PCM Filter Series

10 and 20 Amp Board Mounted Filters
0 to 100 VDC Input

Description

SAE, a recognized leader in filter design, is pleased to introduce a family of DC filters designed for use with Industry Standard medium power Brick converters. These filters have been designed for optimum performance in critical applications where FCC Part 15 or CISPR emissions compliance is required.

Features

• Optimized for use with High Frequency _-_ Brick DC/DC Converters

• Printed-Circuit-Board Mounted

• Offer excellent common-mode and differential-mode filtering

• Allow power modules to meet FCC and EN55022 (CISPR22) requirement

Electrical Specifications

Product Specifications

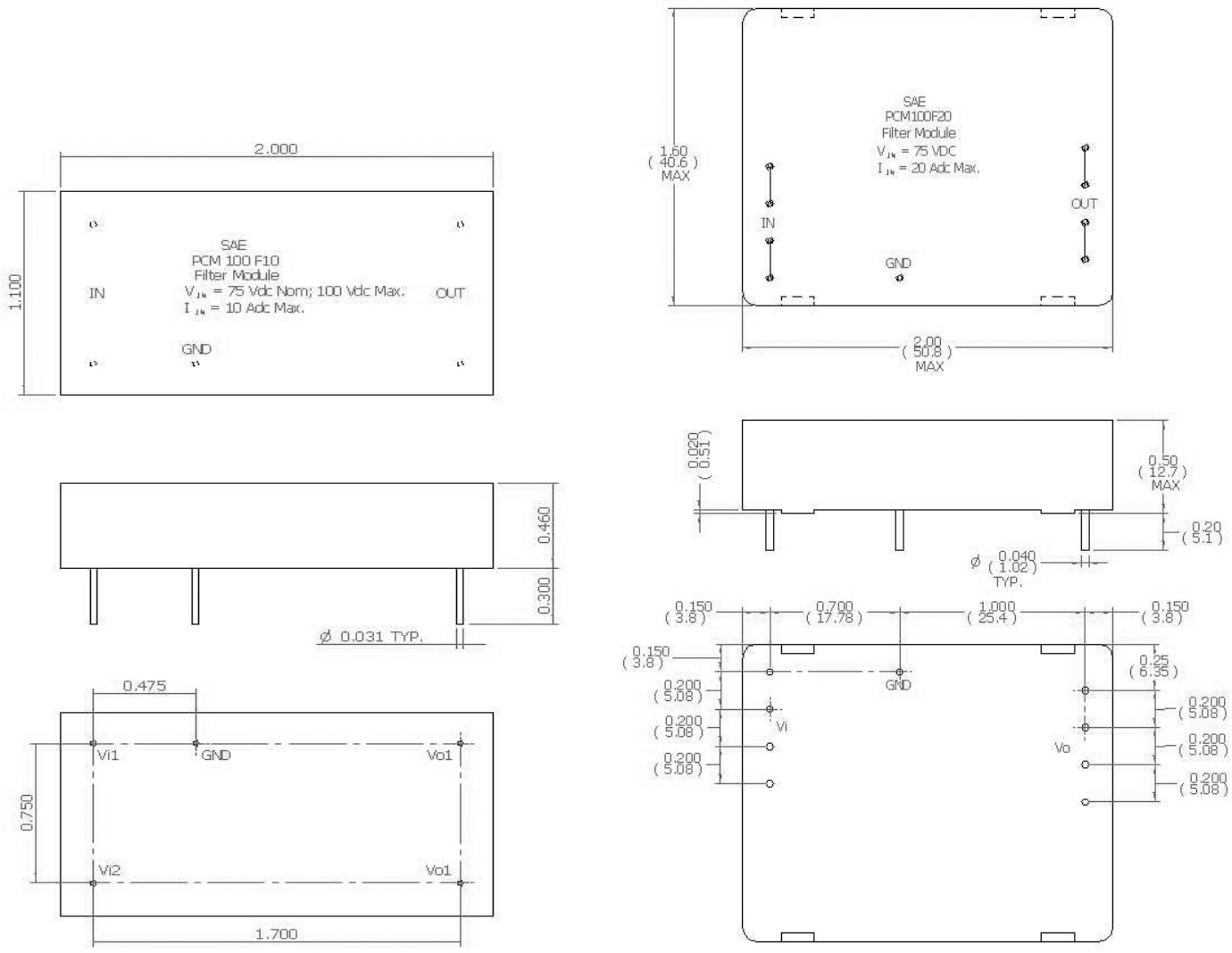
Parameter	
Isolation Voltage, Common Mode	1500VDC
Rated Differential Input Voltage	75VDC
Maximum Differential Input Voltage	100VDC or peak
Operating Case Temperature (see current derating graph)	-40C to +100C
Storage Temperature	-40C to +100C
Weight: 10A	29 grams (1 oz.) typ.
20A	tbd
Certifications°	UL, CSA and TUV
Calculated MTBF	17 Million Hours ???
Resistance per Leg: 10A (25°C)	14mΩ
20A (25°C)	6.6mΩ
Common Mode Insertion Loss (50Ω circuit): 10A	36dB @ 500KHz typ.
20A	32 dB @ 500KHz typ.
Differential-Mode Insertion Loss (50Ω circuit): 10A	50dB @ 500KHz typ.
20A	36 dB @ 500KHz typ.

Selection Table

Part Number	Input Range VDC	Max Current A [rms]	Mechanical
PCM100F10 $T_A \leq 60°C$, 400lfm (2m/s)	0-100	10A	1.1 x 2.0 x 0.46
$T_A \leq 60°C$, natural convection	0-100	6.5A	"
PCM100F20 $T_A \leq 60°C$, 400lfm (2m/s)	0-100	20A	1.6 x 2.0 x 0.49
$T_A \leq 60°C$, natural convection	0-100	13A	"

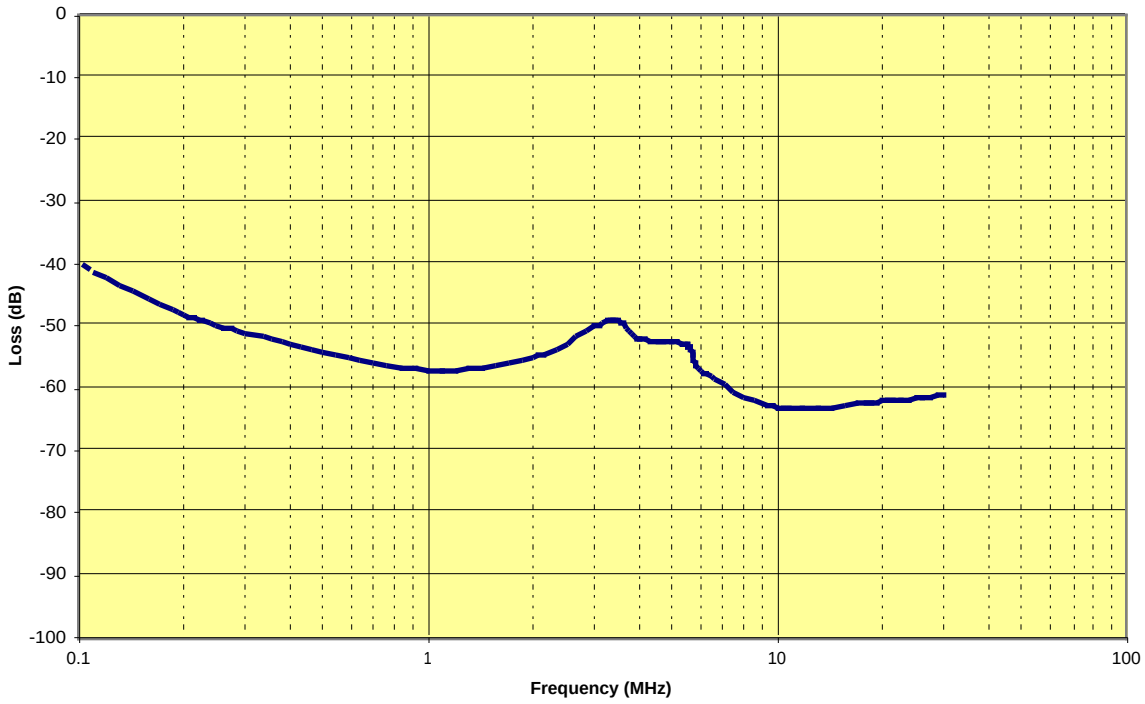
Outline Diagram

Dimensions are in inches.

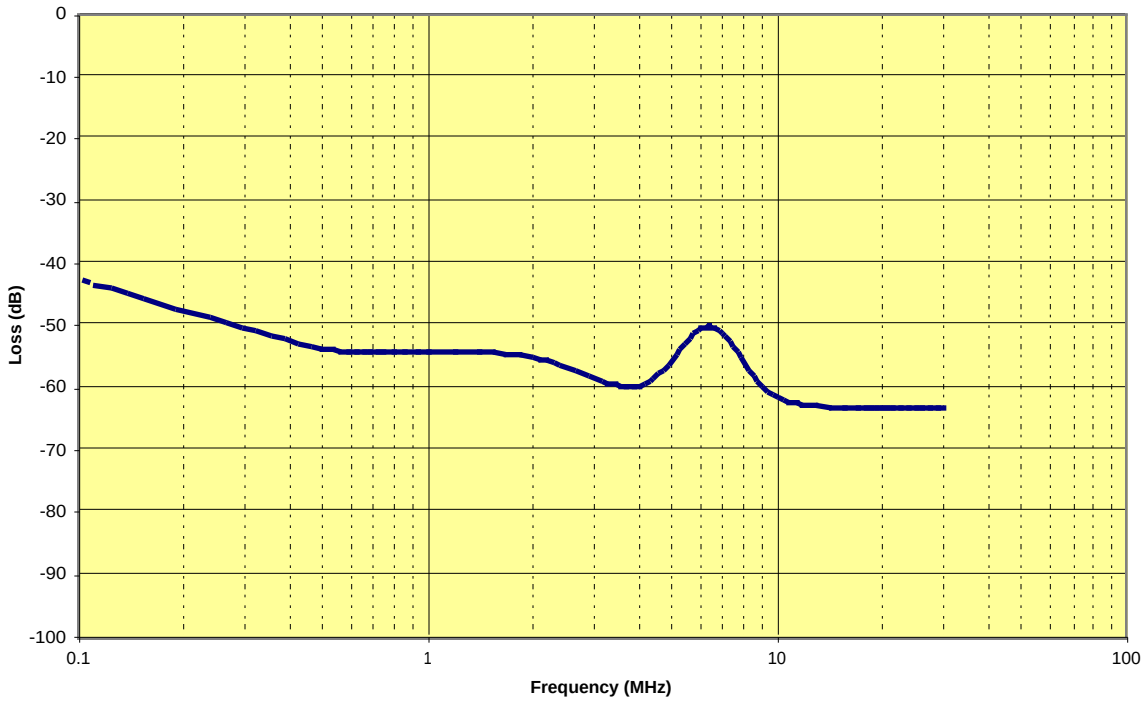


(Bottom View)

Typical Differential-Mode Insertion Loss, 50Ω Circuit **PCM100F10**



Typical Differential-Mode Insertion Loss, 50Ω Circuit **PCM100F20**



Notes:

1. To prevent interaction between the filter's output impedance and the converter's control loop, always use the recommended capacitor across the input of the converter as indicated in the manufacturer's data sheet. Some converters contain input impedance control and damping networks, which may not require an input cap.
2. Small surface-mount capacitors (10 to 100nF) between input/output lines and the converter's output ground plane placed close to the converter pins will often improve high frequency attenuation. Follow the converter manufacturer's recommendations.
3. The ground pin of the filter should be connected to the ground plane of the input power circuit (usually the chassis). The filter's common-mode impedance may be use to break high frequency ground loops between the source ground and the converter output common.
4. Position the filter close to the DC input to the system, away from the stray magnetic fields of the converter(s). Avoid running the traces for the DC input and ground of the filter near or under any power converter, to minimize noise coupling.
5. If desired, several converters may be connected to the output of one filter, provided that the total current is within its ratings.
6. Certifications are pending. Please contact SAE for completion dates.
7. Please contact your regional SAE sales office if you require application assistance. SAE would be pleased to consider custom versions for specific applications.

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