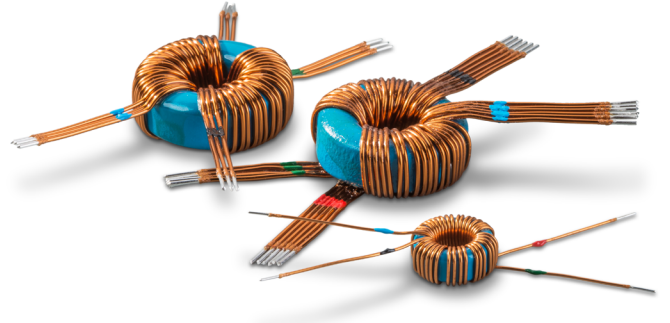


VIA Series

EMI filter chokes



1. Description

Filter chokes of VIA series are designed to work as a part of LC filters in combination with VOLTBRICKS power supply modules, in order to suppress radio interference in different power supply units and systems.

High inductance and no resonance in a wide frequency range allow the use these chokes in input circuits (double-wound choke), as well as in output circuits of converters with one (double-wound choke) or two (triple-wound choke) output channels.

VIA chokes are impregnated with special varnish. Heat-dissipating dielectric compound impregnation (for 500 V input-output isolation) is by additional request.

1.1. Additional information

1.1.1. Description on the manufacturer's website

<https://voltbricks.com/product/via>



1.1.2. Sales department

+65 6950 0011

sales@voltbricks.com

1.1.3. Technical support

support@voltbricks.com

2. Features

- Type: input, output
- Output current from 0,06 to 20A
- Case operating temperature range -60 ... +120 °C
- Number of output channels: 1, 2
- Weight no more than 15 g

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4. Operational guideline:

1. Filter elements and shunting capacitors should be mounted very close to the converter terminals: at distance < 50 mm.
2. Filter chokes mounting and fastening inside of an equipment must be carried out with reference to mechanical loads, in which the equipment operates.
3. It is allowed to fasten the choke with a screw through the central hole. In this case no any mechanical damage of the choke is allowed. Also an insulation between the choke and metal fasteners should be provided.
4. It is allowed to glue the filter chokes with glue-sealant.
5. It is allowed to cover filter chokes and its terminals with varnish.
6. Cutting of wire leads is allowed during chokes mountig, but:
 - the minimum permissible length of the choke wire lead is 6 mm from the termination site;
 - the minimum allowable distance from output termination place to the place of soldering is 3 mm;
 - the length of the choke leads is 20 mm.
7. It is recommended to solder the leads of filter chokes with an electric soldering iron of power not exceeding 80W, at temperature no more than 300 °C, soldering time up to 5 seconds per one pin. Soldering of leads is allowed no more than 3 times.
8. The operation of the choke is allowed at passing currents in the range from 0 to $1.2 \times I_{NOM}$. The voltage drop on the choke, in case of throughput current is more than I_{NOM} , is not regulate.
9. The warranty period is 12 months from the date of manufacture, and for rechecked filtration throttles - from the date of rechecking.

5. Product line

Product name	Dimensions (D × H), mm	Winding wire diameter per conductors qty. (d × n), mm	Passing current, A	Voltage drop, mV	Power dissipation, mW	Inductance, μH	
						min	nom
VIA7,5	Core inner diameter 5,25 mm						
VIA7,5A12	13×7	0,56×1	1,02	16,07	32,8	453,1	589
VIA7,5A27	13×7	0,4×1	0,63	26,04	32,8	1019,4	1325,2
VIA7,5A60	13×7	0,28×1	0,29	24,09	14	1966,4	2556,3
VIA7,5B03	12×6	0,56×1	1,5	23,62	70,9	453,1	589
VIA7,5B3,3	12,5×6,5	0,56×1	1,5	23,62	70,9	453,1	589
VIA7,5B05	12,5×6,5	0,56×1	1,5	23,62	70,9	453,1	589
VIA7,5B09	12,5×6,5	0,45×1	0,83	23,64	39,2	707,9	920,3
VIA7,5B12	12,5×6,5	0,4×1	0,63	26,03	32,8	1019,4	1325,2
VIA7,5B15	12,5×6,5	0,355×1	0,5	28,4	28,4	1258,5	1636
VIA7,5B20	12,5×6,5	0,315×1	0,38	31,71	24,1	1812,2	2355,8
VIA7,5B24	12,5×6,5	0,28×1	0,31	33,73	20,9	1966,4	2556,3
VIA7,5B27	12,5×6,5	0,25×1	0,28	45,76	25,6	3023,5	3930,5
VIA7,5B48	12,5×6,5	0,2×1	0,16	50,81	16,3	5033,9	6544
VIA7,5B68	12,5×6,5	0,18×1	0,11	44,92	9,9	5549,8	7214,8
VIA7,5B0303	13,5×7	0,45×1	0,75	15,88	35,7	314,6	409
VIA7,5B3,33,3	13,5×7	0,45×1	0,75	15,88	35,7	314,6	409
VIA7,5B0505	13,5×7	0,45×1	0,75	15,88	35,7	314,6	409
VIA7,5B0909	13,5×7	0,355×1	0,42	18,03	22,7	616,6	801,6
VIA7,5B1212	13,5×7	0,315×1	0,31	18,63	17,3	805,4	1047
VIA7,5B1515	13,5×7	0,28×1	0,25	19,85	14,9	909,2	1182
VIA7,5B2020	13,5×7	0,25×1	0,19	20,59	11,7	1135,8	1476,5
VIA7,5B2424	13,5×7	0,2×1	0,16	33,75	16,2	1966,4	2556,3

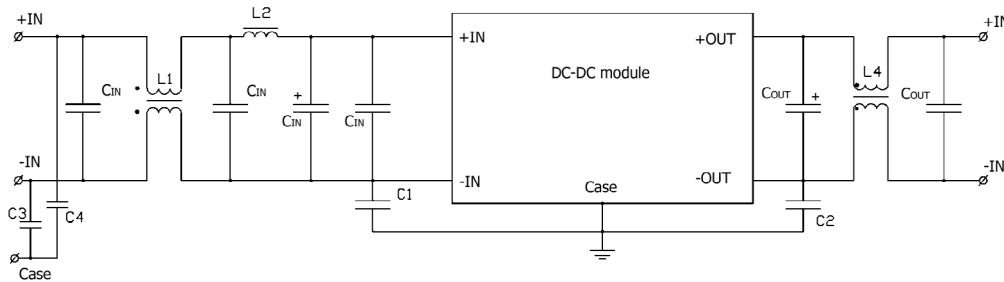
Product name	Dimensions (D × H), mm	Winding wire diameter per conductors qty. (d × n), mm	Passing current, A	Voltage drop, mV	Power dissipation, mW	Inductance, µH	
						min	nom
VIA7,5B2727	13,5×7	0,18×1	0,14	41,26	17,3	2645,9	3439,7
VIA7,5B4848	13,5×7	0,15×1	0,1	47,27	14,2	3426,2	4454
VIA7,5B6868	13,5×7	0,15×1	0,06	28,37	5,1	3426,2	4454
VIA15	Core inner diameter 7,16 mm						
VIA15A12	17×10	0,63×1	2,04	28,75	117,3	515,1	669,6
VIA15A27	17×10	0,5×1	1,3	30,07	78,2	586	761,9
VIA15A60	17×10	0,355×1	0,59	39,3	46,4	1547,5	2011,8
VIA15B03	18×10	0,56×2	3,0	17,11	102,7	146,5	190,5
VIA15B05	18×10	0,56×2	3,0	15,77	94,6	112,2	145,8
VIA15B06	18×10	0,56×2	3,0	15,77	94,6	112,2	145,8
VIA15B09	18×10	0,63×1	1,7	23,96	81,5	515,1	669,6
VIA15B12	18×10	0,56×1	1,25	20,98	52,5	448,7	583,3
VIA15B15	18×10	0,5×1	1,0	25,36	50,7	741,7	964,2
VIA15B20	18×10	0,45×1	0,75	26,39	39,6	1009,6	1312,4
VIA15B24	18×10	0,4×1	0,63	30,03	37,8	1211	1574,3
VIA15B27	18×10	0,355×1	0,56	37,2	41,8	1547,5	2011,8
VIA15B48	18×10	0,315×1	0,31	31,13	19,3	2344,2	3047,4
VIA15B68	18×10	0,28×1	0,22	30,08	13,2	2804,3	3047,4
VIA15B0303	18×10	0,56×1	1,5	21,15	95,2	277	360,1
VIA15B3,33,3	18×10	0,56×1	1,5	21,15	95,2	277	360,1
VIA15B0505	18×10	0,56×1	1,5	21,15	95,2	277	360,1
VIA15B0909	18×10	0,5×1	0,8	14,95	35,9	329,6	428,5
VIA15B1212	18×10	0,45×1	0,63	14,16	30,5	448,7	583,3
VIA15B1515	18×10	0,4×1	0,5	16,98	25,5	515,1	669,6
VIA15B2020	18×10	0,355×1	0,38	19,57	14,9	826,4	1074,3
VIA15B2424	18×10	0,315×1	0,31	21,86	20,3	1009,6	1312,4
VIA15B2727	18×10	0,28×1	0,28	29,66	24,9	1318,6	1714,2
VIA15B4848	18×10	0,25×1	0,16	21,17	10,2	1547,5	2011,8
VIA15B6868	18×10	0,2×1	0,11	24,03	7,9	1794,8	2333,2
VIA30	Core inner diameter 8,5 mm						
VIA30A12	20×10	0,63×2	4,08	28,32	231,1	401,3	521,6
VIA30A27	20×10	0,5×2	2,6	35,53	184,8	713,4	927,4
VIA30A60	20×10	0,5×1	1,2	57,01	136,8	2620,6	3406,8
VIA30B03	20×10	0,5×4	6,0	24,49	239,9	178,3	231,8
VIA30B3,3	20×10	0,5×4	6,0	24,49	239,9	178,3	231,8
VIA30B05	20×10	0,5×4	6,0	24,49	239,9	178,3	231,8
VIA30B09	20×10	0,63×2	3,4	23,6	160,5	401,3	521,6
VIA30B12	20×10	0,56×2	2,5	25,53	127,7	599,4	779,2
VIA30B15	20×10	0,5×2	2,0	27,33	109,3	713,4	927,4
VIA30B20	20×10	0,63×1	1,5	36,63	109,9	1605,1	2086,6
VIA30B24	20×10	0,56×1	1,25	42,08	105,2	1981,5	2576
VIA30B27	20×10	0,56×1	1,11	37,37	83	1981,5	2576
VIA30B48	20×10	0,45×1	0,63	41,05	51,7	3348,8	4353,4
VIA30B68	20×10	0,355×1	0,44	55,14	48,5	5072,7	6594,6
VIA30B0303	20×10	0,5×2	3,0	27,24	245,2	242,7	315,6
VIA30B3,33,3	20×10	0,5×2	3,0	27,24	245,2	242,7	315,6
VIA30B0505	20×10	0,5×2	3,0	27,24	245,2	242,7	315,6
VIA30B0909	20×10	0,63×1	1,7	29,57	150,8	713,4	927,4

Product name	Dimensions (D × H), mm	Winding wire diameter per conductors qty. (d × n), mm	Passing current, A	Voltage drop, mV	Power dissipation, mW	Inductance, µH	
						min	nom
VIA30B1212	20×10	0,56×1	1,25	31,04	116,4	971	1262,2
VIA30B1515	20×10	0,5×1	1,0	34,67	104	1268,2	1648,6
VIA30B2020	20×10	0,45×1	0,75	33,65	75,7	1431,7	1861,2
VIA30B2424	20×10	0,4×1	0,63	41	77,5	1981,5	2576
VIA30B2727	20×10	0,4×1	0,55	35,78	59	1981,5	2576
VIA30B4848	20×10	0,315×1	0,32	40,58	39	3096,2	4025
VIA30B6868	20×10	0,28×1	0,22	38,97	25,7	388,8	5049
VIA60 Core inner diameter 8,95 mm							
VIA60A12	24×12	0,63×4	7,65	25,95	397	367,1	477,3
VIA60A27	24×12	0,63×2	5,04	41,54	418,7	606,9	788,9
VIA60A60	24×12	0,63×1	2,38	80,91	385,1	3304,1	4295,3
VIA60B03	24×12	0,63×5	10,0	21,29	425,9	187,3	243,5
VIA60B3,3	24×12	0,63×5	10,0	21,29	425,9	187,3	243,5
VIA60B05	24×12	0,63×5	10,0	21,29	425,9	187,3	243,5
VIA60B09	24×12	0,63×3	6,7	33,56	449,7	479,5	623,4
VIA60B12	24×12	0,63×3	5,0	25,04	250,4	479,5	623,4
VIA60B15	24×12	0,63×2	4,0	35,89	287,1	749,2	974
VIA60B20	24×12	0,63×2	3,0	26,91	161,5	749,2	974
VIA60B24	24×12	0,56×2	2,5	32,85	164,3	1078,9	1402,6
VIA60B27	24×12	0,56×2	2,22	32,85	164,3	1078,9	1402,6
VIA60B48	24×12	0,56×1	1,25	60,4	151	4315,6	5610,2
VIA60B68	24×12	0,5×1	0,9	60,51	108,9	5461,9	7100,5
VIA80 Core inner diameter 8,95 mm							
VIA80A27	24×12	0,63×3	6,72	33,65	452,4	479,5	623,4
VIA80B27	24×12	0,63×3	2,96	14,82	87,8	479,5	623,4
VIA120 Core inner diameter 8,95 mm							
VIA120A12	24×12	0,63×8	15,9	15,36	488,5	67,4	87,7
VIA120A27	24×12	0,63×4	10,1	30,57	617,5	269,7	350,6
VIA120A60	24×12	0,63×2	4,76	42,71	406,6	749,2	974
VIA120B03	24×12	0,63×10	20,0	12,53	501,6	30	39
VIA120B3,3	24×12	0,63×10	20,0	12,53	501,6	30	39
VIA120B05	24×12	0,63×10	20,0	12,53	501,6	30	39
VIA120B08	24×12	0,63×6	13,3	20,36	541,8	119,9	155,8
VIA120B09	24×12	0,63×6	13,3	20,36	541,8	119,9	155,8
VIA120B12	24×12	0,63×6	10,0	15,31	306,3	119,9	155,8
VIA120B15	24×12	0,63×4	8,0	24,21	387,4	269,7	350,6
VIA120B20	24×12	0,63×4	6,0	18,16	217,9	269,7	350,6
VIA120B24	24×12	0,56×4	5,0	21,37	213,7	367,1	477,3
VIA120B27	24×12	0,56×4	4,44	18,98	168,5	367,1	477,3
VIA120B48	24×12	0,56×2	2,5	30,56	152,8	906,6	1178,5
VIA120B68	24×12	0,5×2	1,76	28,9	101,7	1078,9	1402,6

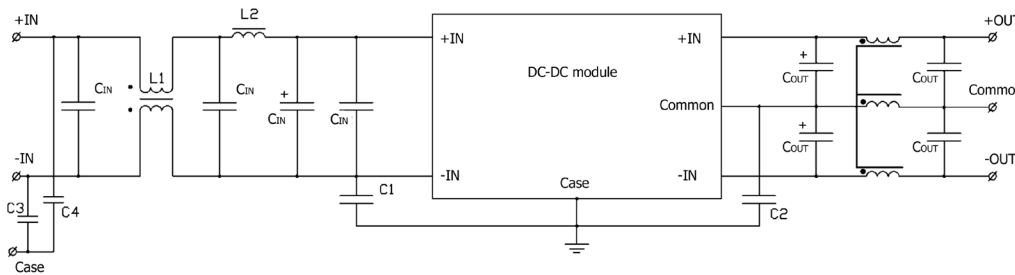
6. Connection diagrams

6.1. Connecting of power supply modules with filter chokes

Capacitors C1, C2, C3, C4 - with a capacity of 3300 ... 15000 pF with a maximum voltage corresponding to the required «input-case», «output-case» insulation voltage.



Pic. 1. DC-DC converter with 1 output channel



Pic. 2. DC-DC converter with 2 output channels

6.2. Capacitors parameters

6.2.1. Ceramic capacitors C_{IN} , μF

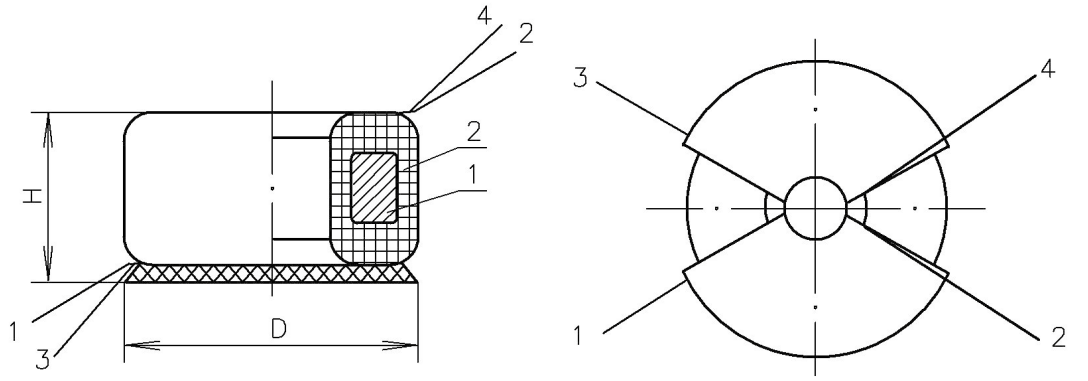
Output power, W	$U_{NOM. IN} = 12VDC$	$U_{NOM. IN} = 24; 27VDC$	$U_{NOM. IN} = 60VDC$
3...6	1...1,5	0,47...1	0,22...0,47
7,5...10	1,5...2,2	1...1,5	0,47...1
15, 20	2,2...3,3	1,5...2,2	1...1,5
30...50	3,3...4,7	2,2...3,3	1,5...2,2
60...100	4,7...6,8	3,3...4,7	2,2...3,3
120...200	10...15	4,7...6,8	3,3...4,7
320	—	10...20	4,7...6,8

6.2.2. Tantalum capacitors C_{IN} and C_{OUT} , μF

Output power, W	$U_{NOM. IN} = 12VDC$		$U_{NOM. IN} = 24; 27VDC$		$U_{NOM. IN} = 60VDC$	
	C_{OUT}	C_{IN}	C_{OUT}	C_{IN}	C_{OUT}	C_{IN}
3...6	0,47...1	10	0,47...1	5	0,47...1	3
7,5...10	1...1,5	15	1...1,5	10	1...1,5	5
15, 20	1,5...2,2	30	1,5...2,2	15	1,5...2,2	10
30...50	2,2...3,3	40	2,2...3,3	30	2,2...3,3	15
60...100	3,3...4,7	70	3,3...4,7	40	3,3...4,7	30
120...200	4,7...6,8	150	4,7...6,8	70	4,7...6,8	40
320	—	—	10...20	150	10...20	70

7. Drawings

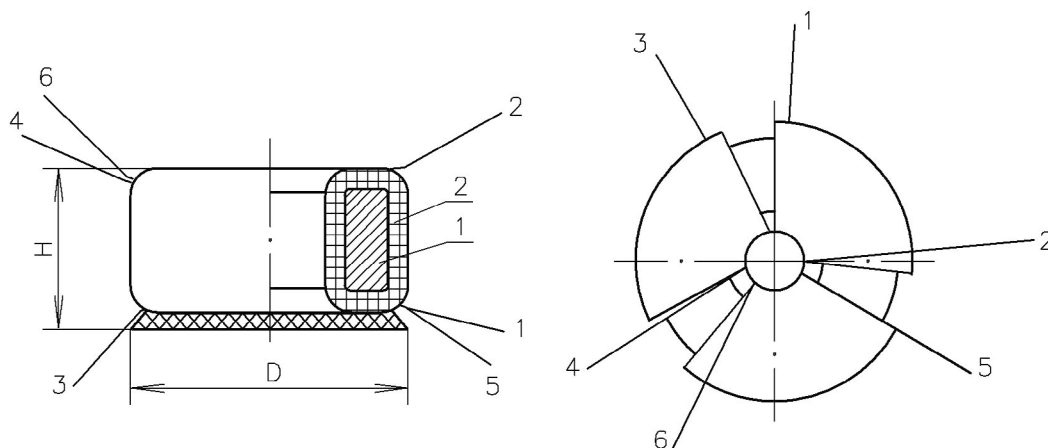
7.1. Filter choke VIAXXA(B)XX



Pic. 3. Designations: «1» - core; «2» - choke winding.

Вывод	1	2	3	4
Function	+IN (red marking)	+OUT (blue marking)	-IN (green marking)	-OUT (black marking)

7.2. Filter choke VIAXXBXXXX



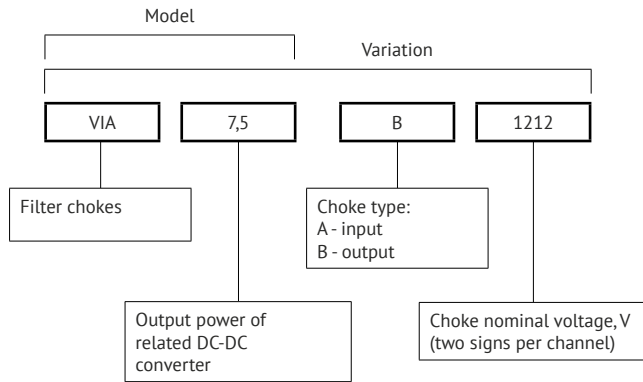
Pic. 4. Designations: «1» - core; «2» - choke winding.

Вывод	1	2	3	4	5	6
Function	+IN (red marking)	+OUT (blue marking)	COMMON IN (green marking)	COMMON OUT (black marking)	-IN (white marking)	-OUT (yellow marking)

8. Ordering information

8.1. Filter chokes designation

For more information, contact the sales department by phone +65 6950 0011 or e-mail sales@voltbricks.com



voltbricks

www.voltbricks.com info@voltbricks.com

VOLTBRICKS PTE. LTD.

105 Cecil street

#15-01 The OCTAGONE

Singapore 069534

+65 6950 0011

Manufacturer of reliable DC/DC converters and power
supply systems