
		5	6.35 $\pm$ 0.254	3.18 $\pm$ 0.254	0.35 $\pm$ 0.20	1.30 $\pm$ 0.38
		6	6.35 $\pm$ 0.254	3.18 $\pm$ 0.254	0.32 $\pm$ 0.20	1.30 $\pm$ 0.38
		6.5	6.35 $\pm$ 0.254	3.18 $\pm$ 0.254	0.30 $\pm$ 0.20	1.30 $\pm$ 0.38
		7	6.35 $\pm$ 0.254	3.18 $\pm$ 0.254	0.27 $\pm$ 0.20	1.30 $\pm$ 0.38
		10	6.35 $\pm$ 0.254	3.18 $\pm$ 0.254	0.25 $\pm$ 0.20	1.30 $\pm$ 0.38
RNC20 w/Green Coating (Size 2512)	1 to 3	0.5	6.35 $\pm$ 0.25	3.00 $\pm$ 0.20	0.60 $\pm$ 0.20	2.68 $\pm$ 0.25
		0.75	6.35 $\pm$ 0.25	3.00 $\pm$ 0.20	0.60 $\pm$ 0.20	2.48 $\pm$ 0.25
		1, 5, 6	6.35 $\pm$ 0.25	3.00 $\pm$ 0.20	0.60 $\pm$ 0.20	1.93 $\pm$ 0.25
		1.5, 6.5, 7	6.35 $\pm$ 0.25	3.00 $\pm$ 0.20	0.60 $\pm$ 0.20	1.43 $\pm$ 0.25
		2, 3	6.35 $\pm$ 0.25	3.00 $\pm$ 0.20	0.60 $\pm$ 0.20	1.18 $\pm$ 0.25
		4, 4.5	6.35 $\pm$ 0.25	3.00 $\pm$ 0.20	0.60 $\pm$ 0.20	2.18 $\pm$ 0.25
		8 to 15	6.35 $\pm$ 0.25	3.00 $\pm$ 0.20	0.60 $\pm$ 0.20	1.18 $\pm$ 0.25

RESISTOR METAL ELEMENT CURRENT SENSE SMT

RNC SERIES



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.

