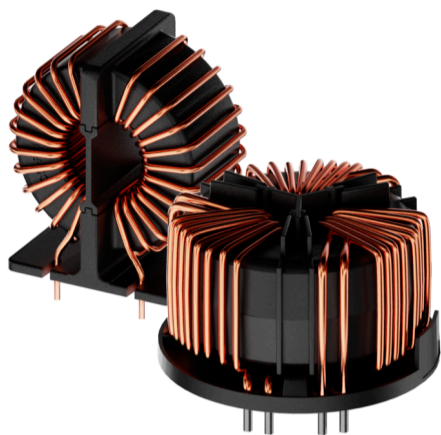
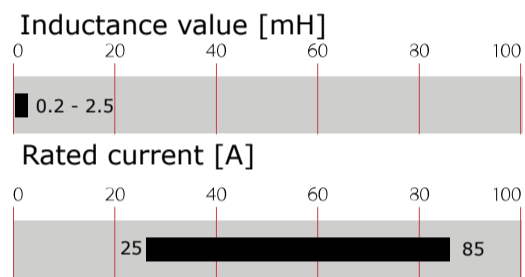


Current-Compensated Chokes - Ferrite Core



- Rated currents from 6 to 85 A
- Up to 600 VAC and 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
- Ferrite Core Technology

Performance indicators



Approvals & Compliances



EIS applicable for currents > 20A

RT common-mode chokes are mainly used to filter EMI noise on AC power lines up to 600 VAC. EMI noise of electronic equipment can go to the power lines and disturb the proper function of other devices like communication devices or control logic of robotics. Thus noise generated by the equipment from switched power electronics or by high slew rates of controllers needs to be filtered. RT 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 135 A with forced cooling *
- EIS (electrical insulation system E332676) for currents > 20A acc. to UL 1446
- 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

Technical Specifications

Rated currents	6 to 85 A @ 60°C
Operating frequency	DC to 400 Hz
Creepage and clearance distances	Creepage & Clearance (2-line): ≥ 3.5 mm (Coil - Coil) / ≥ 3.0 mm (Coil-Core) Creepage & Clearance (3-line): ≥ 6.3 mm (Coil - Coil) / ≥ 5.5 mm (Coil-Core)
High potential test voltage	3 kV DC 3s (coil to coil) Repetition with max. 80% of the HV test voltage
Rated inductance	0.2 to 6 mH (3-line) 0.4 to 10 mH (2-line)
Operating voltage	300 VAC/425 VDC (2-line) 600 VAC (3-line)
Overvoltage category	III (acc. IEC 60664-1)
Pollution degree	PD2 (acc. IEC60664-1)
Stray inductance	Max. 1% of rated inductance (@ 100 kHz 1 V, 0 A)
Temperature range (operation and storage)	-40°C to +100°C (6 to 20 A) / -40°C to +125°C (25 to 63 A)
Climatic category	40/100/56 (acc. IEC 60068-1) (6 to 20 A) / 40/125/56 (acc. IEC 60068-1) (25 to 63 A)
Altitude	2'000 m, current and voltage derating above
Flammability corresponding to	UL 94 V0
Vibration and shock	3M4 (according IEC 60721-3-3)
Design corresponding to	UL/IEC 60938-1/-2 UL1446 (>20A)
MTBF (Mil-HB- 217F)	>2,000,000 h @ 60°C/300 V

Typical Applications

- AC and DC filtering for midsize power range drives, photovoltaic inverters, fast chargers, EV charging stations, heat pumps, UPS and switch mode power supplies
- Filter with low leakage current noise or improved immunity against grid disturbances
- Electronic devices, automation and (industrial) LED lighting
- Communication devices
- Medical and laboratory equipment
- Converters

RT Series

	Convection cooling nominal current @ 60° C[A]	*Forced cooling 3 m/s nominal current @ 60° C[A]	Inductance Ln @25° C 10kHz [mH/path]	Resistance @25° C [mΩ/path]	***Ø Pin ±0.1 ØP [mm]	Weight [g]
Horizontal 2-line						
RT8122-6-10M0	6	9.5	10	33	1.1	80
RT8122-8-8M0	8	12.5	8	21	1.3	80
RT8122-10-6M0	10	16	6	16	1.4	80
RT8122-12-5M0	12	19	5	14	1.5	100
RT8122-16-4M0	16	27	4	10	1.8	110
RT8122-20-3M0	20	32	3	7	2	160
RT8122-25-2M5	25	40	2.5	4.6	2.2	140
RT8122-32-1M5	32	51	1.5	3.4	2.4	200
RT8122-40-1M2	40	64	1.2	2.2	2.8	210
RT8122-50-1M0	50	80	1	1.7	2x2.2	270
RT8122-63-0M5	63	100	0.5	1.1	2x2.2	260
RT8122-85-0M4	85	135	0.4	0.61	2x3.0	330
Vertical 2-line						
RT8522-6-10M0	6	9.5	10	33	1.1	70
RT8522-8-8M0	8	12.5	8	21	1.3	80
RT8522-10-6M0	10	16	6	16	1.4	80
RT8522-12-5M0	12	19	5	14	1.5	90
RT8522-16-4M0	16	27	4	10	1.8	110
RT8522-20-3M0	20	32	3	7	2	150
RT8522-25-2M5	25	40	2.5	4.4	2.2	160
RT8522-32-1M5	32	51	1.5	3.4	2.4	210
RT8522-40-1M2	40	64	1.2	2.2	2.8	220
RT8522-50-1M0	50	80	1	1.7	2x2.2	280
RT8522-63-0M5	63	100	0.5	1	2x 2.2	270
RT8522-85-0M4	85	135	0.4	0.7	2x3.0	340
Horizontal 3-line						
RT8132-6-6M0	6	9.5	6	27	1.1	80
RT8132-8-4M8	8	12.5	4.8	17	1.3	90
RT8132-10-4M0	10	16	4	15	1.5	110
RT8132-12-3M6	12	19	3.6	12	1.6	120
RT8132-16-3M0	16	27	3	8	1.8	170
RT8132-20-2M5	20	32	2.5	7	2.1	190
RT8132-25-1M5	25	40	1.5	3.5	2.4	240
RT8132-32-1M2	32	51	1.2	2.5	2.4	240
RT8132-40-0M7	40	64	0.7	1.9	2x1.9	270
RT8132-50-0M5	50	80	0.5	1.2	2x2.2	290
RT8132-63-0M3	63	100	0.3	0.7	2x2.6	300
RT8132-85-0M2	85	135	0.2	0.5	2x3.0	360
Vertical 3-line						
RT8532-6-6M0	6	9.5	6	27	1.1	90
RT8532-8-4M8	8	12.5	4.8	17	1.3	90
RT8532-10-4M0	10	16	4	15	1.5	110
RT8532-12-3M6	12	19	3.6	12	1.6	120
RT8532-16-3M0	16	27	3	8	1.8	160
RT8532-20-2M5	20	32	2.5	7	2.1	190
RT8532-25-1M5	25	40	1.5	3.5	2.4	250
RT8532-32-1M2	32	51	1.2	2.5	2.4	250
RT8532-40-0M7	40	64	0.7	1.9	2x1.9	290
RT8532-50-0M5	50	80	0.5	1.2	2x2.2	290
RT8532-63-0M3	63	100	0.3	0.8	2x2.6	310
RT8532-85-0M2	85	135	0.2	0.5	2x3.0	370

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

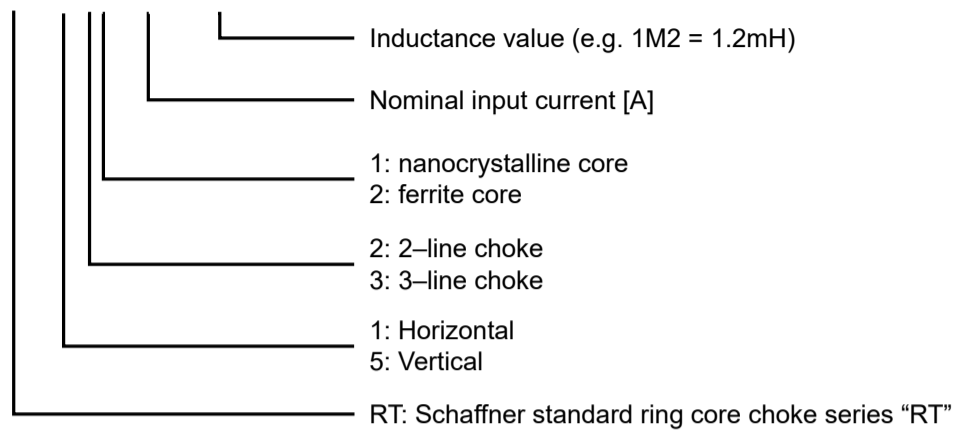
* typical current for forced cooling with 3 m/s. Due to the possible turbulences and degradation of the air stream within an equipment please consider thermal validation.

** typical stray inductance, max is 0.1% of Ln

*** Length of pin (Dimension P) is always 5.5 mm ± 1

Product selector

RT8xxx-xx-xMx



Examples: RT8532-16-3M0: Vertical 3-line choke for 16 A, with 3 mH ; RT8122-20-3M0: Horizontal 2-line choke for 20 A, with 3 mH

Distribution Inventory

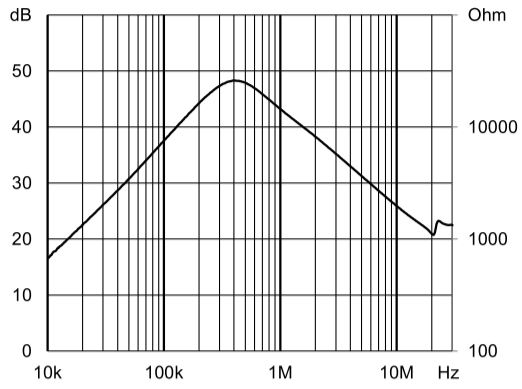
Up-to-date inventory levels for global distributors is available at

<https://products.schaffner.com/stock>

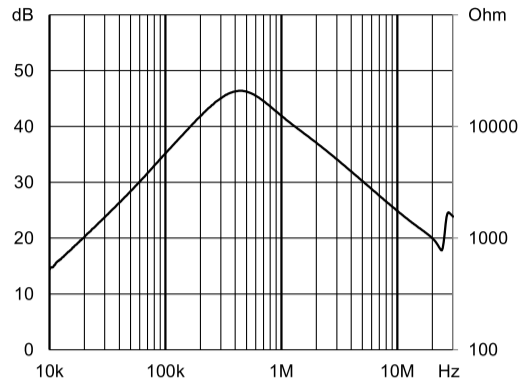
Typical Choke Attenuation And Impedance - 2-Line Versions

Per CISPR 17; 50 Ω/50 Ω asym

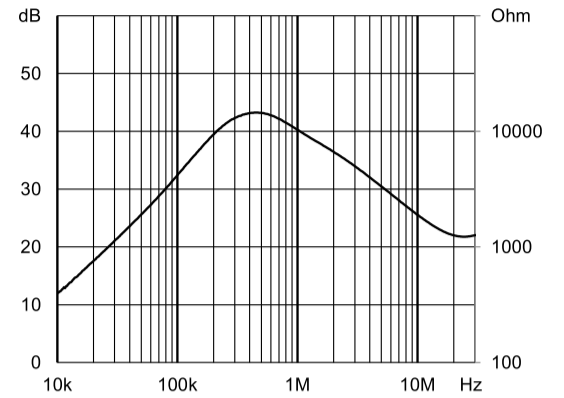
RT8x22-6-10M



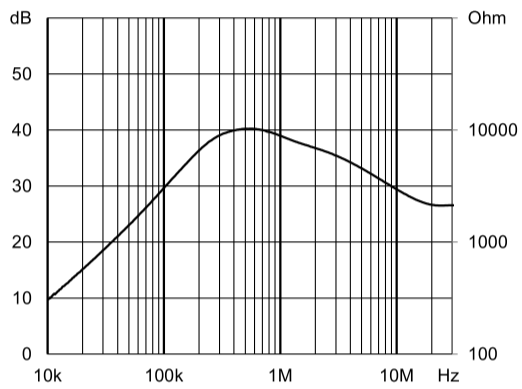
RT8x22-8-8M0



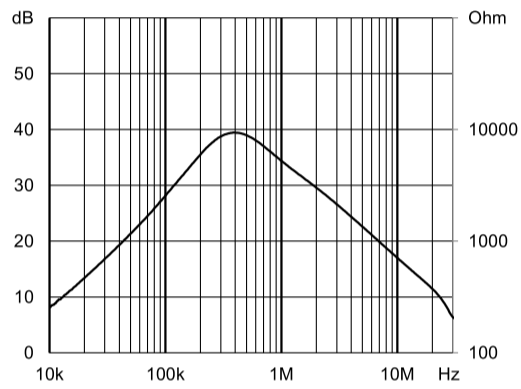
RT8x22-10-6M0



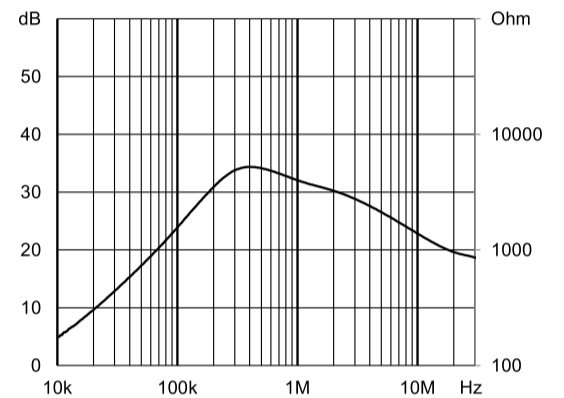
RT8x22-12-5M0



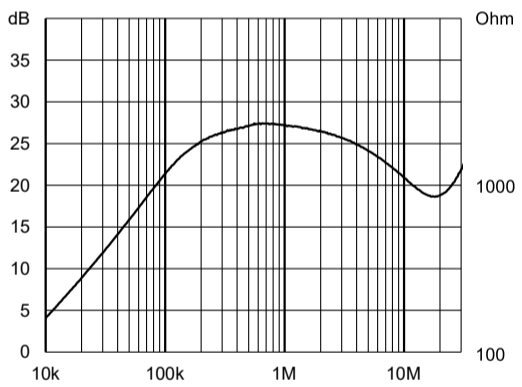
RT8122-16-4M0



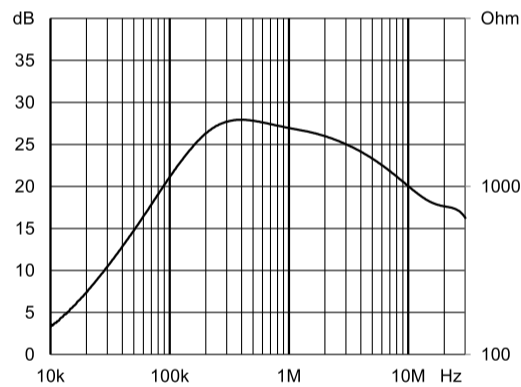
RT8122-20-3M0



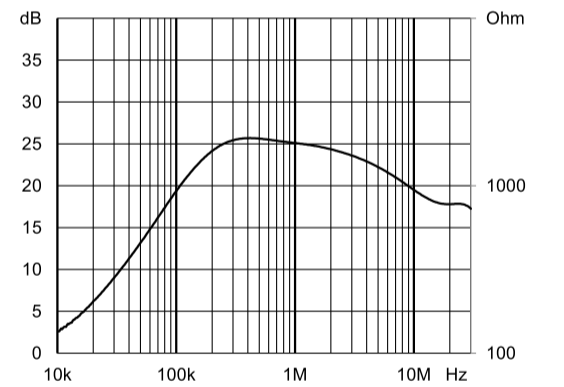
RT8x22-25-2M5



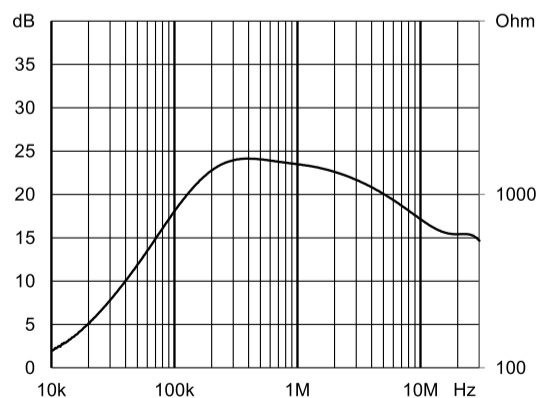
RT8x22-32-1M5



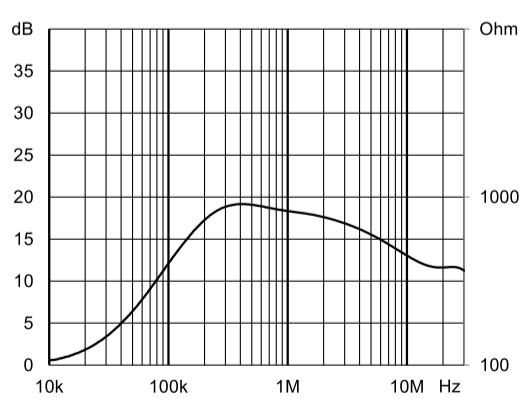
RT8x22-40-1M2



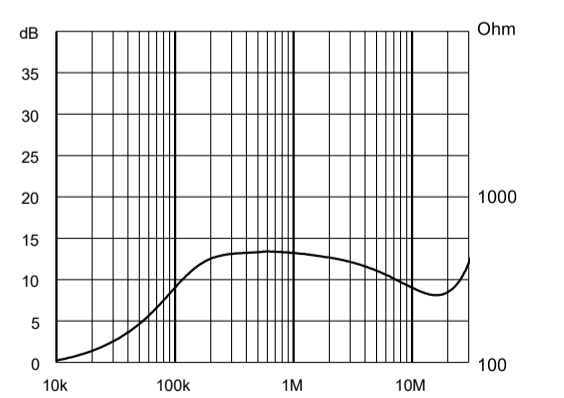
RT8x22-50-1M0



RT8x22-63-0M5



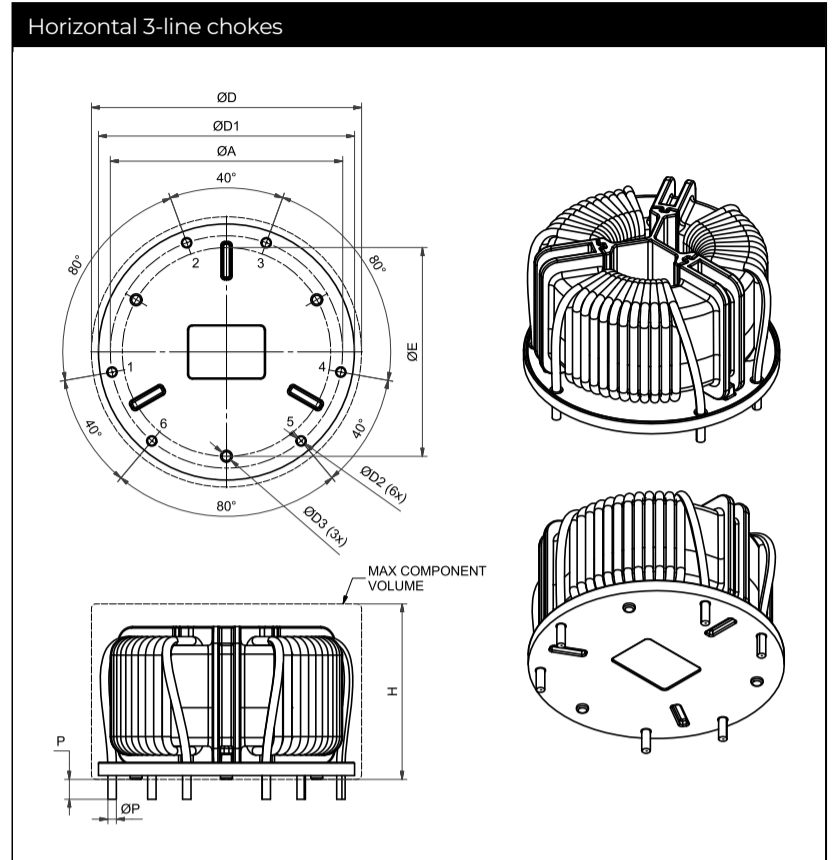
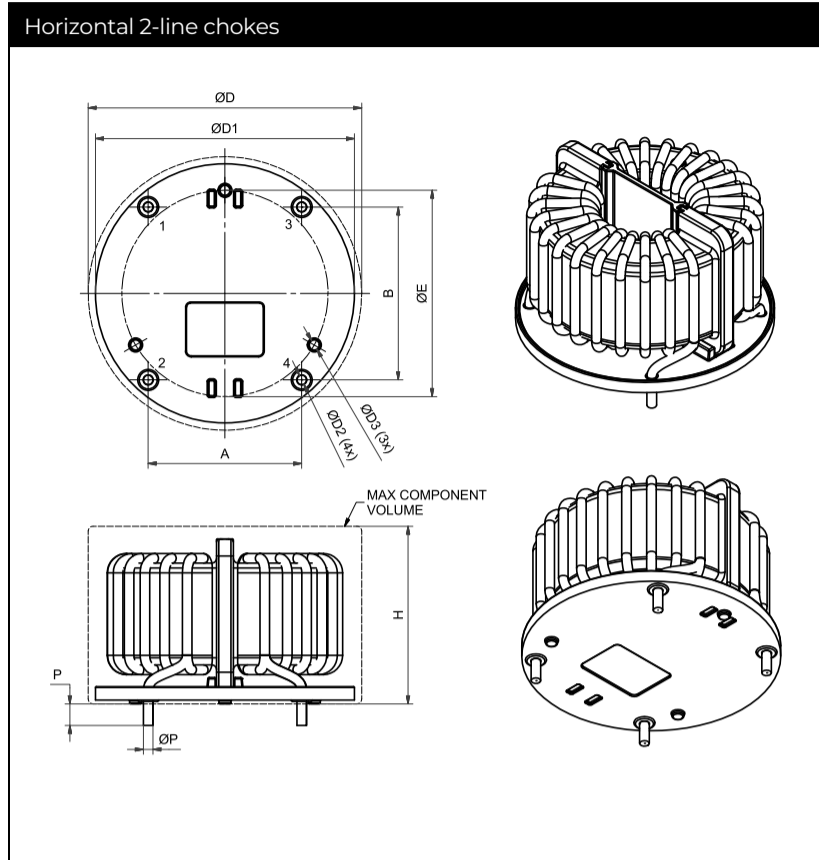
RT8x22-85-0M4



Mechanical Data: Horizontal Chokes (2-line And 3-line) 6A - 20A

All dimensions in mm; 1 inch = 25.4 mm

Tolerances according: ISO 2768-m/EN 22768-m



Dimensions

	A	B	ØD	H	ØD1	ØD2	ØD3	ØE
	(±0.5)	(±0.5)	(max)	(max)	(±0.5)			
2-Line Chokes								
RT8122-6-10M0, RT8122-8-8M0, RT8122-10-6M0	21	25	45	34	42	1.5	2.5	36
RT8122-12-5M0, RT8122-16-4M0	26	30	51	33	48	1.9	2.5	40
RT8122-20-3M0	32	36	57	37	54	2.1	2.5	43
3-Line Chokes								
RT8132-6-6M0, RT8132-8-4M8	38	-	46	34	43	1.4	2.5	35
RT8132-10-4M0, RT8132-12-3M6	44	-	51	33	48	1.7	2.5	40
RT8132-16-3M0, RT8132-20-2M5	49	-	57	37	54	2.3	2.5	44

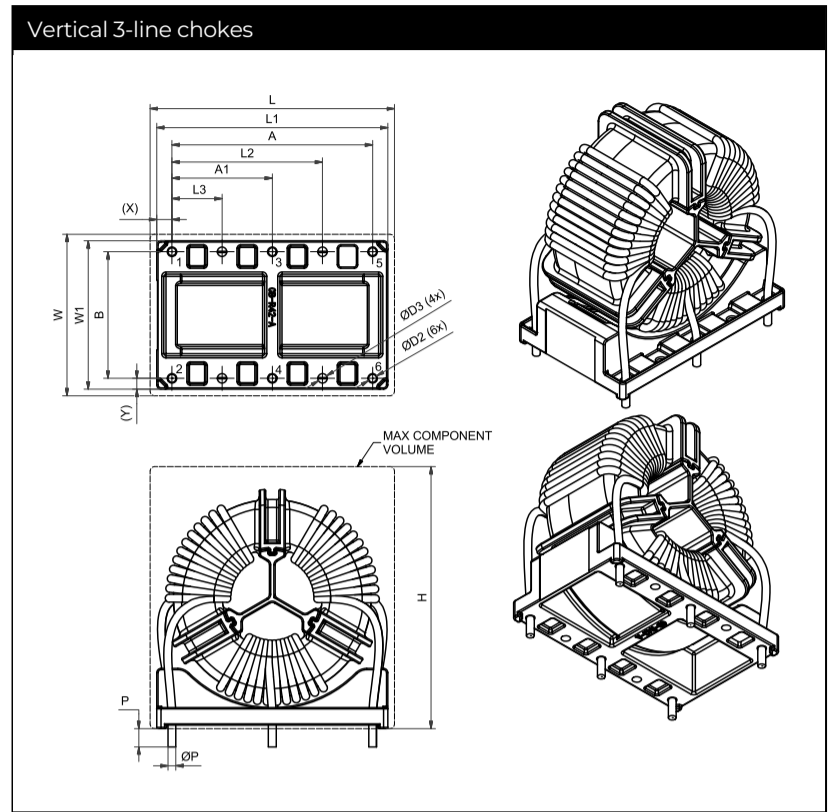
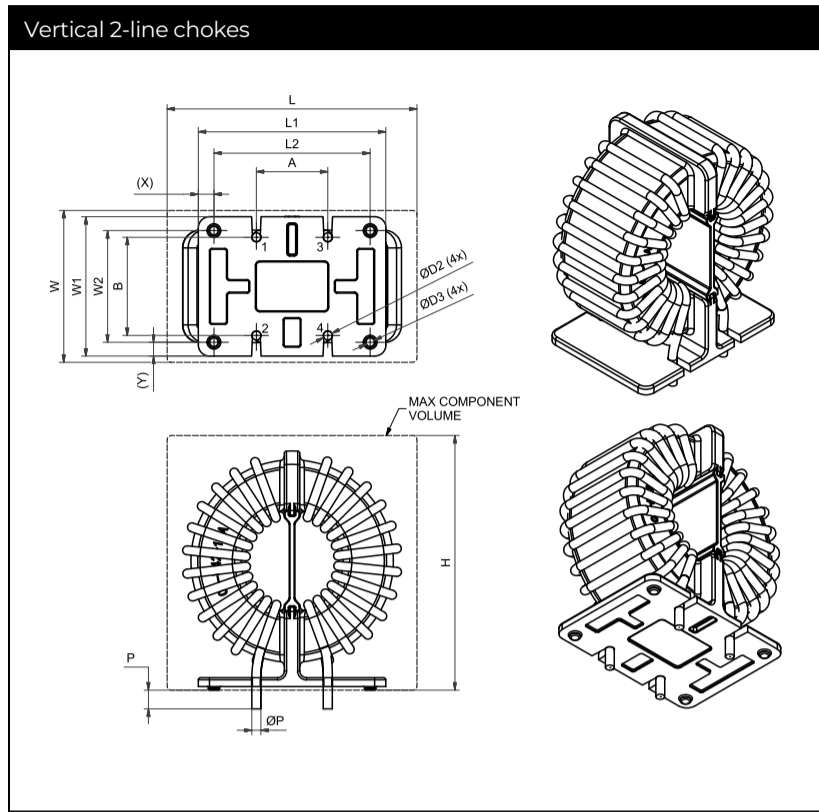
Pin material: Copper (base), Sn (final plating typical thickness 0.15 mm; composition: Sn-1.2Ag-4Cu or SN-3Cu-0.25Ni)

Please visit www.schaffner.com to find more details on filter connections.

Mechanical Data: Vertical Chokes (2-line And 3-line) 6A - 20A

All dimensions in mm; 1 inch = 25.4 mm

Tolerances according: ISO 2768-m/EN 22768-m



Dimensions

	A	A1	B	L	W	H	L1	L2	L3	W1	W2	ØD2	ØD3	X	Y
	(±0.5)	(±0.5)	(±0.5)	(max)	(max)	(max)	(±0.5)	(±0.5)		(±0.5)	(±0.5)				
2-Line Chokes															
RT8522-6-10M0, RT8522-8-8M0, RT 8522-10-6M0	16	-	20	43	32	44	32	26	-	27.8	22	1.5	2.5	3	2.9
RT8522-12-5M0, RT8522-16-4M0	16	-	22	50	32	52	39	33	-	27	23	1.9	2.5	3	2
RT8522-20-3M0	16	-	22	56	32	57	42	35	-	31.2	25	2.1	2.5	3.5	3.1
3-Line Chokes															
RT8532-6-6M0, RT8532-8-4M8	36	18	24	44	32	47	41	27	9	29	-	1.4	1.4	2.5	2.5
RT8532-10-4M0, RT8532-12-3M6	38	19	24	49	34	53	46	28.5	9.5	31	-	1.7	1.7	4	3.5
RT8532-16-3M0, RT8532-20-2M5	46	23	29	56	37	60	53	34.5	11.5	34	-	2.2	2.2	3.5	2.5

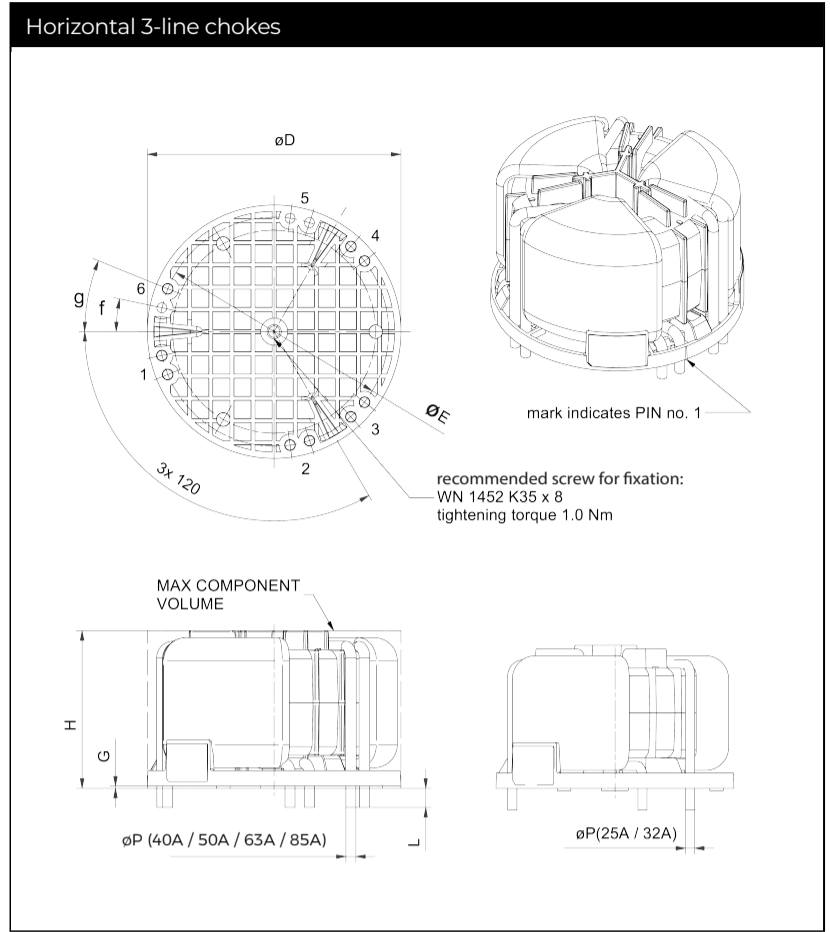
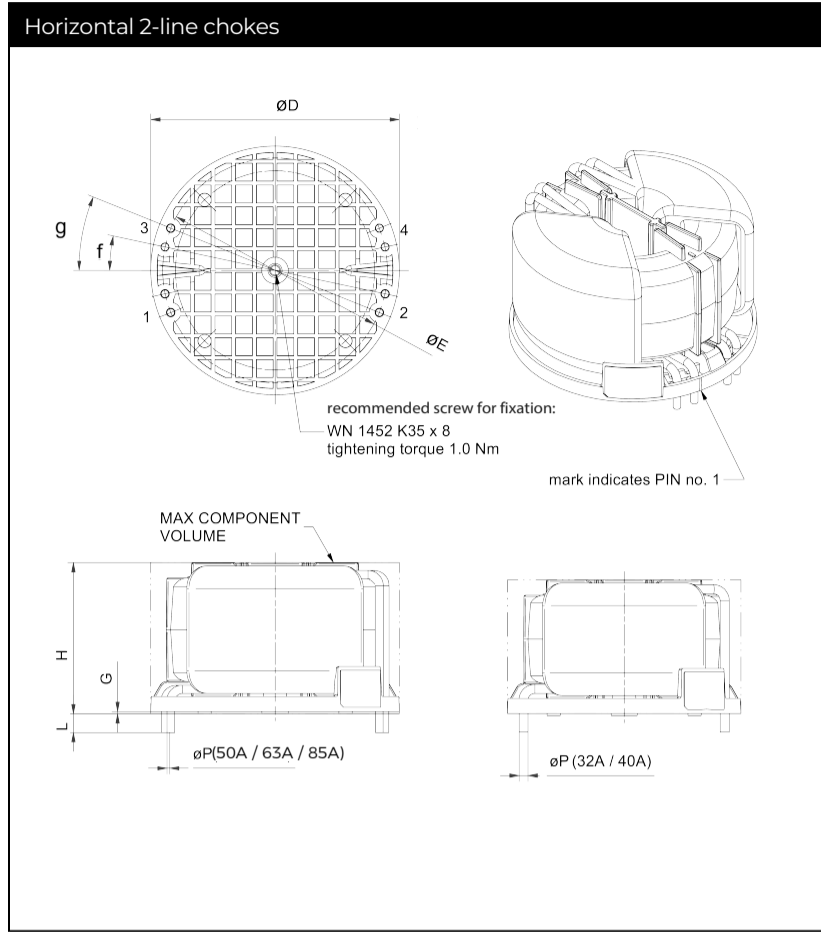
Pin material: Copper (base), Sn (final plating typical thickness 0.15 mm; composition: Sn-1.2Ag-4Cu or SN-3Cu-0.25Ni)

Please visit www.schaffner.com to find more details on filter connections.

Mechanical Data: Horizontal Chokes 25A - 85A

All dimensions in mm; 1 inch = 25.4 mm

Tolerances according: ISO 2768-m/EN 22768-m



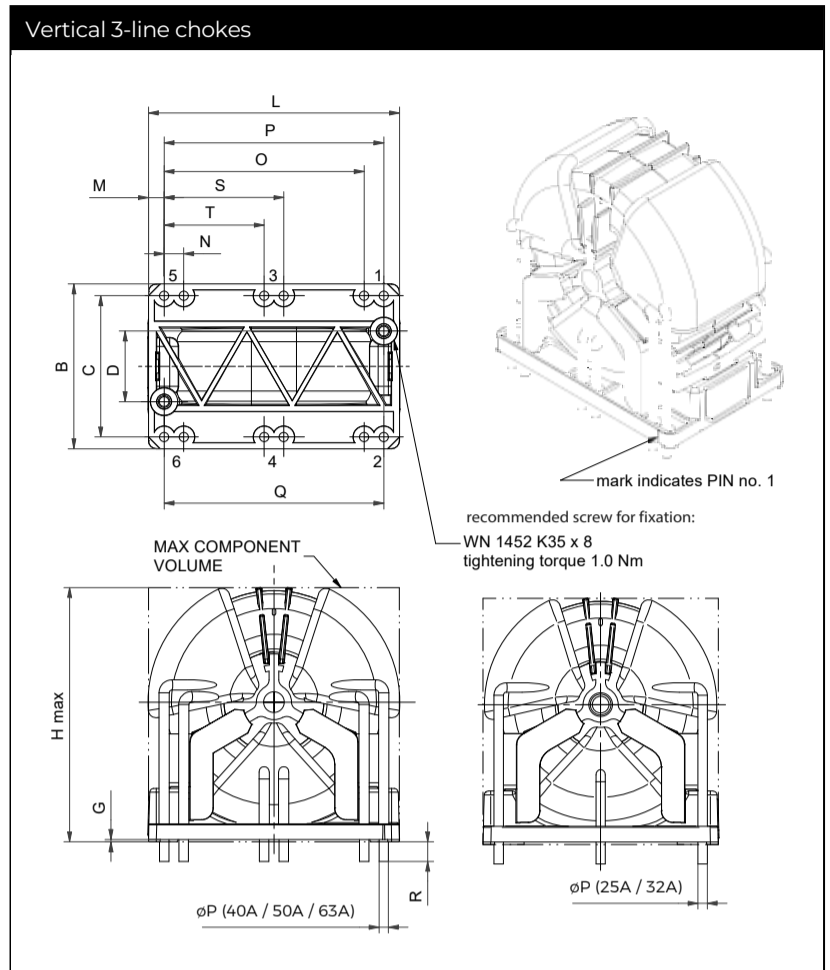
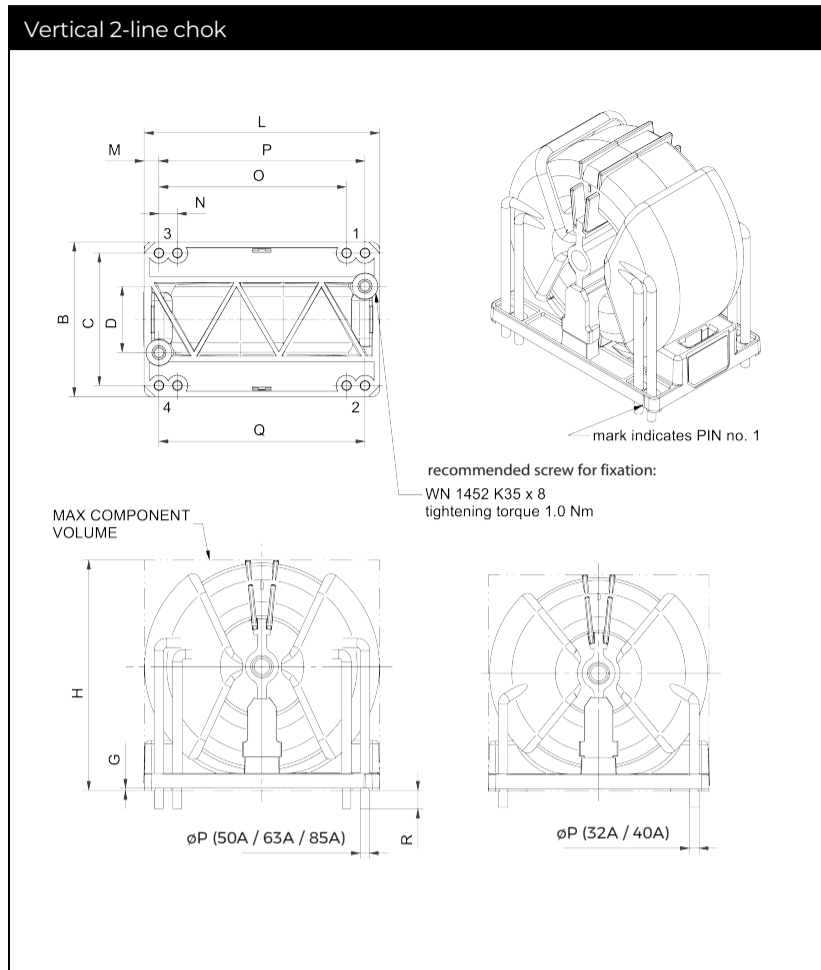
Dimensions

	$\varnothing D$	H	G	$\varnothing E$	f	g	L
	± 0.2	(max)	± 0.1	± 0.2	$\pm 1^\circ$	$\pm 1^\circ$	± 0.5
2-Line Chokes							
RT8122-25-2M5	56	34	0.6	49	15°		5
RT8122-32-1M5, RT8122-40-1M2	62	37	0.6	55.4	15°		5
RT8122-50-1M0, RT8122-63-0M5	66	41	0.6	59.8	12°	22°	5
RT8122-85-0M4	73.5	47	0.6	64.8	12°	22°	5
3-Line Chokes							
RT8132-25-1M5, RT8132-32-1M2	62	38	0.6	55.4	15°		5
RT8132-40-0M7, RT8132-50-0M5, RT8132-63-0M3	66	42	0.6	59.8	12°	22°	5
RT8132-85-0M2	73.5	46	0.6	64.8	12°	22°	5

Mechanical Data: Vertical Chokes 25A - 85A

All dimensions in mm; 1 inch = 25.4 mm

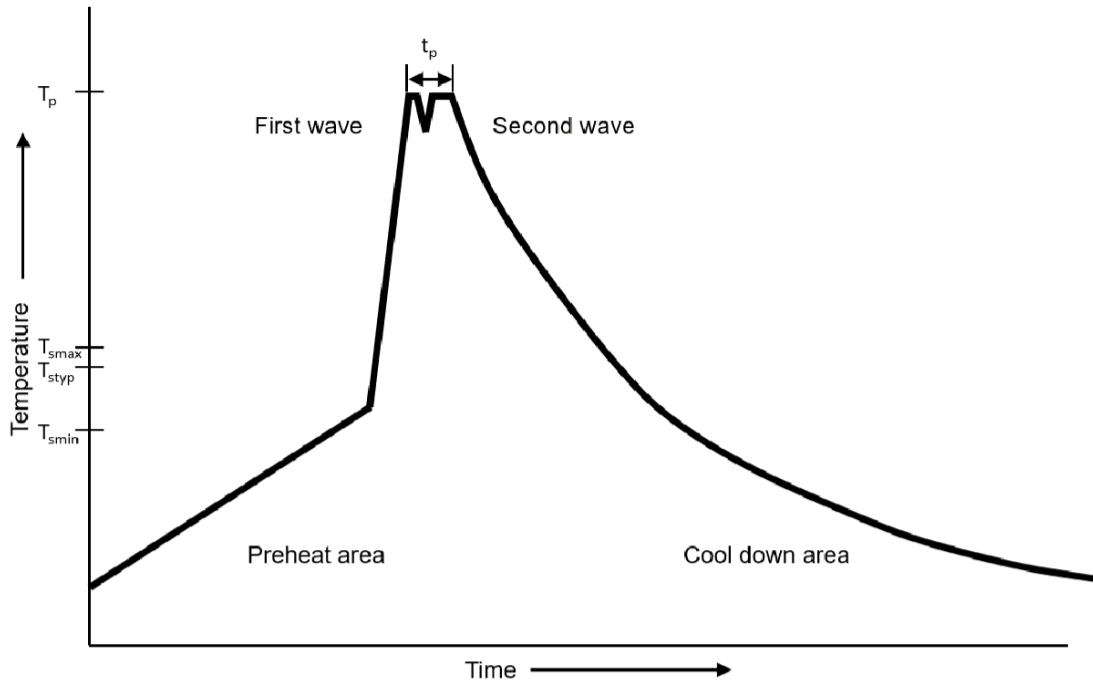
Tolerances according: ISO 2768-m/EN 22768-m



Dimensions

	H	G	B	C	D	L	M	N	O	P	Q	S	T	R
		±0.1	±0.2	±0.4	±0.2	±0.2	±0.1	±0.4	±0.4	±0.4	±0.4	±0.4	±0.2	±0.5
2-Line Chokes														
RT8522-25-2M5	55	0.6	36	30	12	55	4							
RT8522-32-1M5, RT8522-40-1M2	60	0.6	38	32	12	60	4			52	46			5
RT8522-50-1M0, RT8522-63-0M5	64	0.6	42	36	18	64	4	5	51	56	56			5
RT8522-85-0M4	70	0.6	46	40	18	71	4.5	6	56	62	56			5
3-Line Chokes														
RT8532-25-1M5, RT8532-32-1M2	63	0.6	38	32	12	60	4			52	46		26	5
RT8532-40-0M7, RT8532-50-0M5, RT8532-63-0M3	67	0.6	42	36	18	64	4	5	51	56	56	30.5	25.5	5
RT8532-85-0M2	74	0.6	46	40	18	71	4.5	6	56	62	56	34	28	5

Soldering Profile



Reference IEC61760-1:2020

Profile Feature	Lead (Pb) Free Solder
Preheat	Temperature min. (T_{smin}) 100 °C
	Temperature typ. (T_{styp}) 120 °C
	Temperature max. (T_{smax}) 130 °C
	Time (T_{smin} to T_{smax})(t_s) 70 seconds
Δ Preheat to max Temperature	150 °C max.
Peak temperature (T_p)	250 °C – 260 °C
Time at peak temperature (t_p)	6 seconds max. 2 seconds each wave
Ramp-down rate	~ 2 K/s min. ~ 3.5 K/s typ. ~ 5 K/s max.
Time 25 °C to 25 °C	4 minutes

Manual solder

350 °C \pm 10 °C, 10 seconds \pm 1s (by soldering iron).

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