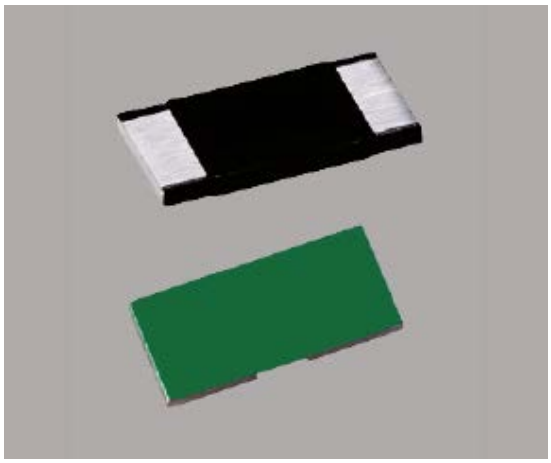
Resistor Thin Film Current Sense
RNC Series



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
- RoHS Compliant

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
RNC18	1206	1	0.5 - 10	± 50 ± 200 (0.5 Ω)	1% 3% 5%	-55ºC to +170ºC
RNC19	2010	1.5	0.5 - 10	± 50 ± 100 (0.5 Ω)		
RNC20 [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		
RNC20A [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		
RNC20B [3]	2512	2.5	4, 4.5, 5, 6	± 50		
RNC20C [3]	2512	3	0.5, 0.75	± 100		
			1, 1.5, 2, 2.5, 3, 3.5	± 50		

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

[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 THIN FILM CURRENT SENSE	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

Example P/N: RNC20ENR00075FT is Resistor Thin Film Current Sense, size 2512, 3.0W, ±100ppm/ºC, 0.00075Ω (0.75mΩ), ±1.0%, embossed tape & reel

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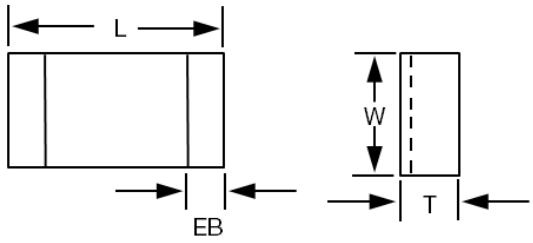
ELECTRICAL & MECHANICAL CHARACTERISTICS



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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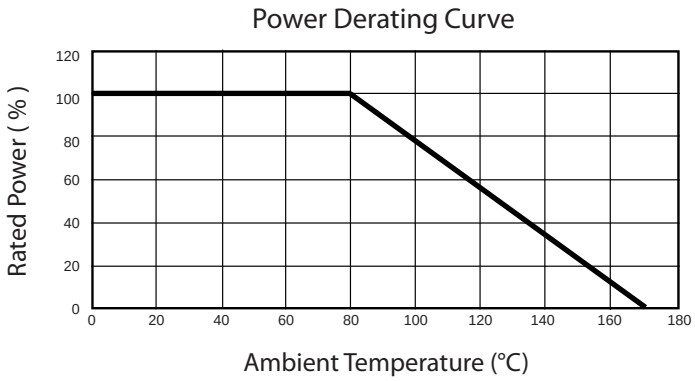

SPECIFICATIONS

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.