2–line filters

SIFI–F for normal insertion loss

250 V DC/AC, 50/60 Hz, 3 ... 36 A

Series/Type:	**B84111F0000***
Date:	2008–08–07
Version:	07

Construction

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

Features

- Optimized leakage current
- Easy to install
- Compact design
- Cost–optimized construction
- ENEC10, UL und cUL approval

Applications

- Switched–mode power supplies for
  – industrial electronics
  – telecom systems
  – data systems
- DC applications
- Medical engineering Type M

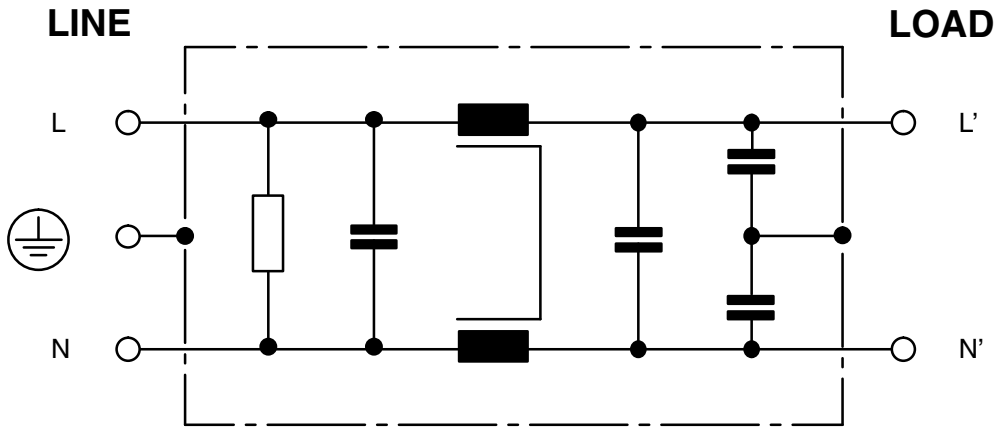
Terminals

- Filters up to 20A tab connectors 6.3 x 0.8 mm
- Threaded studs M5 for filters from 25A to 36A

Marking

- Marking on component:
  manufacturer's logo, ordering code, rated voltage, rated current, rated temperature, climatic category, date code
- Minimum marking on packaging: maufacturer's logo, ordering code, date code, quantity

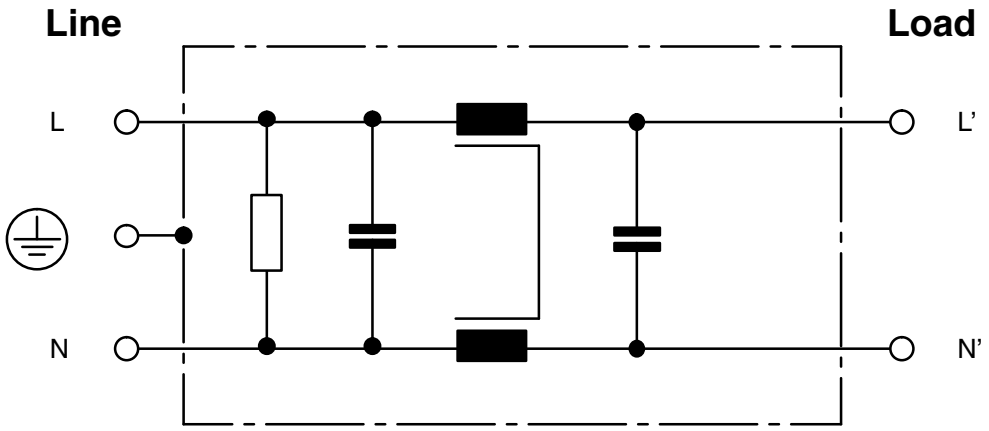
Typical circuit diagram of B84111F0000B* and B84111F0000G*



Technical data and measuring conditions of B84111F0000B* and B84111F0000G*

Rated voltage	V_R	250	V DC/AC
Rated frequency	f_R	50/60	Hz
Test voltage line to line for 2 s	U_{test}	1770	V DC
Test voltage line to case for 2 s	U_{test}	2700	V DC
Leakage current	I_{leak}	At 230 V AC, 50 Hz	
Rated temperature	T_R	40	°C
Climatic category (IEC 60068–1)		25/100/21	

Typical circuit diagram of B84111F0000M* (for medical applications)



Technical data and measuring conditions of B84111F0000M* (for medical applications)

Rated voltage	V_R	250	V DC/AC
Rated frequency	f_R	50/60	Hz
Test voltage line to line for 2 s	U_{test}	1770	V DC
Test voltage line to case for 2 s	U_{test}	2500	V AC
Leakage current	I_{leak}	At 230 V AC, 50 Hz	
Rated temperature	T_R	40	°C
Climatic category (IEC 60068–1)		25/100/21	

Characteristics and ordering codes for B84111F0000B* and B84111F0000G*

I_R	C_R	L_R	I_{leak}	Approx. weight	R_{typ}	Ordering code	Approvals		
A		mH	mA	g	mΩ				
3	2 x 0.1 µF (X2) 2 x 4700 pF (Y2)	2 x 1.5	< 0.5	90	67	B84111F0000B030	X	X	X
6	2 x 0.1 µF (X2) 2 x 4700 pF (Y2)	2 x 1.8	< 0.5	90	37	B84111F0000B060	X	X	X
10	2 x 0.1 µF (X2) 2 x 4700 pF (Y2)	2 x 0.87	< 0.5	90	12.5	B84111F0000B110	X	X	X
16	2 x 0.1 µF (X2) 2 x 4700 pF (Y2)	2 x 0.65	< 0.5	130	6.8	B84111F0000B116	X	X	X
20	2 x 0.1 µF (X2) 2 x 4700 pF (Y2)	2 x 0.43	< 0.5	130	4.8	B84111F0000B120	X	X	X
25	2 x 0.1 µF (X2) 2 x 4700 pF (Y2)	2 x 0.66	< 0.5	300	4.5	B84111F0000G125	X	X	X
36	2 x 0.47 µF (X2) 2 x 10 nF (Y2)	2 x 0.4	< 1	300	1.6	B84111F0000G136	X	X	X

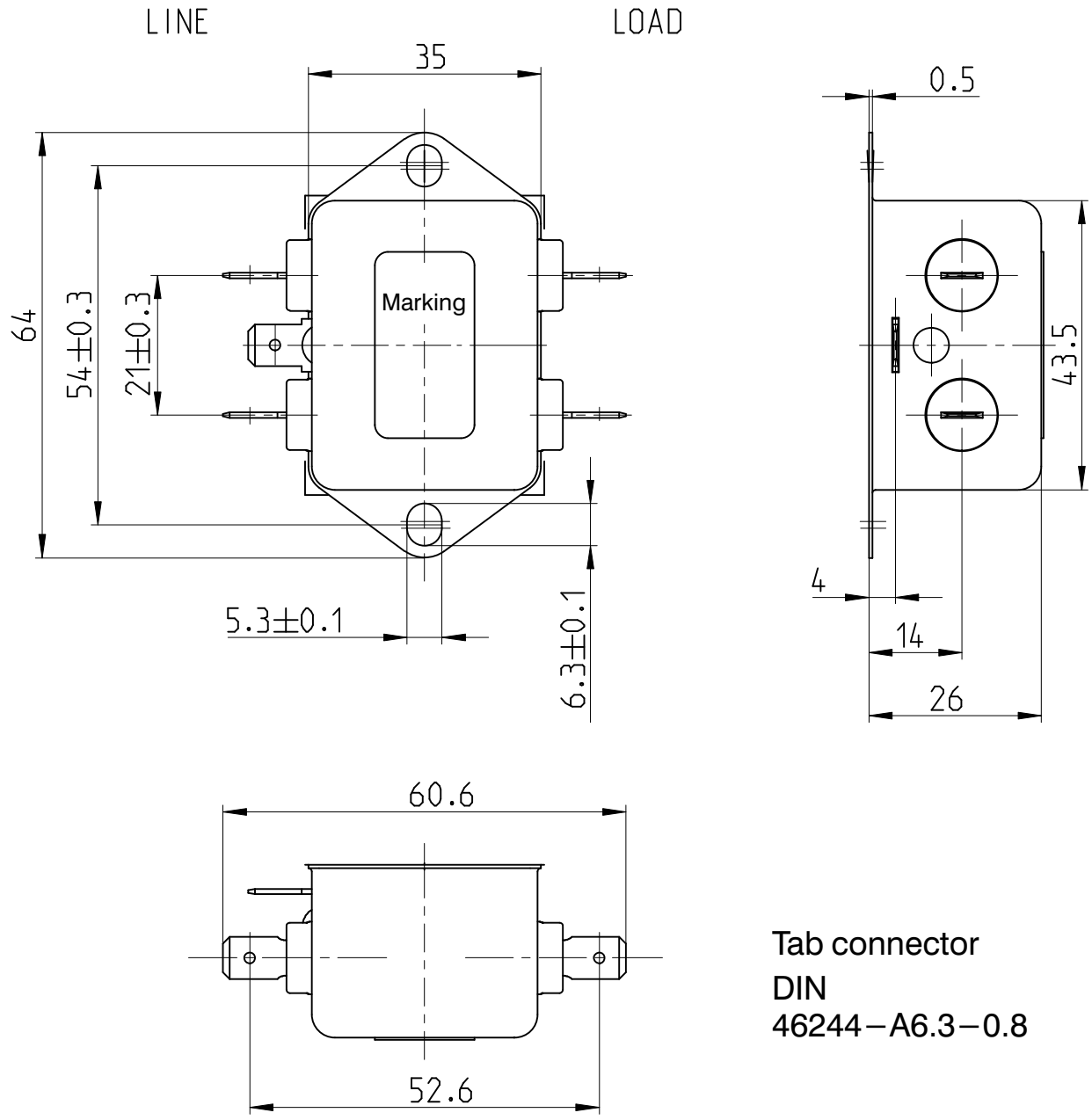
Characteristics and ordering codes for B84111F0000M* (for medical applications)

I_R	C_R	L_R	I_{leak}	Approx. weight	R_{typ}	Ordering code	Approvals		
A		mH	µA	g	mΩ				
3	2 x 0.1 µF (X2)	2 x 1.5	< 2	90	67	B84111F0000M030	X	X	X
6	2 x 0.1 µF (X2)	2 x 1.8	< 2	90	37	B84111F0000M060	X	X	X
10	2 x 0.1 µF (X2)	2 x 0.87	< 2	90	12.5	B84111F0000M110	X	X	X
16	2 x 0.1 µF (X2)	2 x 0.65	< 2	130	6.8	B84111F0000M116	X	X	X
20	2 x 0.1 µF (X2)	2 x 0.43	< 2	130	4.8	B84111F0000M120	X	X	X
25	2 x 0.1 µF (X2)	2 x 0.66	< 2	300	4.5	B84111F0000M125	X	X	X
36	2 x 0.47 µF (X2)	2 x 0.4	< 2	300	1.6	B84111F0000M136	X	X	X

X = approval granted

Dimensional drawings

B84111F0000*030
B84111F0000*060
B84111F0000*110

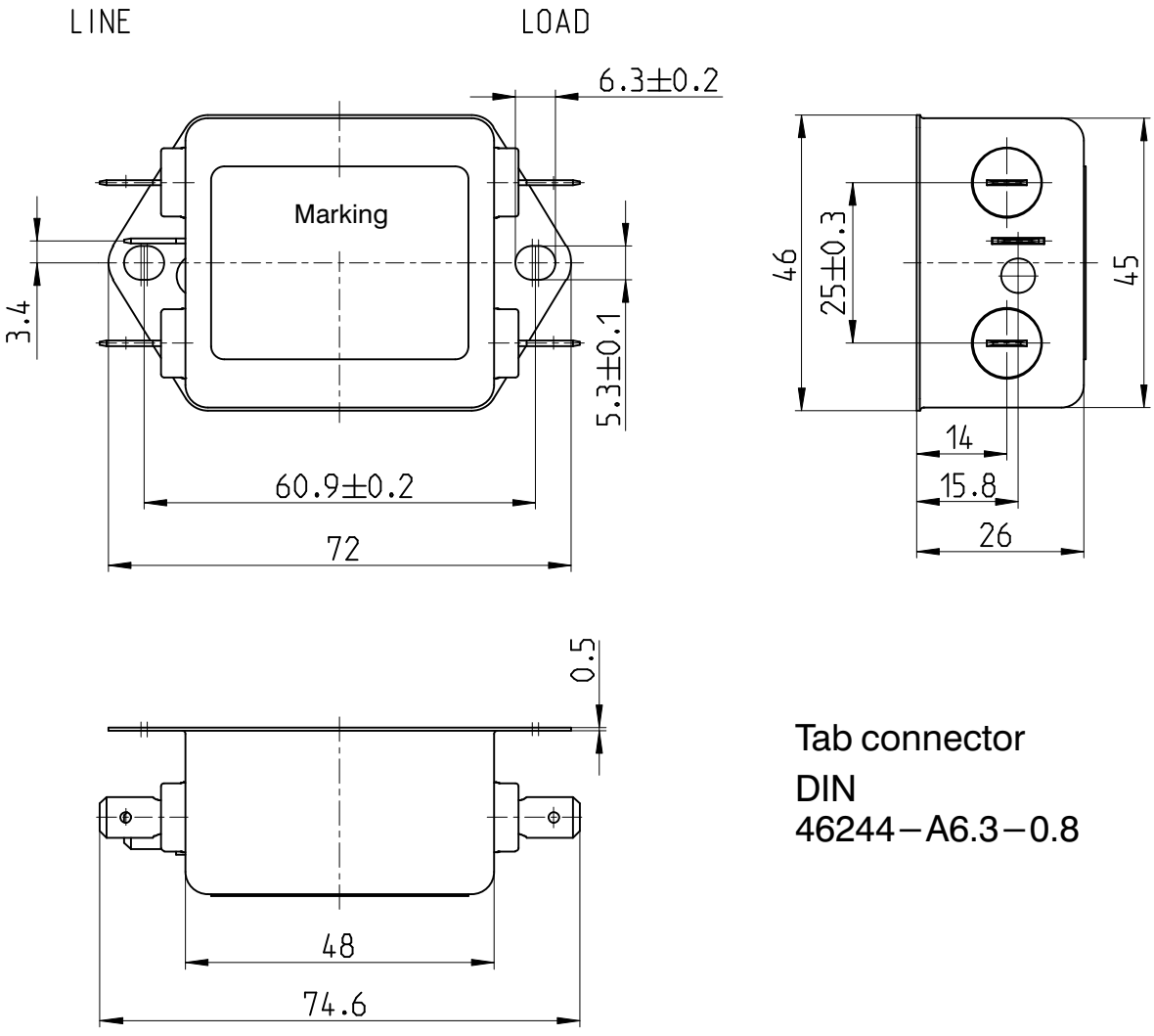


Tab connector
DIN
46244–A6.3–0.8

all dimensions in mm !

Dimensional drawings

B84111F0000*116
B84111F0000*120

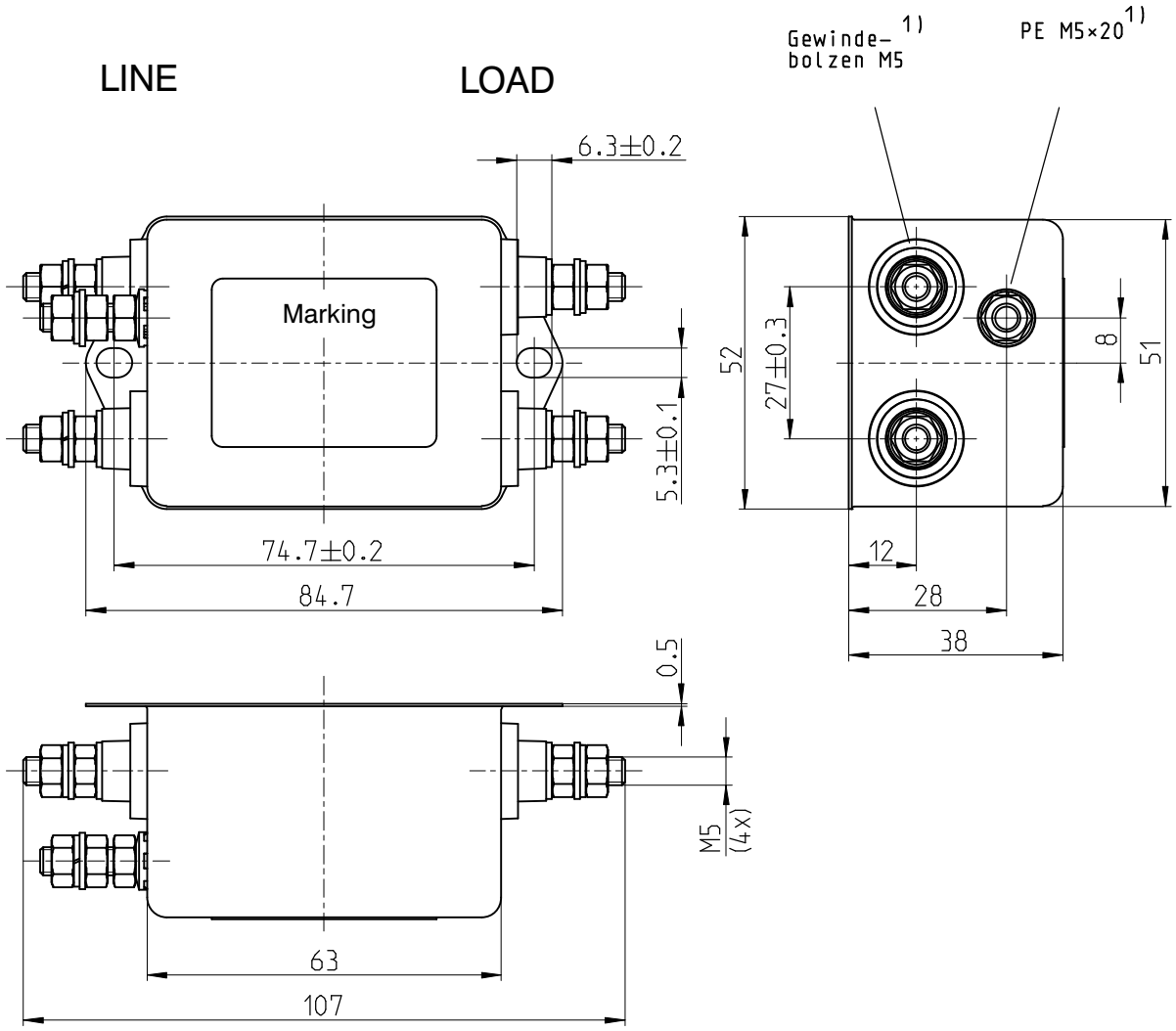


Tab connector
DIN
46244–A6.3–0.8

all dimensions in mm !

Dimensional drawings

B84111F0000*125
B84111F0000*136



1) Tightening torque 2,6...3,0 Nm!

All dimensions in mm!

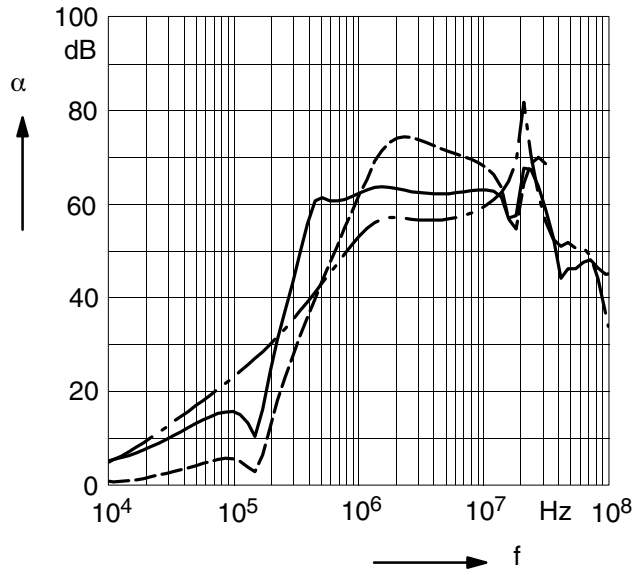
Insertion loss (typical values at Z = 50 Ω)

——— unsymmetrical, adjacent branches terminated

—·— common mode, all branches in parallel (asymmetrical)

– – – differential mode (symmetrical)

B84111F0000B030



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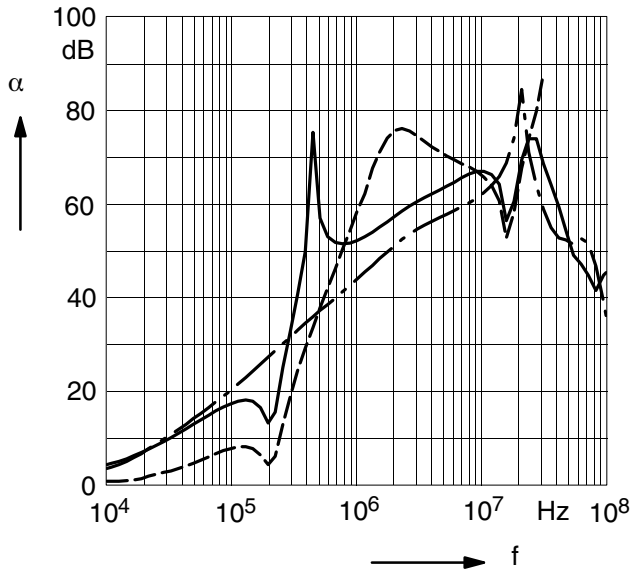

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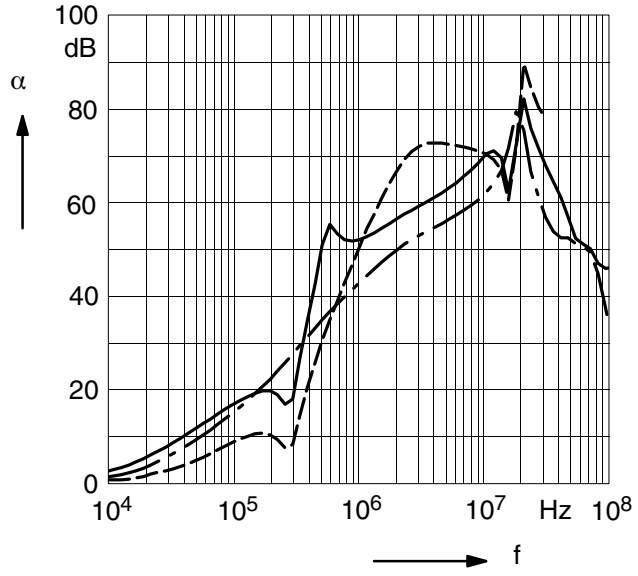
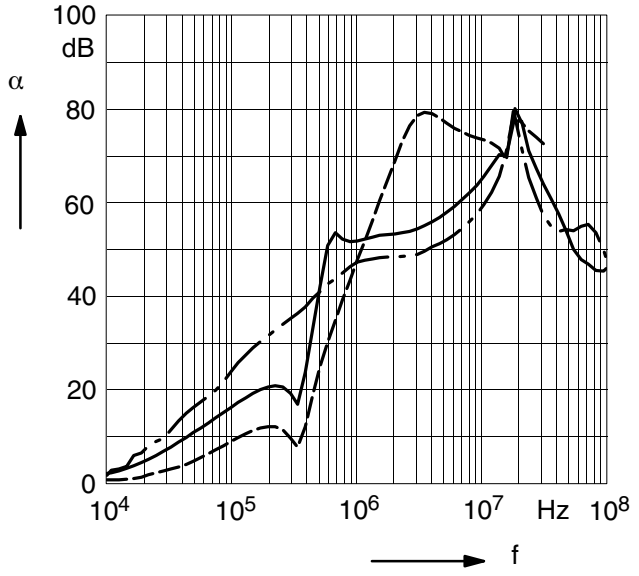


B84111F0000B116



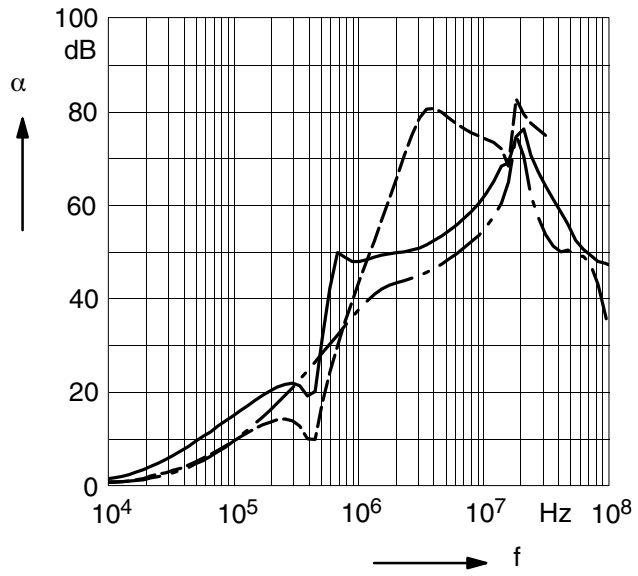
Insertion loss (typical values at Z = 50 Ω)

——— unsymmetrical, adjacent branches terminated

—·— common mode, all branches in parallel (asymmetrical)

– – – differential mode (symmetrical)

B84111F0000B120



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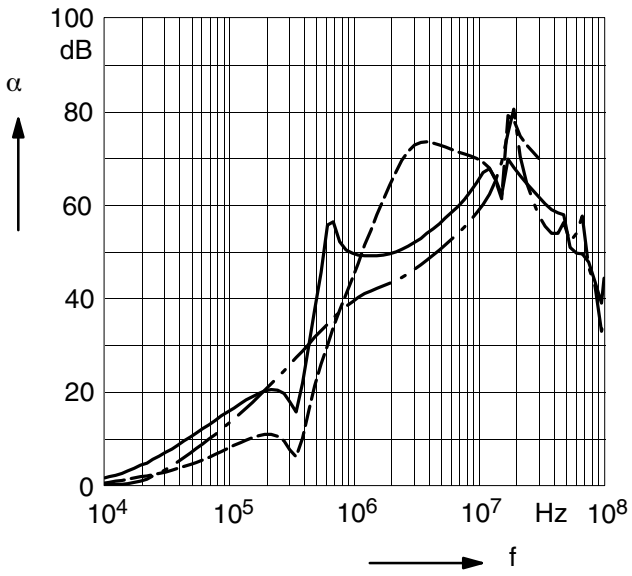
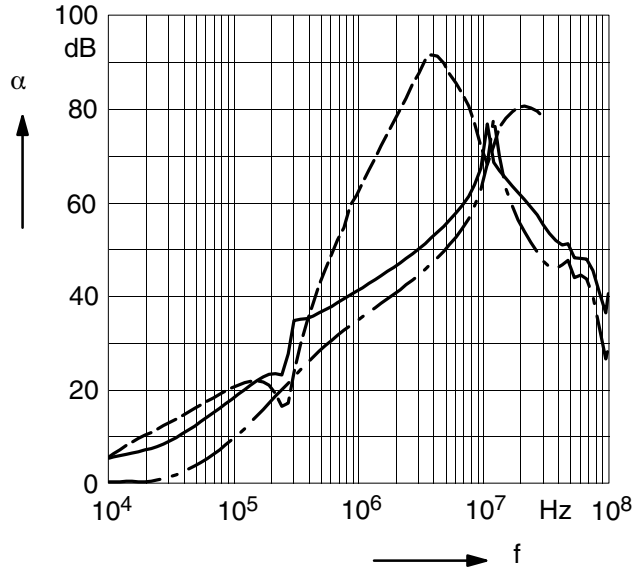


B84111F0000G136



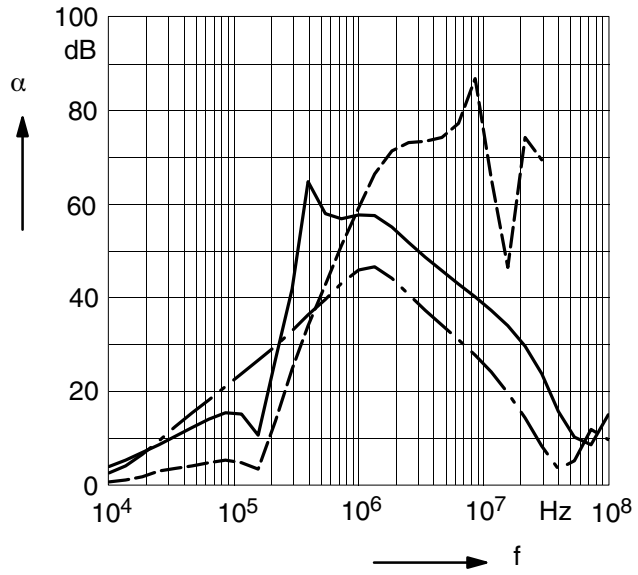
Insertion loss (typical values at Z = 50 Ω)

——— unsymmetrical, adjacent branches terminated

—·— common mode, all branches in parallel (asymmetrical)

– – – differential mode (symmetrical)

B84111F0000M030



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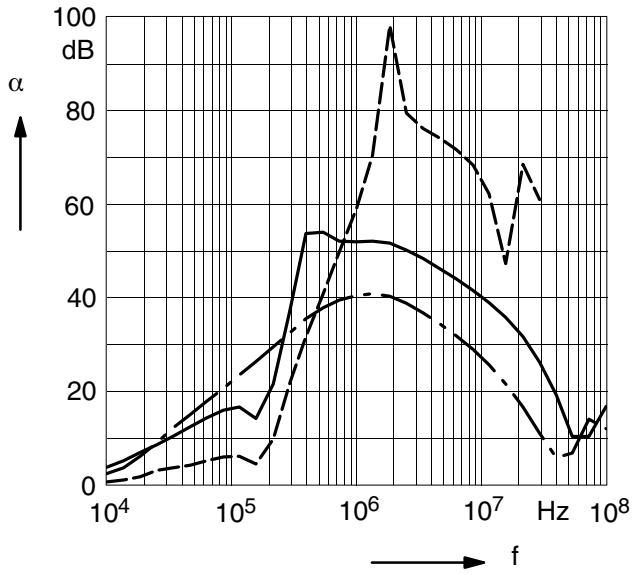

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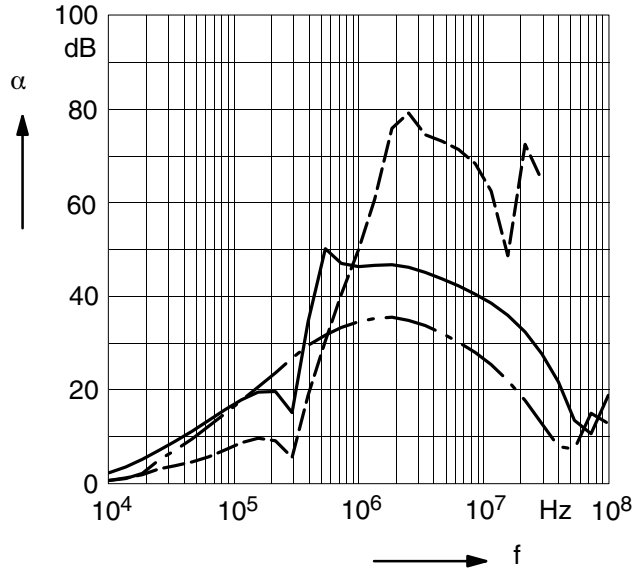

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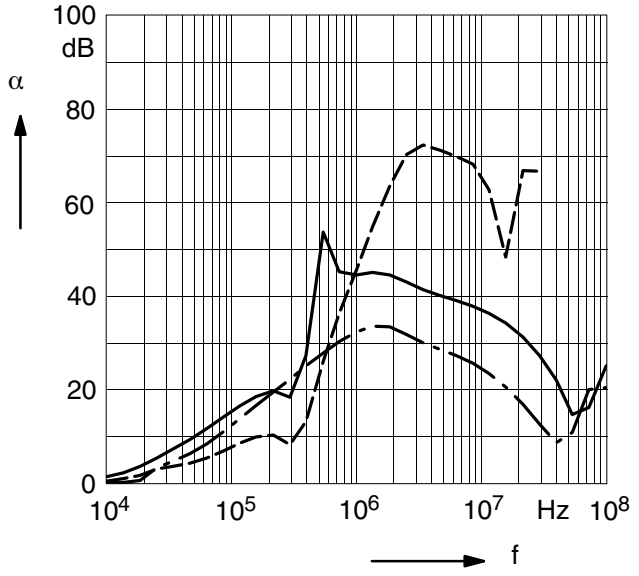


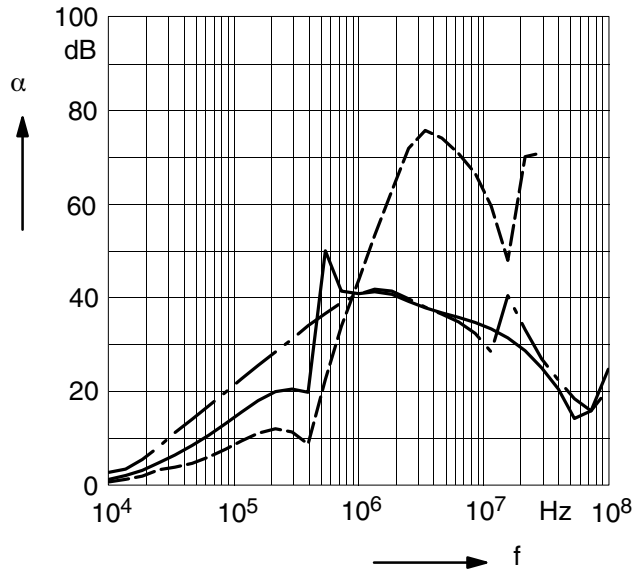
Insertion loss (typical values at Z = 50 Ω)

——— unsymmetrical, adjacent branches terminated

—·— common mode, all branches in parallel (asymmetrical)

– – – differential mode (symmetrical)

B84111F0000M120



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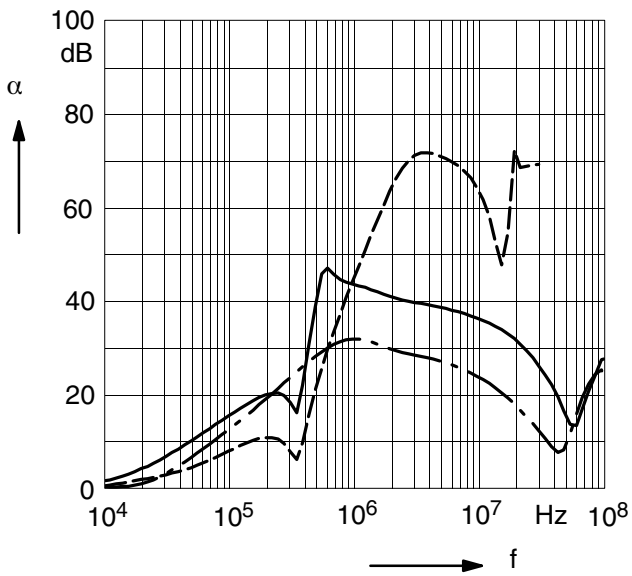

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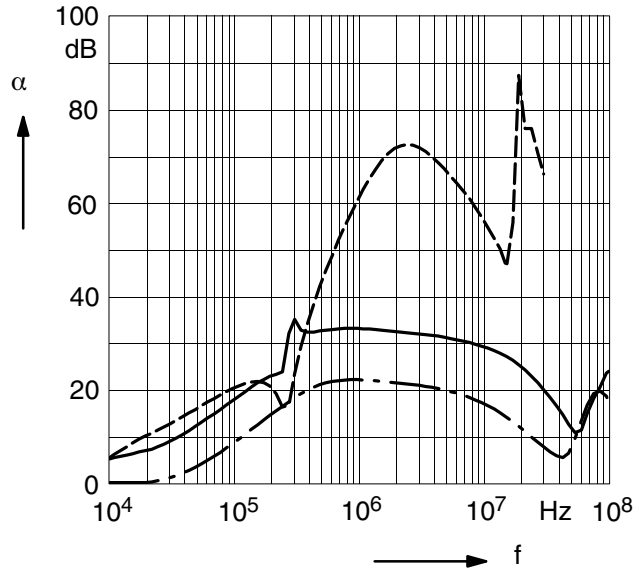

Caution and warnings

- Please note the advices in our data book “EMC Filters” (latest edition); attention should be paid to the chapter “General safety notes”.
- 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 with circuits able to cause resonances, impermissible voltages at higher frequencies etc. can lead to bodily injury and death as well as cause substantial material damages (e.g. destruction of the filter housing).
- EMC filters must be protected in the application against impermissible exceeding of the rated currents by overcurrent protective.
- In case of leakage currents > 3.5 mA you shall mount the PE conductor stationary with the required cross section before beginning of operation and save it against disconnecting. For leakage currents I_L [4)] < 10 mA the PE conductor must have a KU value [3)] of 4.5; for leakage currents $I_L \geqslant 10$ mA the PE conductor must have a KU value of 6.

3) The KU value (symbol KU) is a classification parameter of safety–referred failure types designed to ensure protection against hazardous body currents and excessive heating.
A value of KU = 4.5 with respect to interruptions is attained:
– with a permanently connected protective earth circuit ≥ 1.5 mm^2
– with a protective earth circuit ≥ 2.5 mm^2 connected via shroud connectors (IEC 60309–2).
KU = 6 with respect to interruptions is achieved for fixed–connection lines ≥ 10 mm^2 where the type of connection and line layout correspond to the requirements for PEN conductors as specified in relevant standards.

4) I_L = leakage current let–go

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The following applies to all products named in this publication:

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