

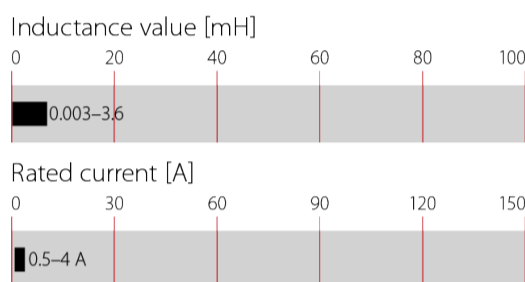
# Differential-mode chokes



- 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

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

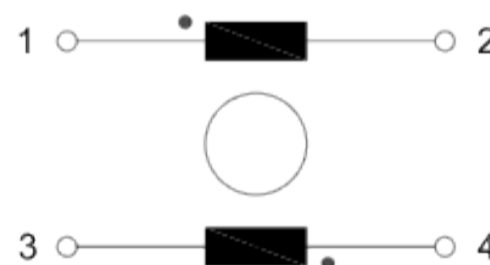
### Features and Benefits

- 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

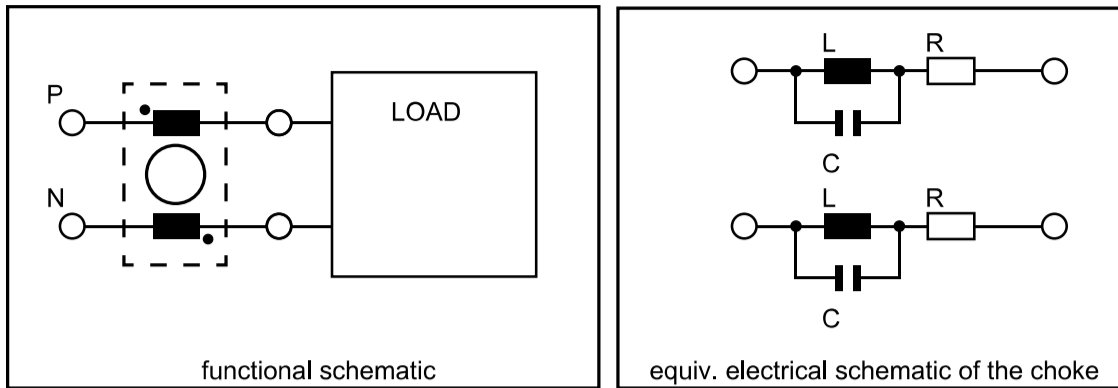
### Typical Applications

- 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



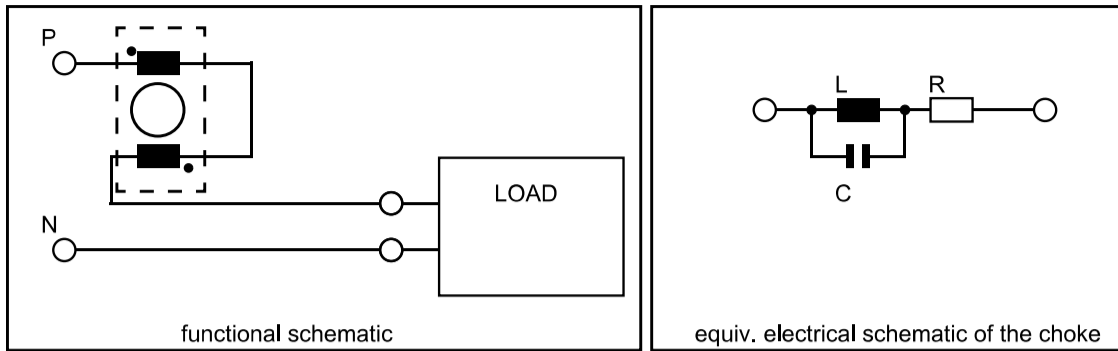
## Choke Selection Table

Choke	Current ( $I_N$ )	Inductance (L) [ $\mu$ H]	Resistance (R) [mOhm]	typ. Resonance Frequency $f_0$ [MHz]	typ. Attenuation @ $f_0$ [dB]	typ. parasitic Capacitance $C_p$ [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:  $\pm 15\%$  @ 25°C; Electrical characteristics @ 25°C:  $\pm 2^\circ\text{C}$

For mechanical tolerances refer to mechanical data section.

## Application Type #2: Symmetrical/Differential Mode



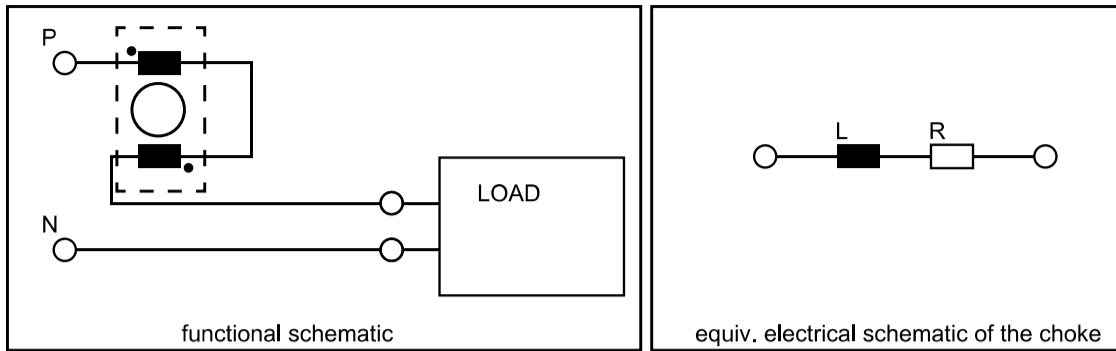
### Choke Selection Table

Filter	Current ( $I_N$ ) @ 40°C ambient [A]	Inductance (L) [μH]	Resistance (R) [mOhm]	calc. Resonance	typ. Attenuation @ $F_0$ [dB]	typ. parasitic
				Frequency $F_0$ [MHz]		Capacitance $C_p$ [pF]
<b>RS 512-0.5-02 / RS 612-0.5-02</b>	0.5	800	1300	2	50	7.9
<b>RS 512-1-02 / RS 612-1-02</b>	1	220	260	8	47	4.8
<b>RS 512-2-02 / RS 612-2-02</b>	2	56	60	17	36	3.0
<b>RS 512-4-02 / RS 612-4-02</b>	4	12	20	27	22	2.9
<b>RS 514-0.5-02 / RS 614-0.5-02</b>	0.5	1920	1600	2.5	60	7.0
<b>RS 514-1-02 / RS 614-1-02</b>	1	480	400	5.5	53	6.6
<b>RS 514-2-02 / RS 614-2-02</b>	2	120	100	10	42	4.4
<b>RS 514-4-02 / RS 614-4-02</b>	4	32	40	18	34	5.8
<b>RS 622-0.5-02</b>	0.5	3600	2500	0.6	63	11.7
<b>RS 622-1-02</b>	1	900	600	1.5	55	9.3
<b>RS 622-2-02</b>	2	220	140	3	33	12.8
<b>RS 622-4-02</b>	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

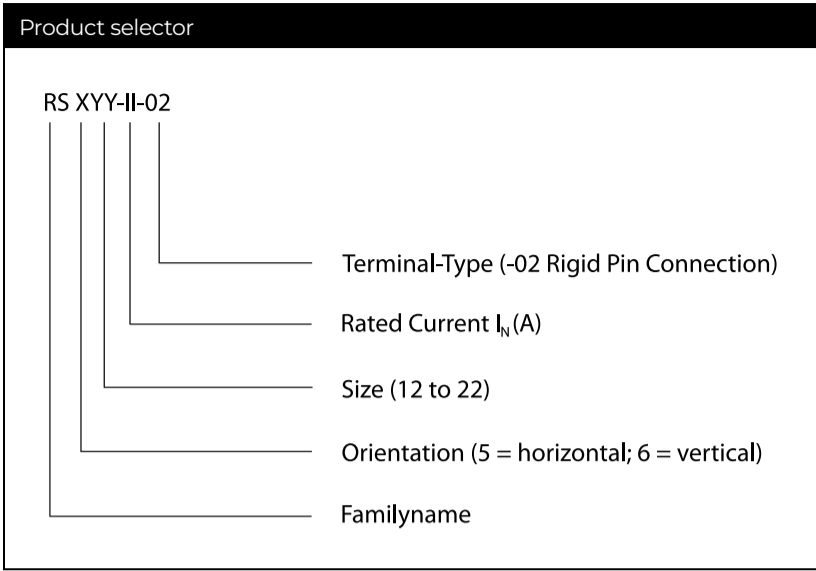


### Choke Selection Table

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

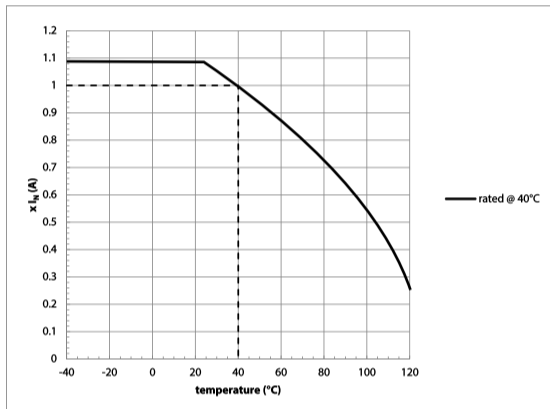
Test conditions: Measuring frequency: 10 kHz; 50 mV; Inductance tolerance: +50%, -30%; Resistance tolerance: ±15% @ 25°C; Electrical characteristics @ 25°C: ±2°C

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.

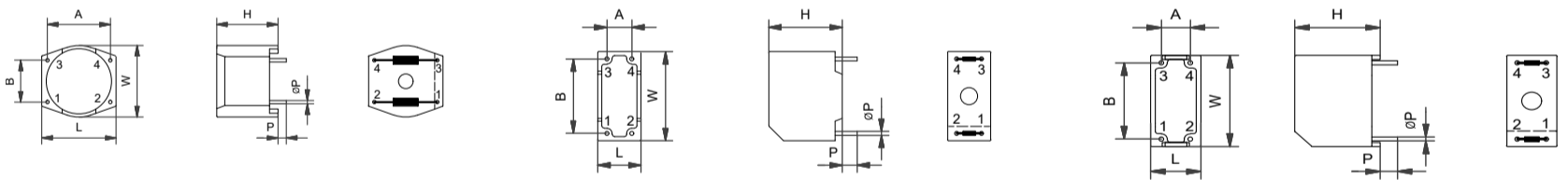


### Mechanical Data

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.

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