

# Current-compensated Chokes

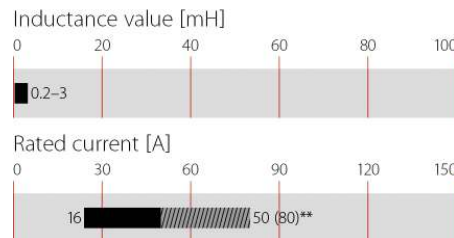
## EMC/EMI Chokes RB series



- | Rated currents from 16 to 50 A
- | Up to 600 VAC or 1000 VDC
- | 2- and 3-wire configurations
- | Horizontal and vertical PCB mounting types
- | Ruggedized saturation and thermal behavior
- | Open construction for forced and convection cooling
- | Straightforward pin-out for easy PCB design



### Performance indicators



### Technical specifications

<b>Maximum continuous operating voltage</b>	600 VAC / 1000 VDC
<b>Operating frequency</b>	dc to 400 Hz
<b>Rated currents</b>	16 to 50 A @ 60°C max. convection cooling
<b>High potential test voltage</b>	
<b>winding-to-winding</b>	2500 VAC, 60 sec, guaranteed, 2 sec factory test
<b>Temperature range (operation and storage)</b>	-40 °C to +125 °C (40/125/21)
<b>Flammability corresponding to</b>	UL 94 V-0
<b>Cooling</b>	convection / forced cooling
<b>MTBF @ 40°C/230V (Mil-HB-217F)</b>	> 5,000,000 hours

### Approvals

### ROHS

RB common-mode chokes are mainly used to filter EMI noise on AC power lines up to 600 VAC but they are as well applicable in DC power lines of photovoltaic installations or similar applications up to 1000 VDC. EMI noise of electronic equipment can go to the power lines and disturb the proper function of other devices like TV sets or radios. Thus noise generated by the equipment from switched power electronics or by high slew rates of controllers needs to be filtered. RB common-mode chokes are used to suppress EMI noise in PCB integrated filter designs with line bypass capacitors or in combination with single phase filters for extra low leakage filter designs.

### Features and benefits

- | Cost-effective PCB designs for up to 80 A with forced cooling \*
- | Compact size and light weight
- | Low magnetic leakage flux
- | Excellent winding insulation
- | Standardized foot print
- | Broad range of inductance ratings
- | Custom-specific versions on request

\* See Application Note for forced cooling

### Typical applications

- | AC and DC filtering for midsize power range drives, photovoltaic inverters, fast chargers, charging stations, UPS and switch mode power supplies
- | Filter with low leakage current noise or improved immunity against grid disturbances
- | Electronic devices, automation
- | Converters

## RB Series

Selection table	convection cooling nominal current @ 60 °C [A]	*forced cooling 3 m/s nominal current @ 60 °C [A]	Inductance Ln @ 25 °C [mH/path]	Inductance Ls @ 25 °C [μH/path]	Resistance R @ 25 °C [mΩ/path]	Choke [size]	Ø Pin D [mm]	Length Pin L [mm]	Weight [g]
RB6122-16-1M0	16	25	1.00	6.3	4.8	1	2.0 ± 0.1	4.5 ± 0.5	130
RB6122-25-0M6	25	39	0.64	4.0	2.7	1	2.4 ± 0.1	4.5 ± 0.5	135
RB6122-36-0M5	36	53	0.45	3.6	1.5	2	2.2 ± 0.1	4.5 ± 0.5	180
RB6122-50-0M3	50	80	0.25	1.8	0.9	2	2.5 ± 0.1	5.0 ± 0.5	172
RB6522-16-1M0	16	25	1.00	6.2	4.6	3	2.0 ± 0.1	4.5 ± 0.5	132
RB6522-25-0M6	25	39	0.64	3.9	2.6	3	2.4 ± 0.1	4.5 ± 0.5	126
RB6522-36-0M5	36	53	0.45	3.6	1.5	4	2.2 ± 0.1	4.5 ± 0.5	180
RB6522-50-0M3	50	80	0.25	2.0	0.9	4	2.5 ± 0.1	5.0 ± 0.5	175
RB8522-16-3M0	16	25	3.00	22.2	8.4	4	2.0 ± 0.1	4.5 ± 0.5	172
RB8522-25-2M0	25	39	2.00	13.6	4.2	5	2.6 ± 0.1	5.0 ± 0.5	268
RB8522-36-1M5	36	53	1.50	12.8	3.0	6	2.2 ± 0.1	4.5 ± 0.5	440
RB8522-50-0M8	50	83	0.75	6.5	1.7	6	2.5 ± 0.1	5.0 ± 0.5	430
RB6132-16-0M8	16	26.5	0.80	5.8	4.6	7	2.0 ± 0.1	4.5 ± 0.5	162
RB6132-25-0M5	25	41	0.47	3.3	2.4	7	2.5 ± 0.1	5.0 ± 0.5	175
RB6132-36-0M4	36	60	0.42	2.9	1.4	8	2.2 ± 0.1	4.5 ± 0.5	278
RB6132-50-0M2	50	80	0.18	1.9	0.9	8	2.5 ± 0.1	5.0 ± 0.5	765
RB6532-16-0M8	16	26.5	0.80	6.9	4.7	9	2.0 ± 0.1	4.5 ± 0.5	165
RB6532-25-0M5	25	41	0.47	3.6	2.4	9	2.5 ± 0.1	5.0 ± 0.5	180
RB6532-36-0M4	36	60	0.42	4.2	1.5	10	2.2 ± 0.1	4.5 ± 0.5	280
RB6532-50-0M2	50	81	0.18	1.5	0.8	10	2.5 ± 0.1	5.0 ± 0.5	168
RB8532-16-1M3	16	27	1.30	9.1	5.7	9	2.0 ± 0.1	4.5 ± 0.5	167
RB8532-25-0M9	25	41	0.94	6.7	3.0	11	2.0 ± 0.1	5.0 ± 0.5	282
RB8532-36-0M8	36	58	0.83	7.3	2.3	12	2.4 ± 0.1	4.5 ± 0.5	478
RB8532-50-0M3	50	82	0.33	3.1	1.2	12	2.2 ± 0.1	5.0 ± 0.5	442

### Test conditions:

Measuring frequency: 1 kHz; 500 μA > 0.16 mH < 1.6 mH; 50 μA > 1.6 mH < 160 mH

Inductance tolerance: +50%, -30%

Resistance tolerance: max. ±15% @ 25°C; < 20 mΩ 1 A

Electrical characteristics @ 25 °C: ±2 °C

\* typical current for forced cooling with 3 m/s. Due to the possible turbulences and degradation of the air stream within an equipment please consider thermal validation.

**Product selector**

RB xxxx-xx-xmx

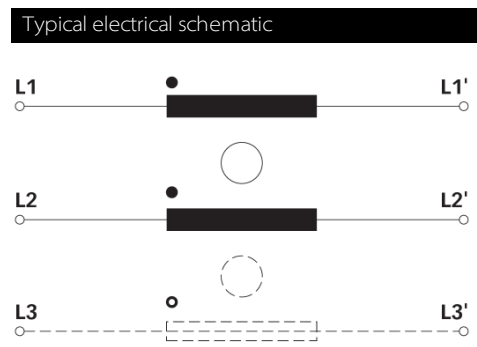
Inductance value (e.g. 9M6 = 9.6 mH)  
 Nominal input current [A] (convection cooling)  
 Terminal type ( 2 for PCB pin)

2 = 2-wire choke  
 3 = 3-wire choke

1 = Horizontal  
 5 = Vertical

8 = high inductance series  
 6 = low inductance series

Schaffner standard ring-core choke series RB



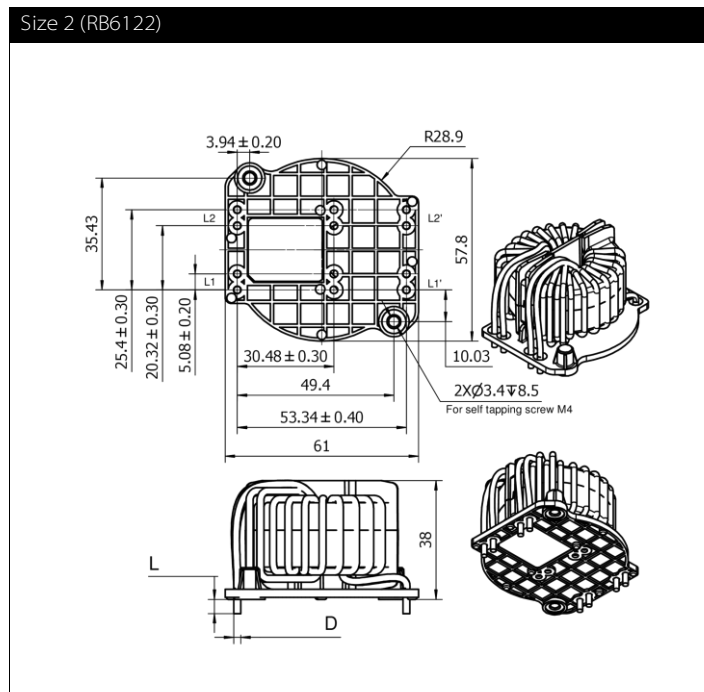
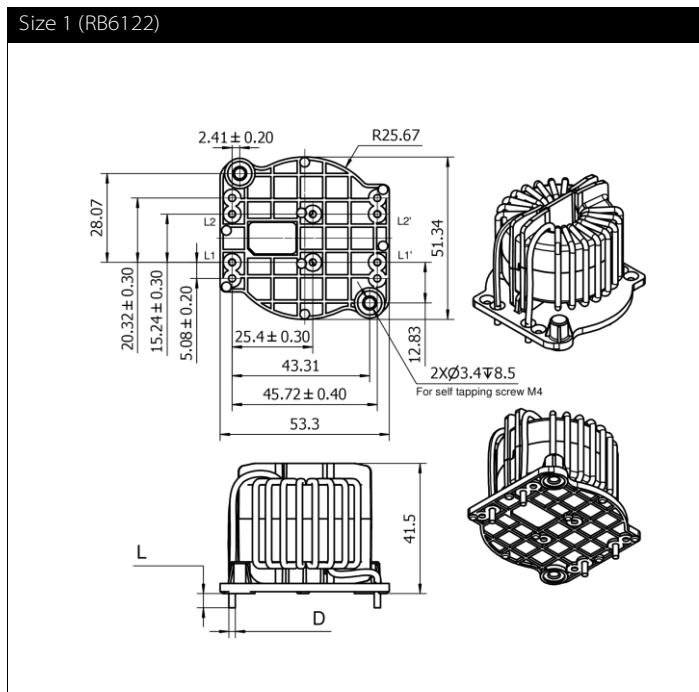
**Examples:**

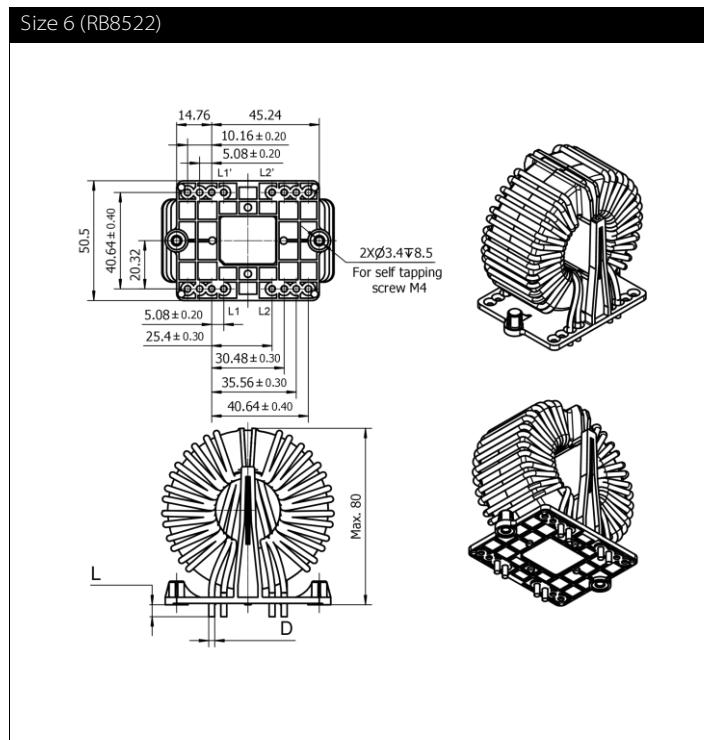
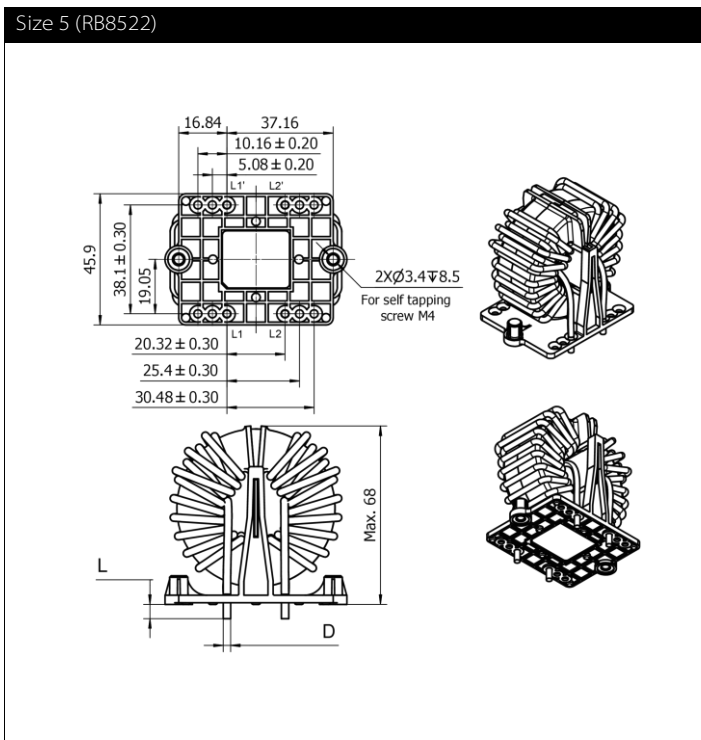
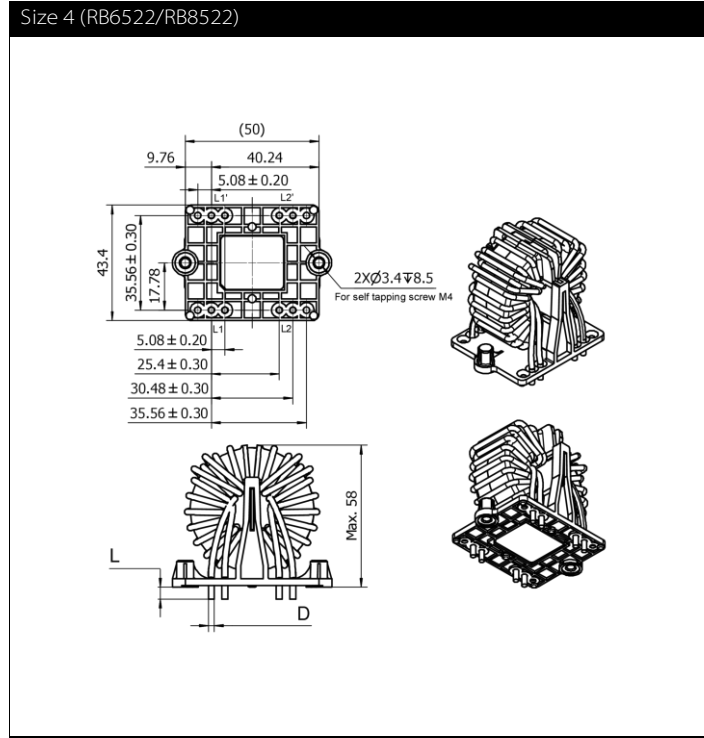
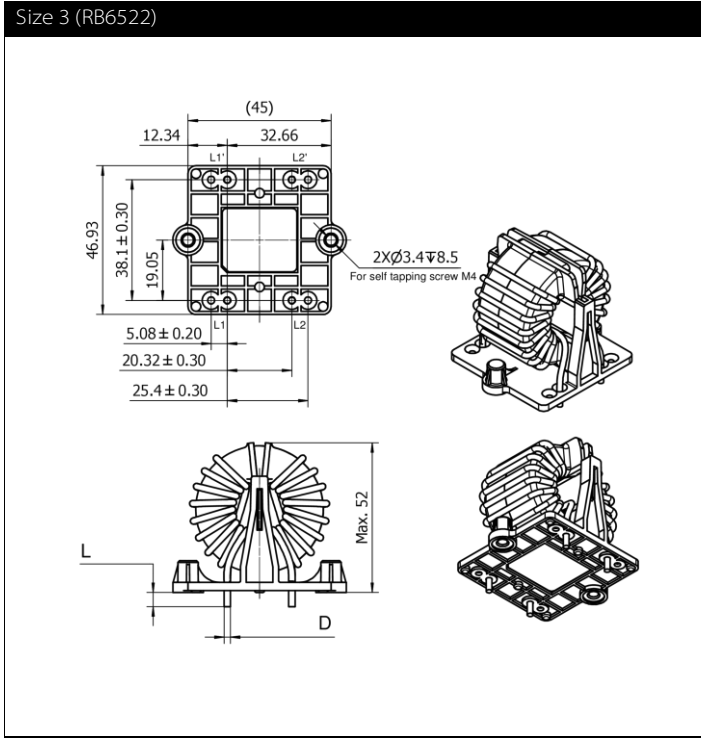
RB8532-16-1M3: Vertical 3-wire high inductance choke with PCB pins, for 16 A, with 1.3 mH

RB6122-50-0M3: Horizontal 2-wire low inductance choke with PCB pins, for 50 A, with 0.3 mH

**1-phase / DC chokes**

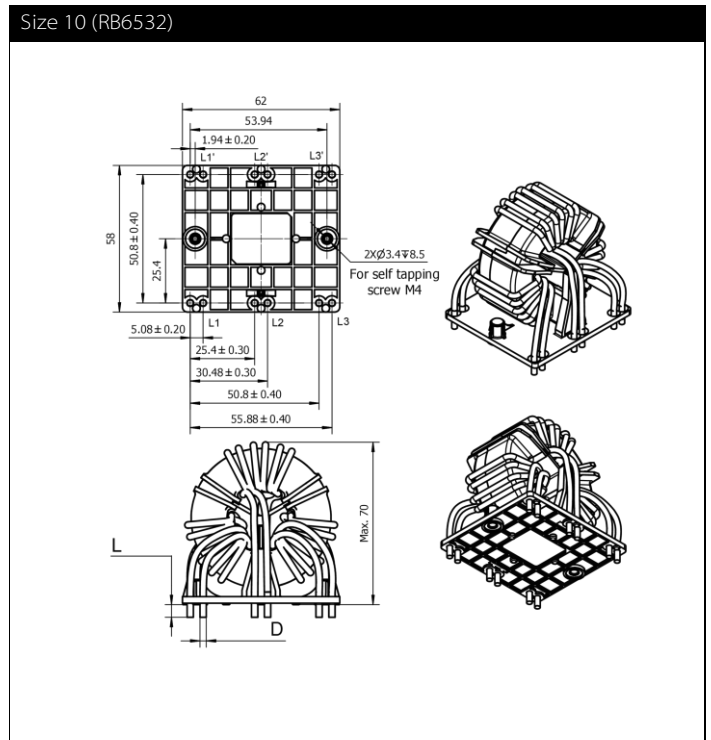
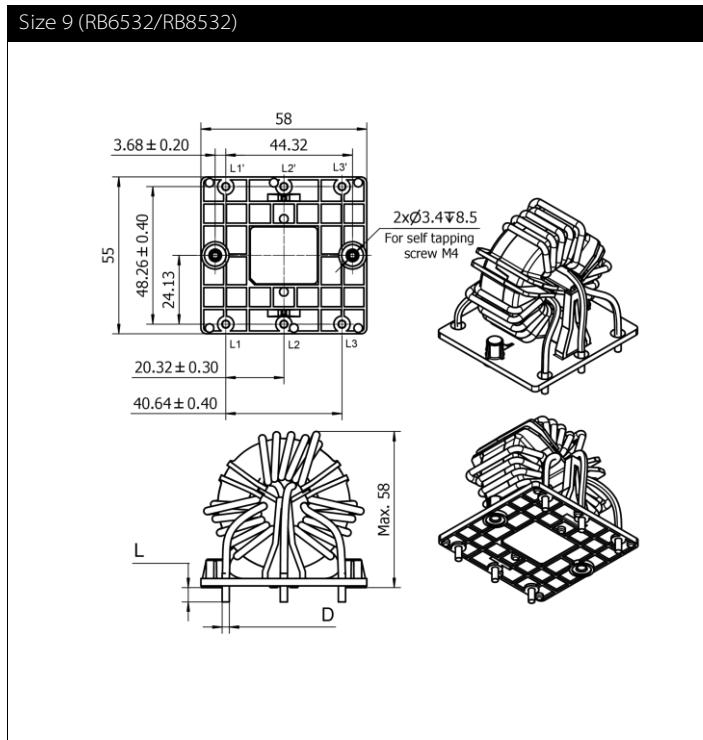
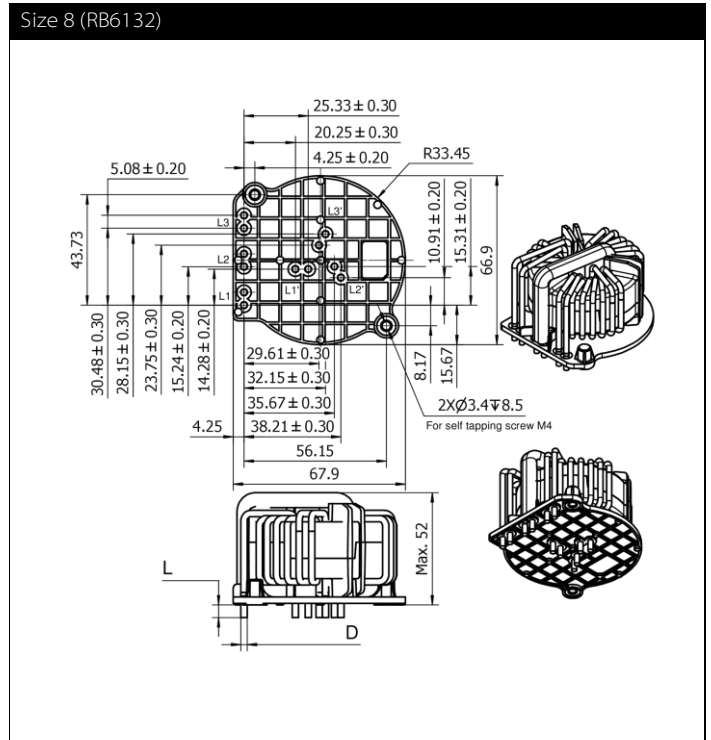
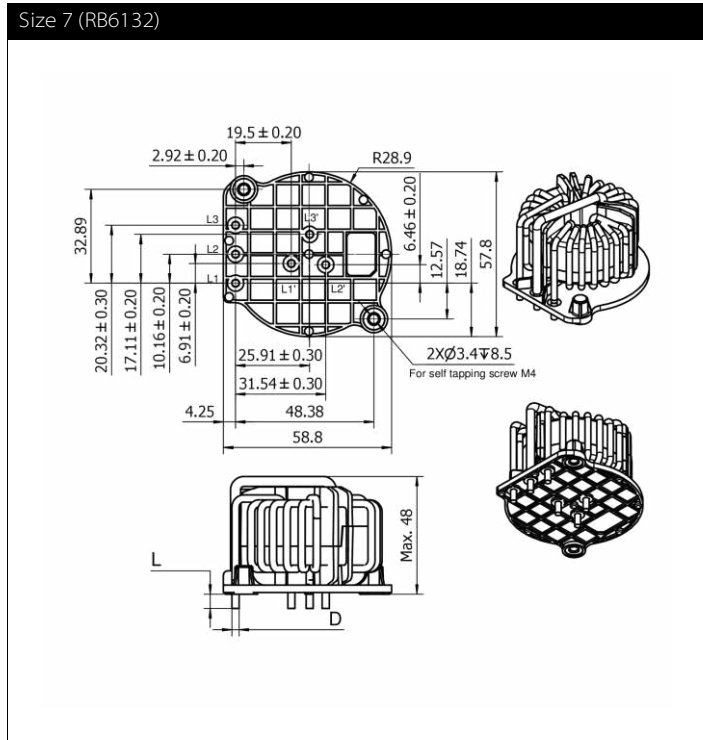
Dimensions (mm)

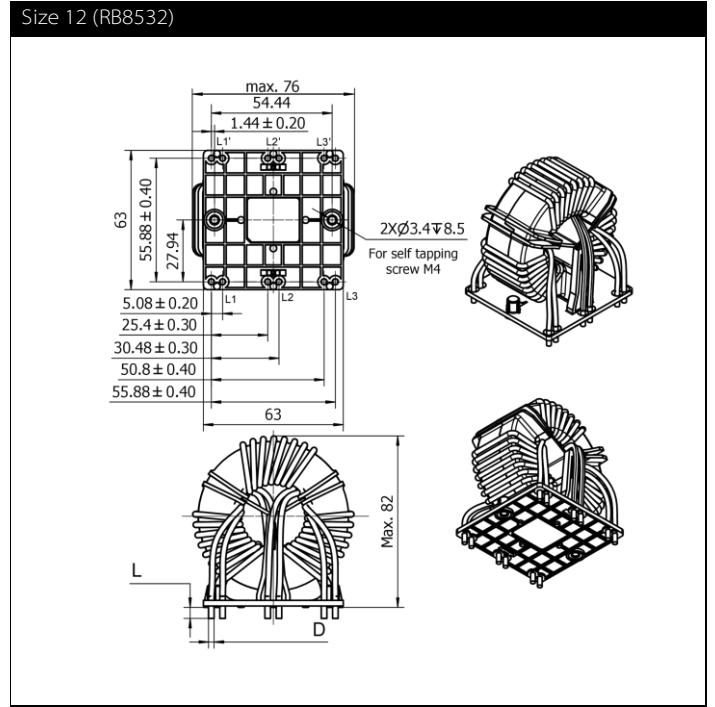
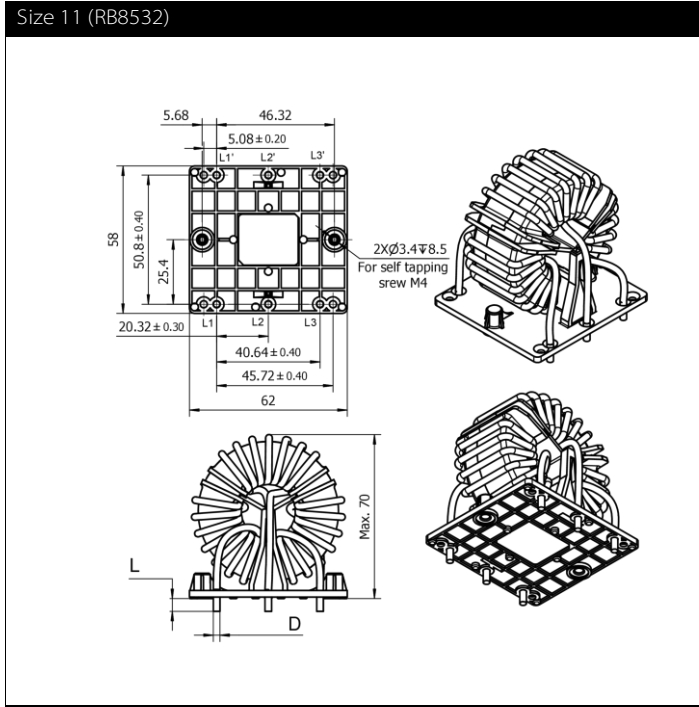




### 3-phase chokes

Dimensions (mm)

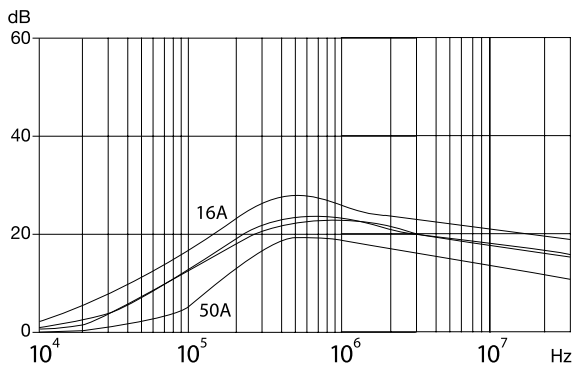




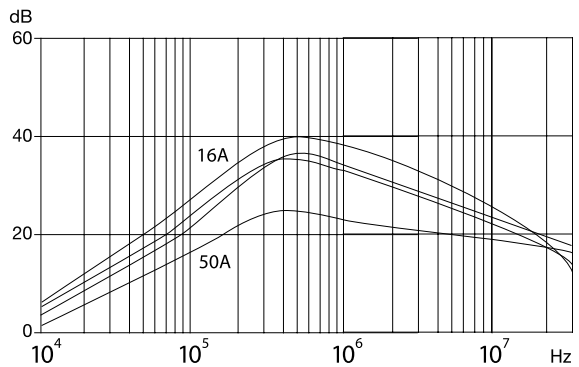
**Typical choke attenuation/resonance frequency characteristics**

Per CISPR 17; 50 Ω/50 Ω asym

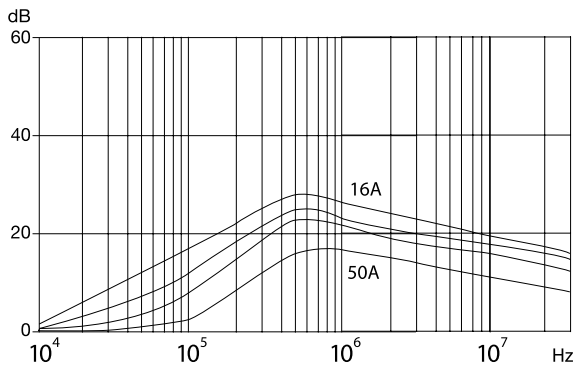
**RB6122, RB6522**



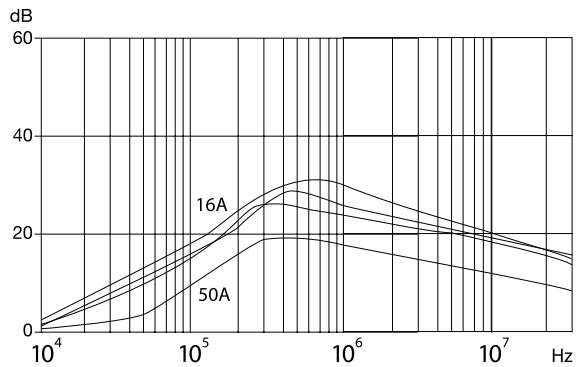
**RB8522**



**RB6132, RB6532**



**RB8532**



## Typical saturation characteristics

Designation	max. DM peak current 25 °C IDM max @ 25 °C [A]	max. DM peak current 25 °C IDM max @ 100 °C [A]	max. CM peak current 25 °C ICM max @ 25 °C [A]	max. CM peak current 100 °C ICM max @ 100 °C [A]
RB6122-16-1M0	135	95	0.24	0.16
RB6122-25-0M6	160	112	0.31	0.21
RB6122-36-0M5	185	130	0.41	0.28
RB6122-50-0M3	270	189	0.58	0.40
RB6522-16-1M0	135	95	0.24	0.16
RB6522-25-0M6	160	112	0.31	0.21
RB6522-36-0M5	185	130	0.41	0.28
RB6522-50-0M3	270	189	0.58	0.40
RB8522-16-3M0	73	51	0.17	0.11
RB8522-25-2M0	126	88	0.27	0.18
RB8522-36-1M5	165	116	0.40	0.27
RB8522-50-0M8	225	158	0.55	0.36
RB6132-16-0M8	155	109	0.32	0.22
RB6132-25-0M5	225	158	0.41	0.28
RB6132-36-0M4	330	231	0.59	0.39
RB6132-50-0M2	335	235	0.88	0.59
RB6532-16-0M8	155	109	0.32	0.22
RB6532-25-0M5	225	158	0.41	0.28
RB6532-36-0M4	330	231	0.59	0.39
RB6532-50-0M2	335	235	0.88	0.59
RB8532-16-1M3	128	90	0.26	0.17
RB8532-25-0M9	195	137	0.39	0.26
RB8532-26-0M8	260	182	0.55	0.36
RB8532-50-0M3	395	277	0.88	0.59

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





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