



## **EMC filters**

2-line filters

SIFI-B for enhanced insertion loss

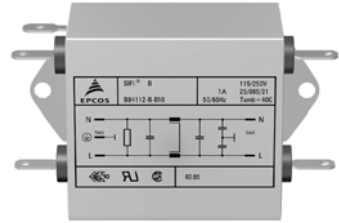
Rated current 1 to 20 A

**Series/Type:**            **B84112B**  
Date:                        January 2006

**Power line filters for 1-phase systems**  
**Rated voltage 250 V DC/AC, 50/60 Hz**  
**Rated current 1 to 20 A**

### Alternative version


- Series B84112G (SIFI-G) offers a low-cost solution



### Construction

- 2-line filters
- Metal case
- Polyurethane potting (UL 94 V-0)

### Features

- Compact design
- Optimized leakage current
- Cost-optimized construction
- Also for assembly on top-hat rails
- ENEC10, UL and CSA approval 

### Applications

- Switch-mode power supplies in
  - industrial electronics
  - telecommunications
  - data systems
  - medical equipment
- DC applications

### Case styles and terminal styles

- |              |   |
|--------------|---|
| Case style A | Tab connectors on face ends, lateral fixing lugs. Particularly suitable for mounting on a shielding wall.         |
| Case style B | Tab connectors on face ends, fixing lugs on face ends.  |
| Case style K | IEC connector as per IEC 60320 C 14 on line side, tab connectors on load side, mounting holes with metric thread. |
| Case style L | Litz wires on face ends, fixing lugs on face ends   |
| Case style P | Pins fitting PCB standard grid  |

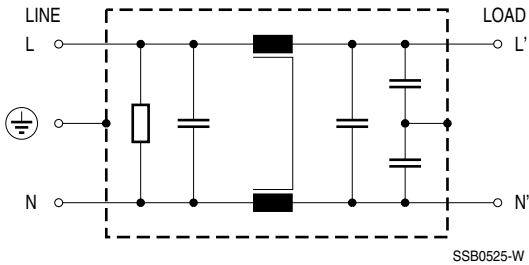
### Marking

Marking on component:

Manufacturer's logo, ordering code, rated voltage, rated current, rated temperature, climatic category, date code

Minimum marking on packaging:

Manufacturer's logo, ordering code

**Circuit diagram**

**Technical data and measuring conditions**

Rated voltage $V_R$	250 V DC/AC, 50/60 Hz
Rated current $I_R$	Referred to 40 °C ambient temperature
Test voltage $V_{test}$	1414 V DC, 2 s (line/line) 2700 V DC, 2 s (lines/case)
Leakage current $I_{leak}$	At 230 V AC, 50 Hz
Climatic category (IEC 60068-1)	25/085/21 (-25 °C/+85 °C/21 days damp heat test)
Approvals	EN 133200, UL 1283, CSA C22.2 No.8

**Characteristics and ordering codes**

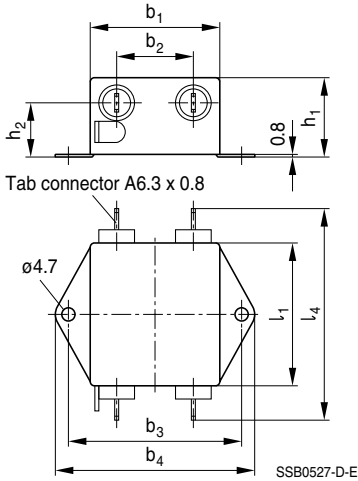
$I_R$	$C_R$	$L_R$	$I_{leak}$	Case style	Approx. weight	Ordering code	Mounting plate for top-hat rail (ordering code)
A		mH	mA		g		
$V_R = 250$ V DC/AC, 50/60 Hz							
1	$2 \times 0.15 \mu\text{F}$ (X2) + $2 \times 4700$ pF (Y2)	$2 \times 10$	< 0.5	A B K L	110 110 140 110	B84112B0000A010 B84112B0000B010 B84112B0000K010 B84112B0000L010	— C62122A0132B091 — —
2	$2 \times 0.15 \mu\text{F}$ (X2) + $2 \times 4700$ pF (Y2)	$2 \times 10$	< 0.5	A B L	110 110 110	B84112B0000A020 B84112B0000B020 B84112B0000L020	— C62122A0132B091 —
3	$2 \times 0.22 \mu\text{F}$ (X2) + $2 \times 4700$ pF (Y2)	$2 \times 10$	< 0.5	A B K L P	140 140 210 140 140	B84112B0000A030 B84112B0000B030 B84112B0000K030 B84112B0000L030 B84112B0000P030	— C62122A0132B092 — — —
6	$2 \times 0.33 \mu\text{F}$ (X2) + $2 \times 4700$ pF (Y2)	$2 \times 3.3$	< 0.5	A B K L	150 150 210 150	B84112B0000A060 B84112B0000B060 B84112B0000K060 B84112B0000L060	— C62122A0132B092 — —
10	$2 \times 0.47 \mu\text{F}$ (X2) + $2 \times 4700$ pF (Y2)	$2 \times 1.8$	< 0.5	A B L	200 200 200	B84112B0000A110 B84112B0000B110 B84112B0000L110	— C62122A0132B092 —
20	$2 \times 0.68 \mu\text{F}$ (X2) + $2 \times 4700$ pF (Y2)	$2 \times 1.8$	< 0.5	A B	700 700	B84112B0000A120 B84112B0000B120	— C62122A0132B092

**Case styles and dimensions**

Case style	I <sub>R</sub> A	Dimensions (mm)											Litz mm <sup>2</sup>	Style 1015
		b <sub>1</sub>	b <sub>2</sub>	b <sub>3</sub>	b <sub>4</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>	h <sub>1</sub>	h <sub>2</sub>			
A	1	45	26.5	60.4	70	50	—	—	76.5	28.6	20	—	—	
B	1	45	26.5	—	—	50	60.4	70	76.5	28.6	20	—	—	
K	1	51	—	—	—	63.5	—	—	—	32	—	—	—	
L	1	45	—	—	—	50	60.4	70	—	28.6	—	0.82	AWG18	
A	2	45	26.5	60.4	70	50	—	—	76.5	28.6	20	—	—	
B	2	45	26.5	—	—	50	60.4	70	76.5	28.6	20	—	—	
L	2	45	—	—	—	50	60.4	70	—	28.6	—	0.82	AWG18	
A	3	50.8	31.5	60.4	70	63.5	—	—	89.5	28.6	20	—	—	
B	3	50.8	31.5	—	—	63.5	74.7	84.5	89.5	28.6	20	—	—	
K	3	50.8	—	—	—	79.5	—	—	—	32	—	—	—	
L	3	50.8	—	—	—	63.5	74.7	84.5	—	28.6	—	0.82	AWG18	
P	3	See dimensional drawing											—	—
A	6	50.8	31.5	60.4	70	63.5	—	—	89.5	28.6	20	—	—	
B	6	50.8	31.5	—	—	63.5	74.7	84.5	89.5	28.6	20	—	—	
K	6	50.8	—	—	—	79.5	—	—	—	32	—	—	—	
L	6	50.8	—	—	—	63.5	74.7	84.5	—	28.6	—	0.82	AWG18	
A	10	50.8	31.5	60.4	70	63.5	—	—	89.5	38.1	28	—	—	
B	10	50.8	31.5	—	—	63.5	74.7	84.5	89.5	38.1	28	—	—	
L	10	50.8	—	—	—	63.5	74.7	84.5	—	38.1	—	1.35	AWG16	
A	20	See dimensional drawing											—	—
B	20	See dimensional drawing											—	—

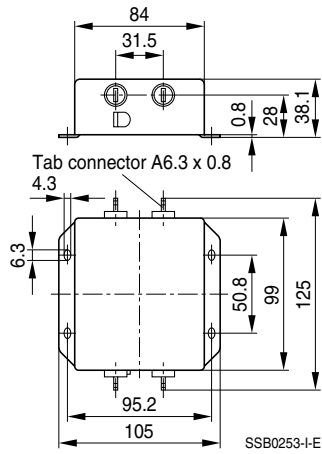
**Case style A**

1 ... 10 A (B84112B0000A010 ... A110)



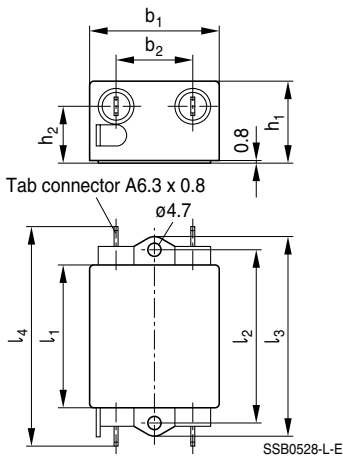
**Case style A**

20 A (B84112B0000A120)



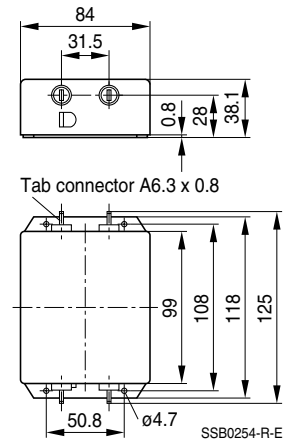
**Case style B**

1 ... 10 A (B84112B0000B010 ... B110)

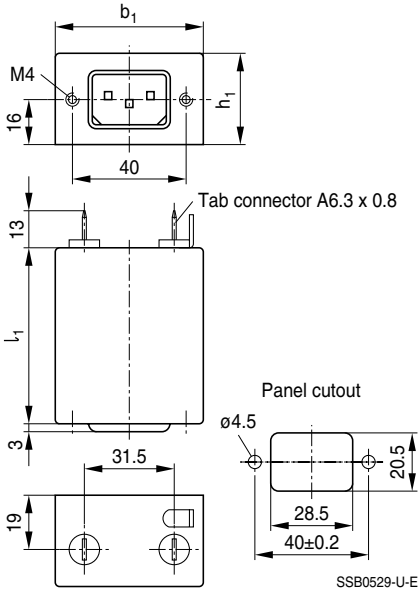


**Case style B**

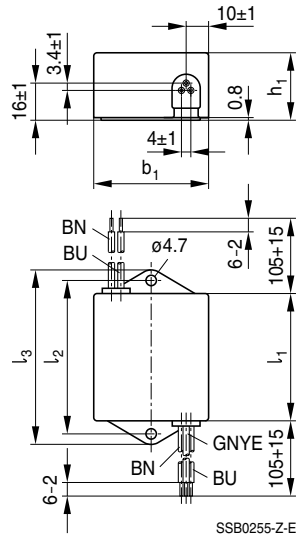
20 A (B84112B0000B120)



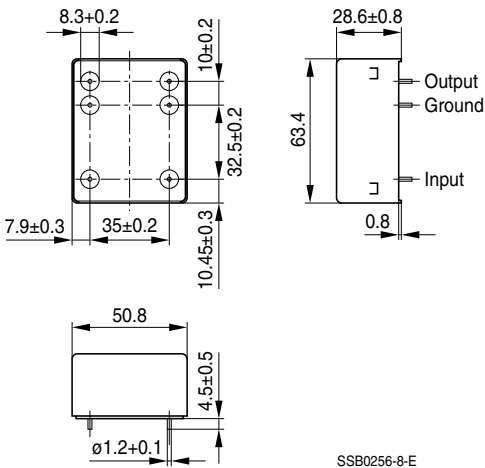
Case style K



Case style L



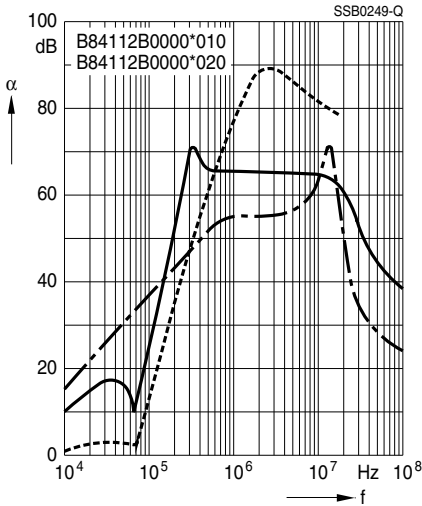
Case style P



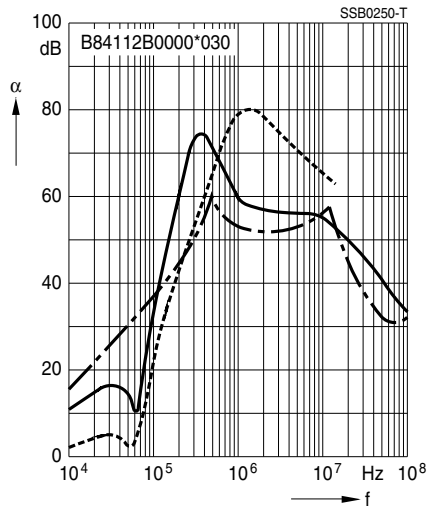
**Insertion loss** (typical values at  $Z = 50 \Omega$ )

- unsymmetrical, adjacent branches terminated
- - - - - common mode, all branches in parallel (asymmetrical)
- - - - - differential mode (symmetrical)

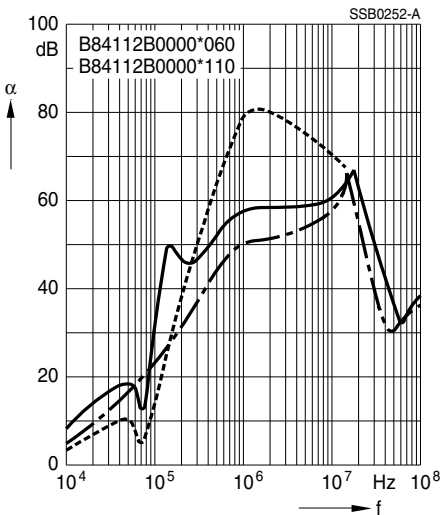
Filters for 1 A and 2 A



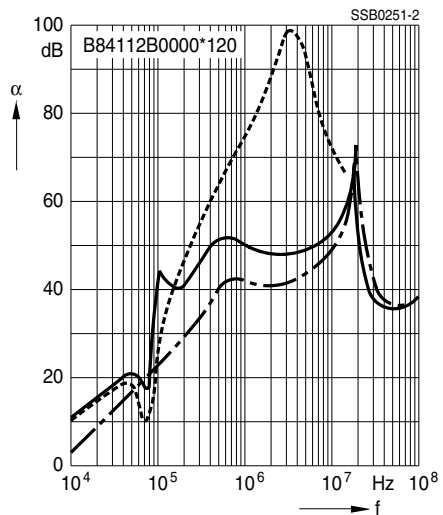
Filters for 3 A



Filters for 6 A and 10 A




Filters for 20 A





### Important information

Please read all safety and warning notes carefully before installing the EMC filter and putting it into operation (see ). The same applies to the warning signs on the filter. Please ensure that the signs are not removed nor their legibility impaired by external influences.

Death, serious bodily injury and substantial material damage to equipment may occur if the appropriate safety measures are not carried out or the warnings in the text are not observed.

### Using according to the terms

The EMC filters may be used only for their intended application within the specified values in low-voltage networks in compliance with the instructions given in the data sheets and the data book. The conditions at the place of application must comply with all specifications for the filter used.

### Warnings

- It shall be ensured that only qualified persons (electricity specialists) are engaged on work such as planning, assembly, installation, operation, repair and maintenance. They must be provided with the corresponding documentation.
- Danger of electric shock. EMC filters contain components that store an electric charge. Dangerous voltages can continue to exist at the filter terminals for longer than five minutes even after the power has been switched off.
- The protective earth connections shall be the first to be made when the EMC filter is installed and the last to be disconnected. Depending on the magnitude of the leakage currents, the particular specifications for making the protective-earth connection must be observed.
- Impermissible overloading of the EMC filter, such as impermissible voltages at higher frequencies that may cause resonances etc. can lead to destruction of the filter housing.
- EMC filters must be protected in the application against impermissible exceeding of the rated currents by suitable overcurrent protective.

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