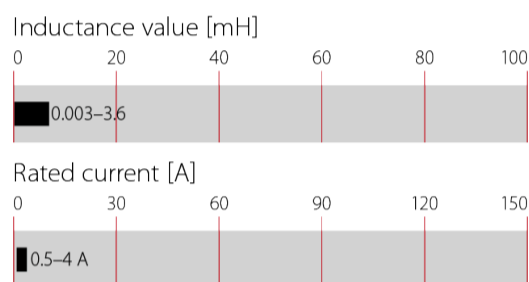


## Differential-mode chokes

- Rated currents from 0.3 to 10 A
- DC to 400 Hz frequency
- 100 kHz to 3 MHz common-mode resonance frequency
- Dual-choke configurations
- Multiple PCB-mounting options



### Performance indicators



### Technical Specifications

Operating voltage	250 VAC
Operating frequency	DC to 400 Hz
Rated currents	0.5 to 4 A @ rated ambient temperature
Rated inductance	0.003 to 3.6 mH
High potential test voltage winding-to-winding @ 25°C	1500 VAC, 60 sec, guaranteed 1500 VAC, 2 sec, factory test
Winding-to-housing @ 25°C	4000 VAC, 60 sec, guaranteed
Surge current @ 10 msec	20 x I <sub>N</sub> @ 25°C
Temperature range (operation and storage)	-40°C to 125°C (40/125/56) acc. IEC 60068-1
Flammability corresponding to	Housing UL 94V-0 Potting compound UL 94V-0 Ringcore coating UL 94V-0
Design corresponding to	UL 1283, IEC/EN 60938-1

### Approvals & Compliances



RS chokes are state of the art differential-mode or symmetric chokes, which can be used in various kinds of applications. The datasheet gives an overview of three different kinds of applications with the related electrical specifications.

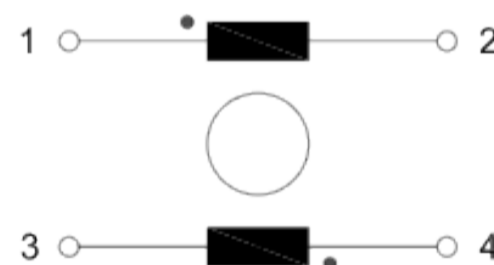
### Features and Benefits

- 3 different applications specified
- usable for basic and reinforced equipment
- Quasi linear saturation for storage mode
- 40 to 450 microjoules storage
- Resonance Frequency from 500kHz to 60MHz in symmetrical mode
- Custom-specific versions are available on request
- Multiple housing options

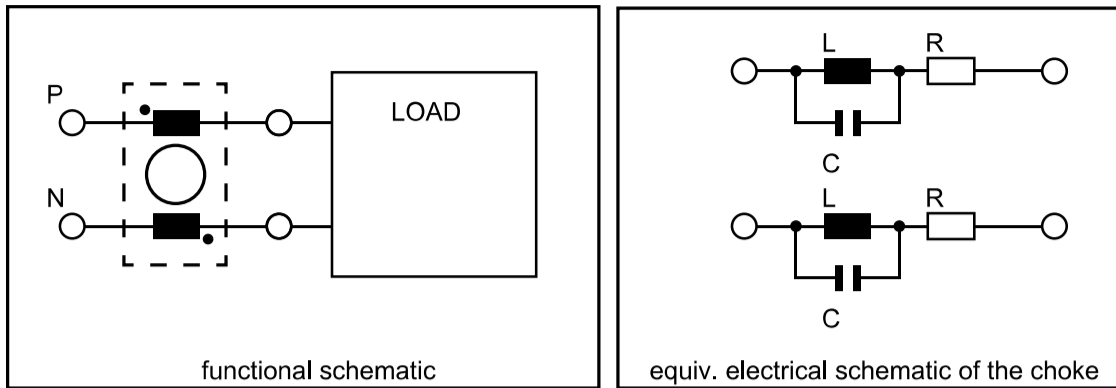
### Typical Applications

- Energy filtering
- Multistage discrete filtering
- General purpose differential/symmetrical mode filtering
- SMPS and UPS DC/DC converters
- Frequency converters

### Typical electrical schematic



## Application Type #1: Symmetrical/Differential Mode



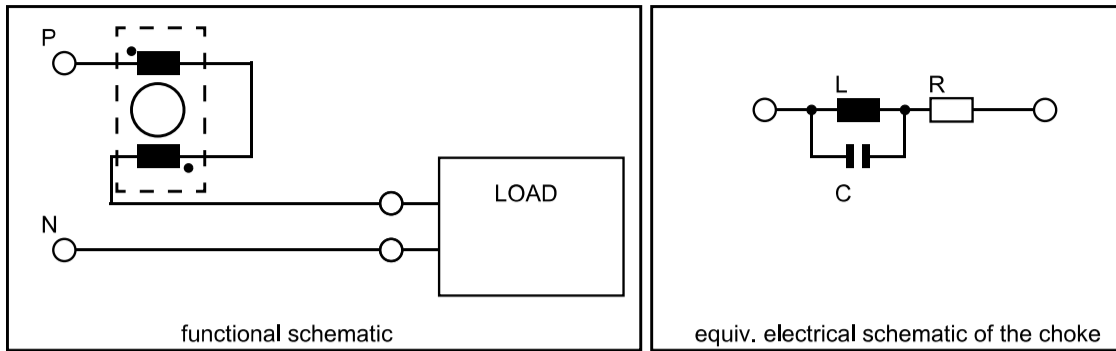
## Choke Selection Table

Choke	Current (I <sub>N</sub> )	Inductance (L) [μH]	Resistance (R) [mOhm]	typ. Resonance Frequency f <sub>0</sub> [MHz]	typ. Attenuation @ f <sub>0</sub> [dB]	typ. parasitic Capacitance C <sub>p</sub> [pF]
	@ 40°C ambient [A]					
RS 512-0.5-02 / RS 612-0.5-02	0.5	200	650	8	44.9	1.98
RS 512-1-02 / RS 612-1-02	1	55	130	20	37.3	3.83
RS 512-2-02 / RS 612-2-02	2	14	30	25	25.3	3.31
RS 512-4-02 / RS 612-4-02	4	3	10	33	10.7	7.75
RS 514-0.5-02 / RS 614-0.5-02	0.5	480	800	7	50.6	8.87
RS 514-1-02 / RS 614-1-02	1	120	200	11	42.7	7.39
RS 514-2-02 / RS 614-2-02	2	30	50	16	32.5	3.66
RS 514-4-02 / RS 614-4-02	4	8	20	22	25.6	3.43
RS 622-0.5-02	0.5	900	1250	2	54.9	12.64
RS 622-1-02	1	225	300	4	46	6.33
RS 622-2-02	2	55	70	7	33.2	9.40
RS 622-4-02	4	15	30	13	28.7	4.86

Test conditions: Measuring frequency: 10 kHz; 50 mV; Inductance tolerance: +50%, -30%; Resistance tolerance: ±15% @ 25°C; Electrical characteristics @ 25°C: ±2°C

For mechanical tolerances refer to mechanical data section.

## Application Type #2: Symmetrical/Differential Mode



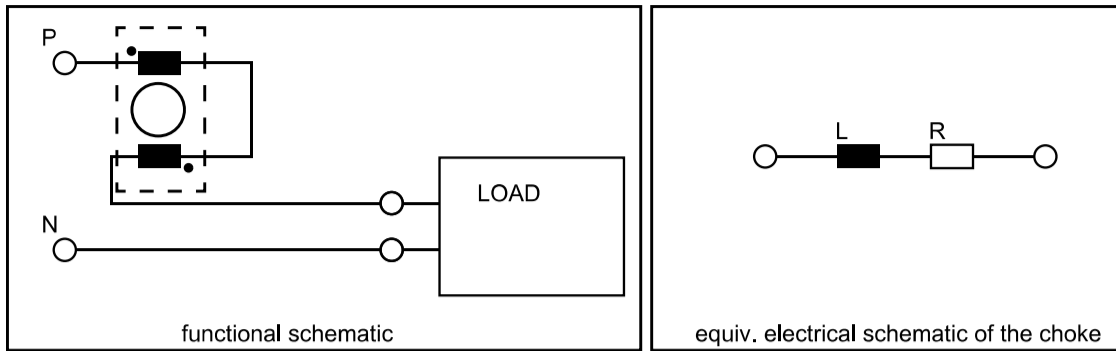
### Choke Selection Table

Filter	Current (I <sub>N</sub> ) @ 40°C ambient [A]	Inductance (L) [μH]	Resistance (R) [mOhm]	calc. Resonance	typ. Attenuation @ F <sub>0</sub> [dB]	typ. parasitic
				Frequency F <sub>0</sub> [MHz]		Capacitance C <sub>p</sub> [pF]
RS 512-0.5-02 / RS 612-0.5-02	0.5	800	1300	2	50	7.9
RS 512-1-02 / RS 612-1-02	1	220	260	8	47	4.8
RS 512-2-02 / RS 612-2-02	2	56	60	17	36	3.0
RS 512-4-02 / RS 612-4-02	4	12	20	27	22	2.9
RS 514-0.5-02 / RS 614-0.5-02	0.5	1920	1600	2.5	60	7.0
RS 514-1-02 / RS 614-1-02	1	480	400	5.5	53	6.6
RS 514-2-02 / RS 614-2-02	2	120	100	10	42	4.4
RS 514-4-02 / RS 614-4-02	4	32	40	18	34	5.8
RS 622-0.5-02	0.5	3600	2500	0.6	63	11.7
RS 622-1-02	1	900	600	1.5	55	9.3
RS 622-2-02	2	220	140	3	33	12.8
RS 622-4-02	4	60	60	5	38	5.2

Test conditions: Measuring frequency: 10 kHz; 50 mV; Inductance tolerance: +50%, -30%; Resistance tolerance: ±15% @ 25°C; Electrical characteristics @ 25°C: ±2°C

For mechanical tolerances refer to mechanical data section.

### Application Type #3: Energy Storage

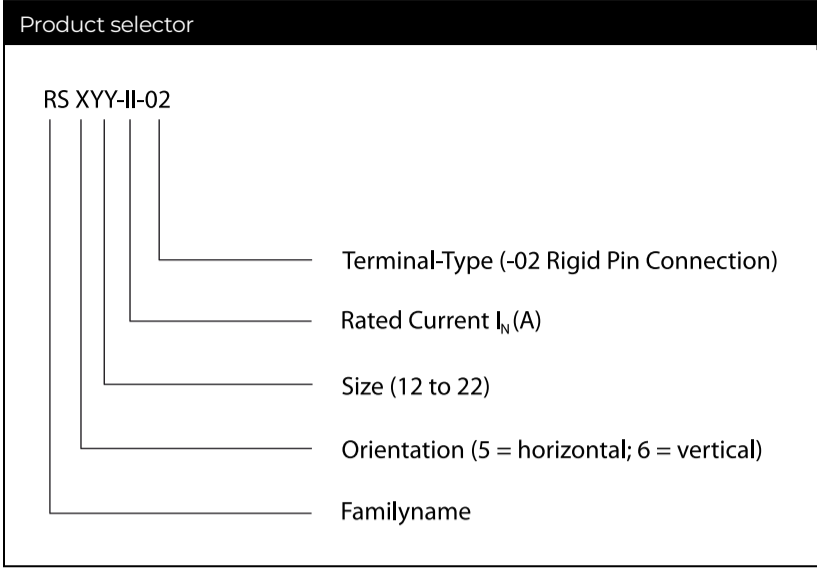


### Choke Selection Table

Filter	Current ( $I_N$ ) @ 40°C ambient [A]	Inductance (L) [μH]	Resistance (R) [mOhm]	Energy E [μJ]
RS 512-0.5-02 / RS 612-0.5-02	0.5	800	1300	100
RS 512-1-02 / RS 612-1-02	1	220	260	100
RS 512-2-02 / RS 612-2-02	2	56	60	100
RS 512-4-02 / RS 612-4-02	4	12	20	100
RS 514-0.5-02 / RS 614-0.5-02	0.5	1960	1600	240
RS 514-1-02 / RS 614-1-02	1	480	400	240
RS 514-2-02 / RS 614-2-02	2	120	100	240
RS 514-4-02 / RS 614-4-02	4	32	40	240
RS 622-0.5-02	0.5	3600	2500	450
RS 622-1-02	1	900	600	450
RS 622-2-02	2	220	140	450
RS 622-4-02	4	60	60	450

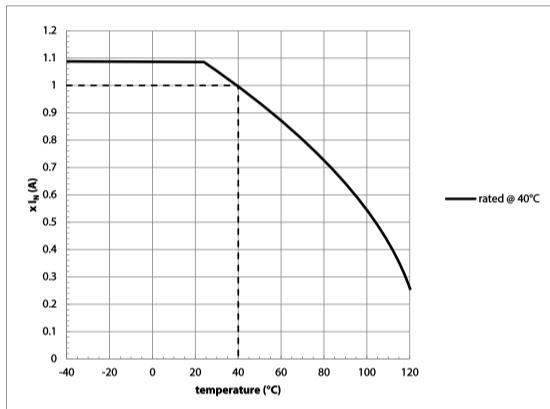
Test conditions: Measuring frequency: 10 kHz; 50 mV; Inductance tolerance: +50%, -30%; Resistance tolerance: ±15% @ 25°C; Electrical characteristics @ 25°C: ±2°C

For mechanical tolerances refer to mechanical data section.



### Thermal Derating

If higher ambient temperatures than the specified apply, the nominal current needs to be reduced according to the graph below.

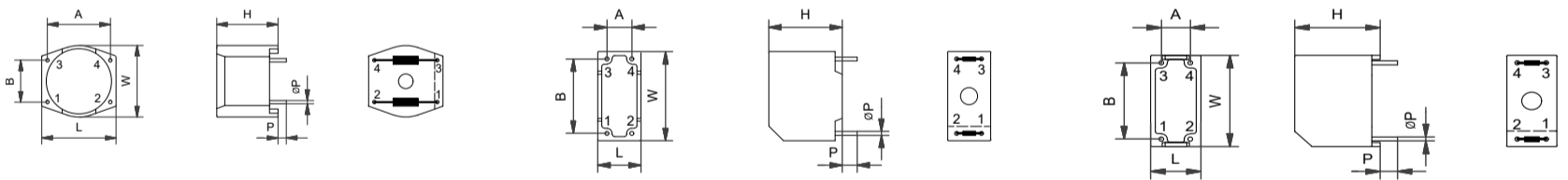


### Mechanical Data

RS 512, RS 514

RS 612

RS 614, RS 622



Pin material: Steel (base), Cu (under plating), Sn (final plating 6µm)

### Dimensions

	<b>A</b> (±0.6 mm)	<b>B</b> (±0.6 mm)	<b>H</b> (±0.3 mm)	<b>L</b> (±0.3 mm)	<b>W</b> (±0.3 mm)	<b>P</b> (±0.5 mm)	<b>ØP</b> (±0.1 mm)	<b>weight</b> [g]
<b>RS 512</b>	15.0 mm	10.0 mm	12.6 mm	17.7 mm	17.1 mm	4.0 mm	0.8 mm	6
<b>RS 514</b>	20.1 mm	12.5 mm	13.2 mm	22.5 mm	21.5 mm	4.0 mm	0.8 mm	11
<b>RS 612</b>	10.0 mm	15.0 mm	20.0 mm	12.5 mm	18.0 mm	4.0 mm	0.8 mm	9
<b>RS 614</b>	12.5 mm	10.0 mm	25.0 mm	15.5 mm	23.0 mm	4.0 mm	0.8 mm	15
<b>RS 622</b>	15.0 mm	12.5 mm	29.3 mm	18.0 mm	31.0 mm	4.3 mm	0.8 mm	30

Please visit [www.schaffner.com](http://www.schaffner.com) to find more details on filter connections.

## Headquarters, Global Innovation and Development

### Switzerland

#### Schaffner Holding AG

Industrie Nord  
Nordstrasse 11e  
4542  
Luterbach  
+41 32 681 66 26  
[info@schaffner.com](mailto:info@schaffner.com)

## Sales and Application Centers

### China

#### Schaffner EMC Ltd. Shanghai

T20-3 C, No 565 Chuangye Road, Pudong district  
201201  
Shanghai  
+86 2138139500  
[cschina@schaffner.com](mailto:cschina@schaffner.com)

### Finland

#### Schaffner Oy

Sauvonrinne 19 H  
8500  
Lohja  
+358 50 468 7284  
[finlandsales@schaffner.com](mailto:finlandsales@schaffner.com)

### France

#### Schaffner EMC S.A.S.

16-20 Rue Louis Rameau  
95875  
Bezons  
+33 1 34 34 30 60  
[francesales@schaffner.com](mailto:francesales@schaffner.com)

### Germany

#### Schaffner Deutschland GmbH

Schoemperlenstrasse 12B  
76185  
Karlsruhe  
+49 721 56910  
[germanysales@schaffner.com](mailto:germanysales@schaffner.com)

### India

#### Schaffner India Pvt. Ltd

Regus World Trade Centre  
WTC, 22nd Floor Unit No 2238, Brigade Gateway Campus, 26/1, Dr. Rajkumar Road Malleshwaram (W)  
560055  
Bangalore  
+91 8067935355  
[indiasales@schaffner.com](mailto:indiasales@schaffner.com)

### Italy

#### Schaffner EMC S.r.l.

Via Ticino, 30  
20900  
Monza (MB)  
+39 039 21 41 070  
[italysales@schaffner.com](mailto:italysales@schaffner.com)

### Japan

#### Schaffner EMC K.K.

ISM Sangenjaya 7F  
1-32-12 Kamiuma, Setagaya-ku  
154-0011  
Tokyo  
+81 3 5712 3650  
[japansales@schaffner.com](mailto:japansales@schaffner.com)

### Singapore

#### Schaffner EMC Pte Ltd.

Blk 3015A Ubi Road 1, #05-09, Kampong Ubi Industrial Estate  
408705  
Singapore  
+65 63773283  
[singaporesales@schaffner.com](mailto:singaporesales@schaffner.com)

### Spain

#### Schaffner EMC España

Calle Caléndula 93, Miniparc III, Edificio E El Soto de Moraleja, Alcobendas  
28109  
Madrid  
+34 917 912 900  
[spainsales@schaffner.com](mailto:spainsales@schaffner.com)

### Sweden

#### Schaffner EMC AB

Östermalmstrorg 1  
114 42  
Stockholm  
+46 8 5050 2425  
[swedensales@schaffner.com](mailto:swedensales@schaffner.com)

### Switzerland

#### Schaffner EMV AG

Industrie Nord  
Nordstrasse 11e  
4542  
Luterbach  
+41 32 681 66 26  
[switzerlandsales@schaffner.com](mailto:switzerlandsales@schaffner.com)

### Taiwan

#### Schaffner EMV Ltd.

U-Town  
20 Floor-2, No 97, Section 1, XinTai 5th Road, XiZhi District  
22175  
New Taipei City  
+886 226975500  
[taiwansales@schaffner.com](mailto:taiwansales@schaffner.com)

### Thailand

#### Schaffner EMC Co. Ltd.

Sathorn Square Tower  
Room 3780, 37FL, 98 North-Sathorn Rd, Silom, Bangrak  
10500  
Bangkok  
+66 621056397  
[thailandsales@schaffner.com](mailto:thailandsales@schaffner.com)

### United Kingdom

#### Schaffner Ltd.

1, Oakmede Place  
Terrace Road  
RG42 4JF  
Binfield  
+44 118 9770070  
[uksales@schaffner.com](mailto:uksales@schaffner.com)

### United States

#### Schaffner EMC Inc.

52 Mayfield Avenue  
Edison, New Jersey  
+1 732 225 9533  
[usasales@schaffner.com](mailto:usasales@schaffner.com)

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