

High Performance B Series RFI Line Filters

SB Series



UL Recognized
CSA Certified
VDE Approved



SB Series

- Enhanced performance version of our popular B Series of RFI line filters
- Small size with enhanced performance
- 30A version half the size of other 30A filters
- Low leakage version available that meets current requirements of VDE portable equipment and non-patient care medical equipment

Ordering Information



Electrical Schematic



Specifications

Maximum leakage current each Line to Ground:

	VSB Models	ESB Models
@ 120 VAC 60 Hz:	.75 mA	.22 mA
@ 250 VAC 50 Hz:	1.25 mA	.36 mA

Hipot rating (one minute):

Line to Ground:	2250 VDC
Line to Line:	1450 VDC

Rated Voltage (max):

250 VAC
250 VDC

Operating Frequency:

50/60 Hz

Rated Current:

6 to 30A

Operating Ambient Temperature Range

(at rated current I_r): -10°C to +40°C
In an ambient temperature (T_a) higher than +40°C the maximum operating current (I_o) is calculated as follows: $I_o = I_r \sqrt{(85-T_a)/45}$

Available Part Numbers

6ESB1	6VSB1
10ESB1	10VSB1
10ESB6	10VSB6
20ESB1	20VSB1
20ESB6	20VSB6
30ESB6	30VSB6

High Performance B Series RFI Line Filters *(continued)*

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Case Styles

6ESB1 & 6VSB1



Typical Dimensions:

- Line/Load Terminals (4): .250 [6.3] with .07 [1.8] Dia. hole
- Ground Terminal (1): .250 [6.3] with .07 x .16 [1.8 x 3.8] slot
- Mounting Holes (2): .188 [4.75] Dia.

10ESB1, 10VSB1, 20ESB1 & 20VSB1



Typical Dimensions:

- Line/Load Terminals (4): .250 [6.3] with .07 [1.8] Dia. hole
- Ground Terminal (1): .250 [6.3] with .07 x .16 [1.8 x 3.8] slot
- Mounting Holes (2): .188 [4.75] Dia.

ESB6 & VSB6



Typical Dimensions:

- Terminals (5): 8-32, Torque 18 lbf-in. [2.03 N-m] max. ± 2 [22]
- Mounting Holes (2): .188 [4.75] Dia.

Case Dimensions

Part No.	A (max)	B (max)	C (max)	D $\pm .015$ $\pm .38$	E (max)
6ESB1,	3.36	1.82	0.91	2.375	2.78
6VSB1	<i>85.34</i>	<i>46.23</i>	<i>23.11</i>	<i>60.325</i>	<i>70.61</i>
10ESB1,	3.36	1.82	1.28	2.375	2.78
10VSB1	<i>85.34</i>	<i>46.23</i>	<i>32.51</i>	<i>60.325</i>	<i>70.61</i>
10ESB6,	3.47	1.82	1.53	2.375	2.78
10VSB6	<i>88.14</i>	<i>46.23</i>	<i>38.86</i>	<i>60.325</i>	<i>70.61</i>
20ESB1,	3.85	2.07	1.31	2.938	3.35
20VSB1	<i>97.79</i>	<i>52.58</i>	<i>33.27</i>	<i>74.625</i>	<i>85.09</i>
20ESB6,	4.00	2.07	1.53	2.938	3.35
20VSB6	<i>101.60</i>	<i>52.58</i>	<i>38.86</i>	<i>74.625</i>	<i>85.09</i>
30ESB6,	4.92	2.07	1.53	3.947	4.33
30VSB6	<i>124.97</i>	<i>52.58</i>	<i>38.86</i>	<i>100.254</i>	<i>109.98</i>

High Performance B Series RFI Line Filters *(continued)*

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Performance Data

Typical Insertion Loss

Measured in closed 50 Ohm system

ESB Models

6ESB1



10ESB1



10ESB6



20ESB1



20ESB6



30ESB6



VSB Models

6VSB1



10VSB1



10VSB6



20VSB1



20VSB6



30VSB6



— Common Mode / Asymmetrical (L-G)
— Differential Mode / Symmetrical (L-L)

High Performance B Series RFI Line Filters *(continued)*

SB Series

Performance Data *(continued)*

Minimum Insertion Loss

Measured in closed 50 Ohm system

Common Mode / Asymmetrical (Line to Ground)

Part No.	Frequency – MHz										
	.03	.05	.1	.15	.5	1	2	5	10	20	30
ESB Models											
6ESB1	3	8	13	17	31	37	40	47	50	58	62
10ESB1	3	9	15	19	31	39	41	44	47	54	51
10ESB6	3	9	14	18	31	39	41	44	47	54	54
20ESB1	3	7	13	15	30	35	37	39	40	46	40
20ESB6	3	7	13	16	30	35	39	40	44	58	46
30ESB6	3	7	13	17	30	34	37	40	42	49	58
VSB Models											
6VSB1	3	8	14	19	37	47	51	58	66	59	49
10VSB1	3	9	15	21	41	49	50	56	64	54	46
10VSB6	4	9	15	21	39	49	50	56	64	54	44
20VSB1	3	7	14	19	37	45	47	50	60	48	40
20VSB6	3	7	14	19	37	44	49	52	62	48	41
30VSB6	3	6	13	18	37	45	49	51	60	50	42

Differential Mode / Symmetrical (Line to Line)

Part No.	Frequency – MHz											
	.01	.03	.05	.1	.15	.5	1	2	5	10	20	30
ESB Models												
6ESB1	5	14	20	25	29	41	49	47	50	60	74	72
10ESB1	5	15	20	26	29	41	47	50	54	64	74	74
10ESB6	5	14	20	25	29	41	47	48	50	60	62	64
20ESB1	5	15	21	26	29	41	45	48	54	63	70	66
20ESB6	5	15	21	26	29	41	44	48	54	63	70	66
30ESB6	5	14	20	25	29	40	46	50	50	58	70	70
VSB Models												
6VSB1	5	14	20	25	29	40	41	57	66	78	56	62
10VSB1	5	15	21	26	29	39	40	60	64	67	67	64
10VSB6	5	14	20	25	29	39	40	60	64	68	70	64
20VSB1	5	15	20	26	29	40	42	60	68	70	70	67
20VSB6	5	15	21	26	29	39	38	58	68	70	70	66
30VSB6	5	15	20	25	29	39	39	56	62	70	70	66