

EMC/EMI Chokes RN series

Current-compensated Chokes

SCHAFNER
energy efficiency and reliability

Approvals



VDE: excluding RN 102, RN 202

RoHS

- Rated currents from 0.3 to 10A
- DC to 1kHz frequency
- 100kHz to 3MHz common-mode resonance frequency
- Dual-choke configurations
- Multiple PCB-mounting options



Technical specifications

Flammability corresponding to:	UL 94V-0
High potential test voltage:	
Maximum continuous operating voltage:	250VAC @ 40 °C
MTBF @ 40 °C/230V (Mil-HB-217F):	> 5,000,000 hours
Operating frequency:	
Rated currents:	0.3 to 10 A @ 40 °C max.
Surge current @ 10msec:	20 x Inominal @ 25 °C
Temperature range (operation and storage):	-40 °C to +125 °C (40/125/56)
winding-to-housing @ 25 °C:	4000VAC, 60 sec, guaranteed
winding-to-winding @ 25 °C:	1500VAC, 60 sec, guaranteed
	1500V, 50Hz, 2 sec, factory test

Typical electrical schematic



RN chokes are attenuating common-mode or asymmetric (P/N → E) interference signals, by being connected in series with the phase and neutral lines of an AC powerline input. Symmetrical components of the noise are also attenuated by the leakage inductance of the windings. These chokes are typically used in conjunction with suppression capacitors.

Features and benefits

- High saturation resistance and excellent thermal behavior.
- Through hole pin connections.
- Dual-choke configuration.
- Small compact design.
- Multiple housing options.
- Custom-specific versions are available on request.

Typical applications

- Phase-angle control circuits in combination with saturating chokes
- EMI input filters
- For suppressing equipment with no earth connection
- Suppressing high interference levels

Choke selection table

Choke*	Nominal current @ 40 °C	Inductance L	Resistance R	Choke configuration	Input/Output connections	Type 1	Weight Type 2
	[A]	[mH/path]	[mΩ/path]	[Qty]		[g]	[g]
RN x02-0.3-02	0.3	12	1275	2	-02	2	3
RN x02-0.6-02	0.6	4.4	385	2	-02	2	3
RN x02-1-02	1	3	205	2	-02	2	3
RN x02-1.5-02	1.5	1.6	100	2	-02	2	3
RN x02-2-02	2	1.1	70	2	-02	2	3
RN x12-0.4-02	0.4	39	1460	2	-02	5	6
RN x12-0.5-02	0.5	27	1250	2	-02	5	6
RN x12-0.6-02	0.6	15	465	2	-02	5	6
RN x12-0.8-02	0.8	10	370	2	-02	5	6
RN x12-1.2-02	1.2	6.8	245	2	-02	5	6
RN x12-1.5-02	1.5	3.3	135	2	-02	5	6
RN x12-2-02	2	1.8	75	2	-02	5	6
RN x12-4-02	4	0.7	27	2	-02	5	6
RN x14-0.3-02	0.3	47	1750	2	-02	9	12
RN x14-0.5-02	0.5	39	810	2	-02	9	12
RN x14-0.8-02	0.8	27	500	2	-02	9	12
RN x14-1-02	1	15	375	2	-02	9	12
RN x14-1.2-02	1.2	10	200	2	-02	9	12
RN x14-1.5-02	1.5	6.8	130	2	-02	9	12
RN x14-2-02	2	4.2	102	2	-02	9	12
RN x14-2.5-02	2.5	3.3	72	2	-02	9	12
RN x14-3-02	3	2	55	2	-02	9	12
RN x14-4-02	4	1.5	35	2	-02	9	12
RN x22-0.6-02	0.6	47	1180	2	-02	17	21
RN x22-0.8-02	0.8	39	1000	2	-02	17	21
RN x22-1-02	1	18	610	2	-02	17	21
RN x22-1.5-02	1.5	10	220	2	-02	17	21
RN x22-2-02	2	6.8	147	2	-02	17	21
RN x22-2.5-02	2.5	5.6	105	2	-02	17	21
RN x22-3-02	3	4.5	80	2	-02	17	21
RN x22-4-02	4	3.3	45	2	-02	17	21
RN x42-0.5-02	0.5	82	2700	2	-02	32	32
RN x42-1-02	1	33	810	2	-02	32	32
RN x42-1.4-02	1.4	27	500	2	-02	32	32
RN x42-2-02	2	6.8	190	2	-02	32	32
RN x42-4-02	4	3.3	66	2	-02	32	32
RN x42-6-02	6	1.8	20	2	-02	32	32
RN 143-0.5-02	0.5	100	2900	2	-02	33	
RN 143-1-02	1	47	880	2	-02	33	
RN 143-2-02	2	10	230	2	-02	33	
RN 143-4-02	4	3.9	58	2	-02	33	
RN 143-6-02	6	1.8	20	2	-02	33	
RN 152-1-02	1	68	1300	2	-02	54	
RN 152-2-02	2	18	350	2	-02	54	
RN 152-4-02	4	6.8	87	2	-02	54	
RN 152-6-02	6	3.9	41	2	-02	54	
RN 152-8-02	8	2.7	22	2	-02	54	
RN 152-10-02	10	1.8	14	2	-02	54	

* Replace the x by the desired housing style type 1 or 2.



1: Choke horizontal



2: Choke vertical

Test conditions:

Measuring frequency: 10kHz; 5mA < 16μH; 500μA > 16μH < 160μH; 50μA > 160μH < 16mH; 50mV > 16mH < 160mH

Inductance tolerance: +50%, -30%

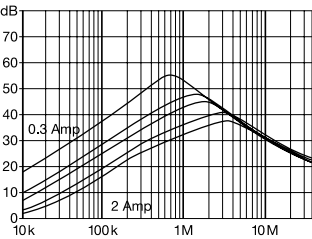
Resistance tolerance: max. ±15% @ 25°C; ≤ 20mΩ, 1A; > 20mΩ ≤ 200mΩ, 100mA; > 200mΩ ≤ 2Ω, 10mA

Electrical characteristics @ 25°C: ±2°C

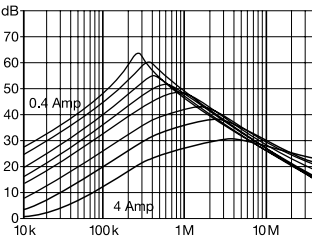
Typical choke attenuation/resonance frequency characteristics

Per CISPR 17; 50Ω/50Ω asym

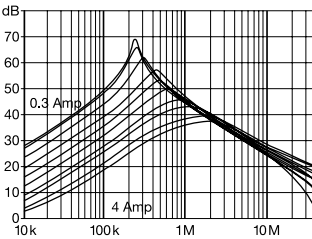
RN x02



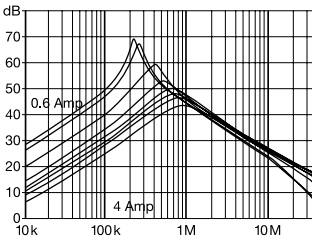
RN x12



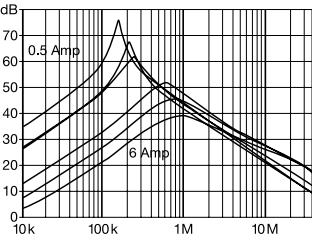
RN x14



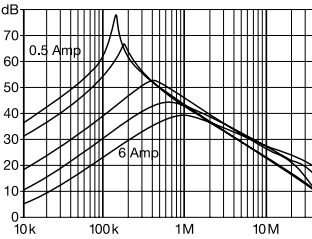
RN x22



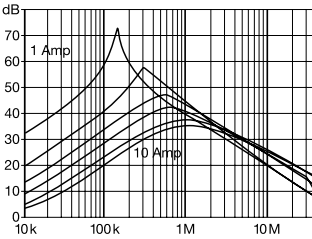
RN x42



RN 143



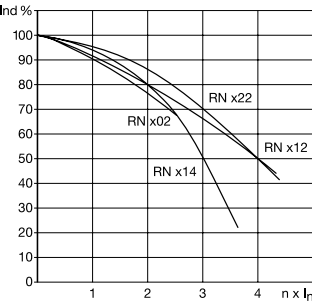
RN 152



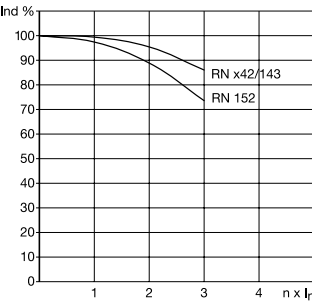
Typical saturation characteristics

Inductance (typical value in %) vs. nominal current (A DC)

RN x02 / RN x12 / RN x14 / RN x22

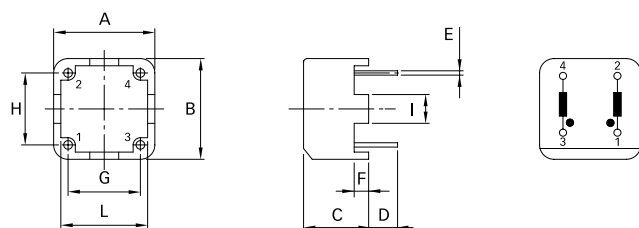


RN x42 / RN 143 / RN 152

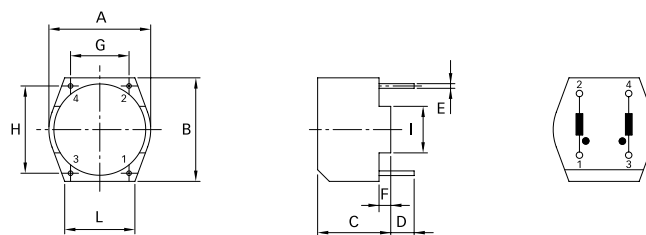


Mechanical data

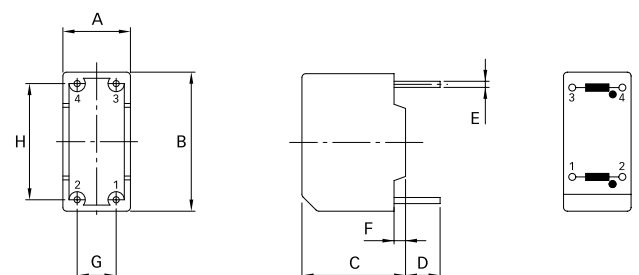
RN 102



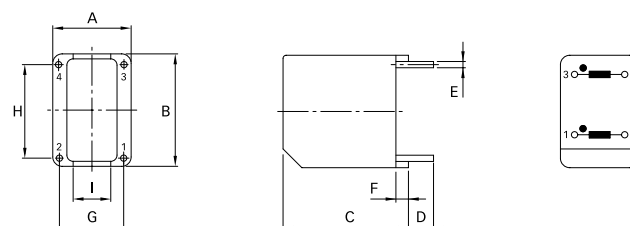
RN 112, RN 114, RN 122, RN 142, RN 143



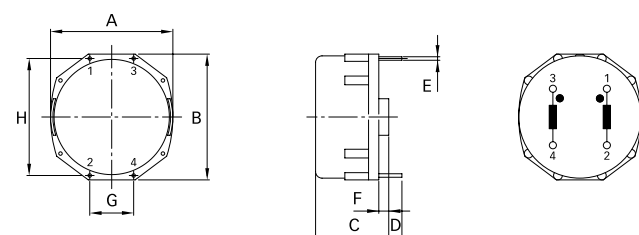
RN 202



RN 212, RN 214, RN 222, RN 242



RN 152



Dimensions

	RN 102	RN 112	RN 114	RN 122	RN 202	RN 212	RN 214	RN 222	RN 142	RN 143	RN 242	RN 152	Tol.
A	14	17.1	21.5	27	8.8	12.5	15.5	18	32.5	32.5	18	41.8	±0.3
B	14	17.7	22.5	28	18.2	18	23	31	33.1	33.1	31	43	±0.3
C	9	12.6	13.2	16.5	13.5	20	25	29.3	19.7	19.7	34.3	25	±0.3
D	4	4	4	4	4.5	4	4	4	4.3	4.3	4.2	4.5	±0.5
E	0.6	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	1.2	±0.1
F	2	2			1.5	2							
G	10	10	12.5	15	5.08	10	12.5	15	20	20	15	15	±0.2
H	10	15	20.1	25	15.21	15	10	12.5	30	30	12.5	40	±0.2
I	4	8											
L	12	12											

All dimensions in mm; 1 inch = 25.4mm
Tolerances according to: ISO 2768-m / EN 22768-m

**Headquarters, global innovation
and development center**

Schaffner Group

Nordstrasse 11
4542 Luterbach
Switzerland
T +41 32 681 66 26
F +41 32 681 66 30
info@schaffner.com
www.schaffner.com

To find your local partner within
Schaffner's global network, please go
to www.schaffner.com

© 2012 Schaffner Group
Specifications are subject to change
without notice. The latest version of the
data sheets can be obtained from the
website. All trademarks recognized.

Schaffner is an ISO-registered
company.

Its products are designed and
manufactured under the strict quality
and environmental requirements of
the ISO 9001 and ISO 14001
standards.

This document has been carefully
checked. However, Schaffner does not
assume any liability for errors or
inaccuracies.

Sales and application centers

China

Schaffner EMC Ltd. Shanghai
T20-3, No 565 Chuangye Road
Pudong New Area
201201 Shanghai
T +86 21 3813 9500
F F +86 21 3813 9501 / 02
cschina@schaffner.com
<http://www.schaffner.com.cn/>

Finland

Schaffner Oy
Sauvonrinne 19 H
08500 Lohja
T +358 19 35 72 71
finlandsales@schaffner.com

France

Schaffner EMC S.A.S.
112, Quai de Bezons
Boîte postale 133
95103 Argenteuil
T +33 1 34 34 30 60
F +33 1 39 47 02 28
francesales@schaffner.com

Germany

Schaffner Deutschland GmbH
Westring 18
33142 Büren
T +49 2951 60 01 0
F +49 2951 60 01 23
buereales@schaffner.com

Italy

Schaffner EMC S.r.l.
Via Galileo Galilei 47
20092 Cinisello Balsamo (MI)
T +39 02 66 04 30 45/47
F +39 02 61 23 943
italysales@schaffner.com

Japan

Schaffner EMC K.K.
1-32-12, Kamiyama, Setagaya-ku
7F Mitsui-seimei Sangeriya Bldg.
154-0011 Tokyo
T +81 3 5712 3650
F +81 3 5712 3651
japansales@schaffner.com
<http://www.schaffner.jp>

Singapore

Schaffner EMC Pte Ltd.
Blk 3015A Ubi Road 1
05-09 Kampong Ubi Industrial Estate
408705 Singapore
T +65 6377 3283
F +65 6377 3281
singaporesales@schaffner.com

Spain

Schaffner EMC España
Calle Caléndula 93, Miniparc III, Edificio E
El Soto de la Moraleja Alcobendas
28109 Madrid
T +34 618 176 133
spainsales@schaffner.com

Sweden

Schaffner EMC AB
Turebergstorg 1, 6
19147 Sollentuna
T +46 8 5792 1121 / 22
F +46 8 92 96 90
swedensales@schaffner.com

Switzerland

Schaffner EMV AG
Nordstrasse 11
4542 Luterbach
T +41 32 6816 626
F +41 32 6816 641
sales@schaffner.ch

Taiwan R.O.C.

Schaffner EMV Ltd.
6 Floor, No. 413
Rui Guang Road
114 Neihu District Taipei City
T +886 2 87525050
F +886 2 87518086
taiwansales@schaffner.com

Thailand

Schaffner EMC Co. Ltd.
Northern Region Industrial Estate
67 Moo 4 Tambon Ban Klang Amphur Muang
P.O. Box 14
51000 Lamphun
T +66 53 58 11 04
F +66 53 58 10 19
thailandsales@schaffner.com

UK

Schaffner Ltd.
5 Ashville Way
Molly Millars Lane Wokingham
RG41 2PL Berkshire
T +44 118 9770070
F +44 118 9792969
uksales@schaffner.com
<http://www.schaffner.uk.com>

USA

Schaffner EMC Inc.
52 Mayfield Avenue
08837 Edison
T 1-800-367-5566
T 732-225-9533
F 732-225-4789
usasales@schaffner.com
<http://www.schaffner.com/us>