



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



## Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



**SERIES: VFM-XX****DESCRIPTION: DC EMI FILTER****FEATURES**

- compact size
- suitable for use with a wide range of dc-dc converters
- reduces common and differential mode noise



MODEL	input voltage	input surge voltage <sup>1</sup>	input current	isolation voltage <sup>2</sup>
	range (Vdc)	nominal (Vdc)	max. (A)	min. (Vdc)
VFM-10A	0 ~ 75	100	10	1,500
VFM-15C	0 ~ 75	100	15	1,500
VFM-20A	0 ~ 75	100	20	1,500
VFM-25C	0 ~ 36	50	25	1,500

1) for 100 ms

2) input to ground, output to ground

**GENERAL**

parameter	conditions/description	min	nom	max	units
dimensions	VFM-10A: 2.00x1.00x0.46 inch 50.8x25.4x11.7 mm VFM-15C: 4.06x3.11x0.89 inch 103.2x79x22.7 mm VFM-20A: 2.00x1.60x0.50 inch 50.8x40.6x12.7 mm VFM-25C: 4.06x3.11x0.89 inch 103.2x79x22.7 mm				
case material	VFM-10A/20A: black plastic VFM-15C/25C: black coated steel				
isolation voltage	input to ground, output to ground	1,500			Vdc
isolation resistance	input to ground, output to ground	10 <sup>7</sup>			Ω
dc resistance	total for two legs		16		mΩ

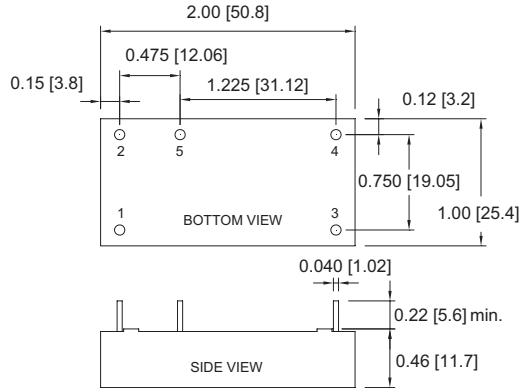
**ENVIRONMENTAL**

parameter	conditions/description	min	nom	max	units
cooling	natural convection				
operating temperature		-40		100	°C
case temperature				100	°C
storage temperature		-40		100	°C

**SERIES:VFM-XX**

**DESCRIPTION: DC EMI FILTER**

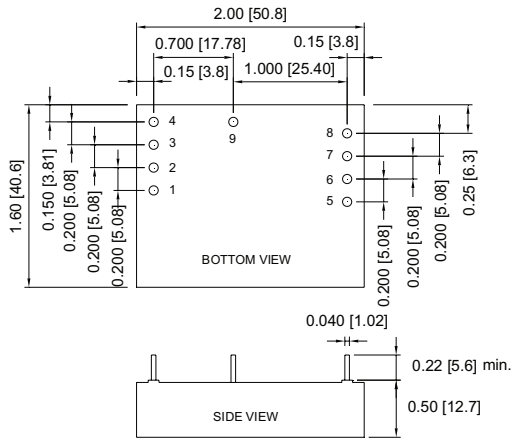
**DRAWING (VFM-10A)**



NOTE: Pin Size is  $\varnothing 0.04$  inch ( $\varnothing 1.02$  mm)  
 All Dimensions in inches (mm)  
 Tolerances: Inches: X.XX=  $\pm 0.02$ , X.XXX=  $\pm 0.010$   
 Millimeters: X.X=  $\pm 0.5$ , X.XX=  $\pm 0.25$

PIN CONNECTION	
Pin	Function
1	+V Input
2	-V Input
3	+V Output
4	-V Output
5	GND

**DRAWING (VFM-20A)**



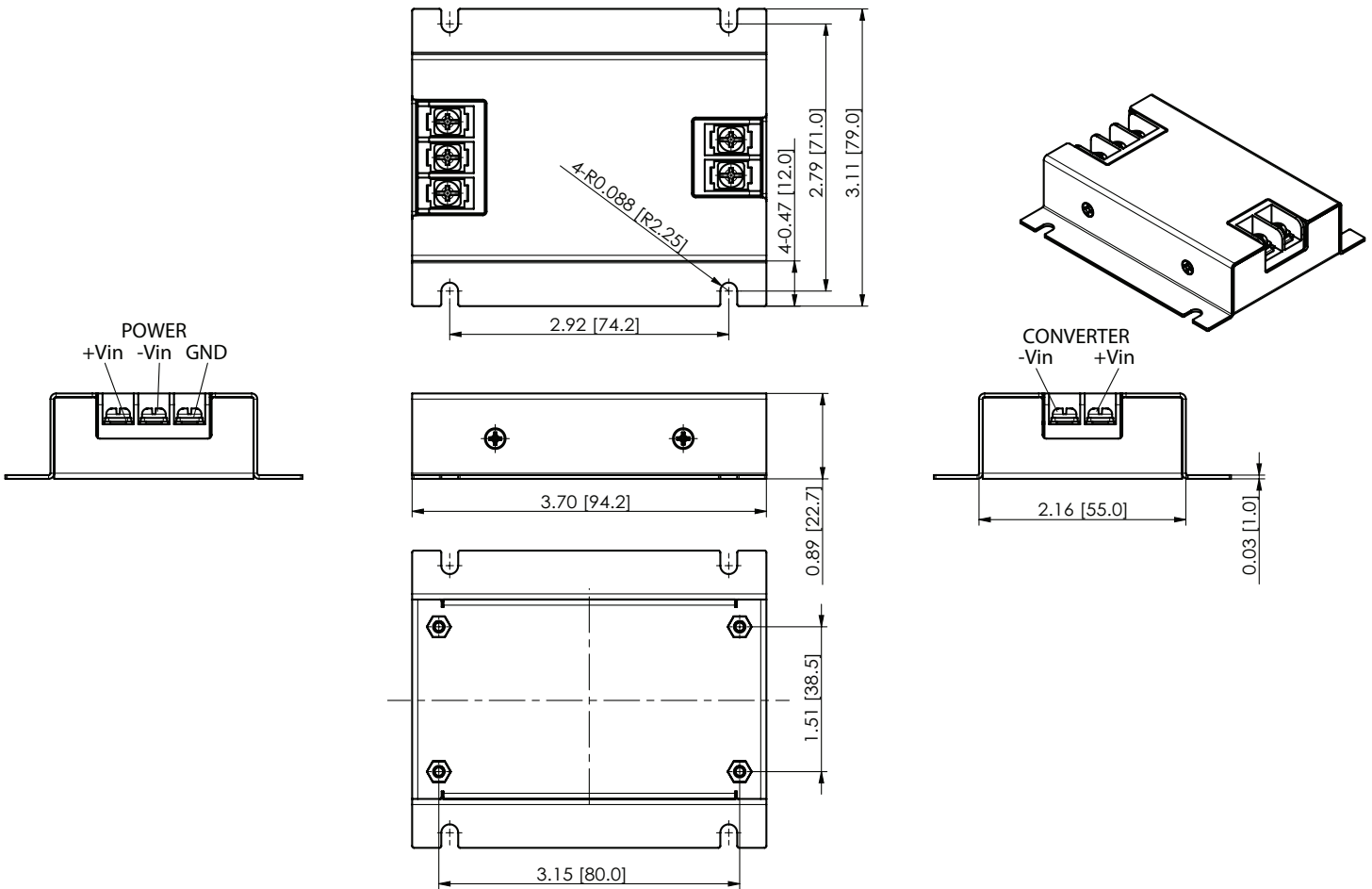
DIMENSIONS:  
 NOTE: Pin Size is  $\varnothing 0.04$  inch ( $\varnothing 1.02$  mm)  
 All Dimensions in inches (mm)  
 Tolerances: Inches: X.XX=  $\pm 0.02$ , X.XXX=  $\pm 0.010$   
 Millimeters: X.X=  $\pm 0.5$ , X.XX=  $\pm 0.25$

PIN CONNECTION	
Pin	Function
1,2	+V Input
3,4	-V Input
5,6	+V Output
7,8	-V Output
9	GND

**SERIES:VFM-XX**

**DESCRIPTION: DC EMI FILTER**

**DRAWING (VFM-15C/25C)**

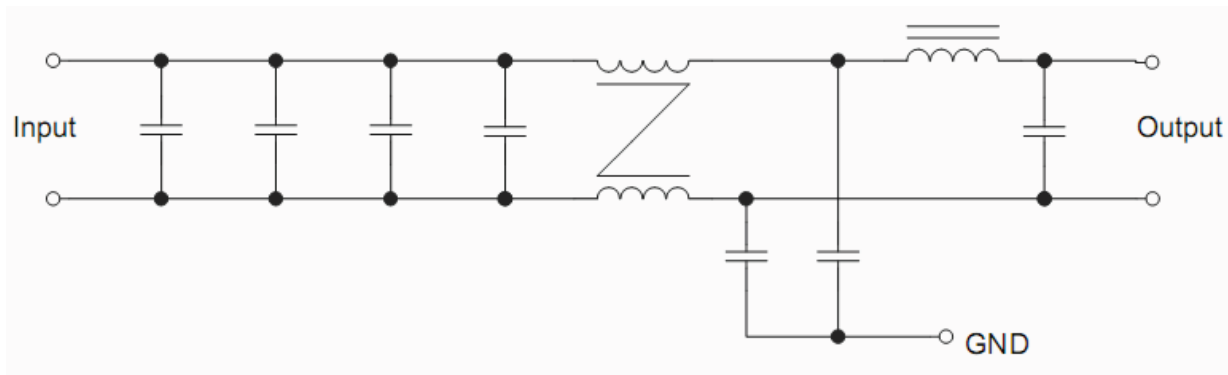




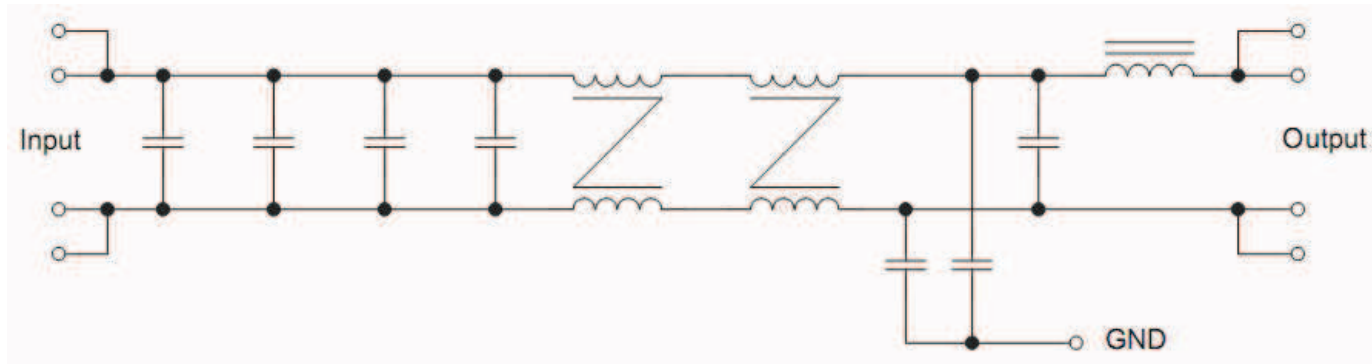
**SERIES:VFM-XX**

**DESCRIPTION: DC EMI FILTER**

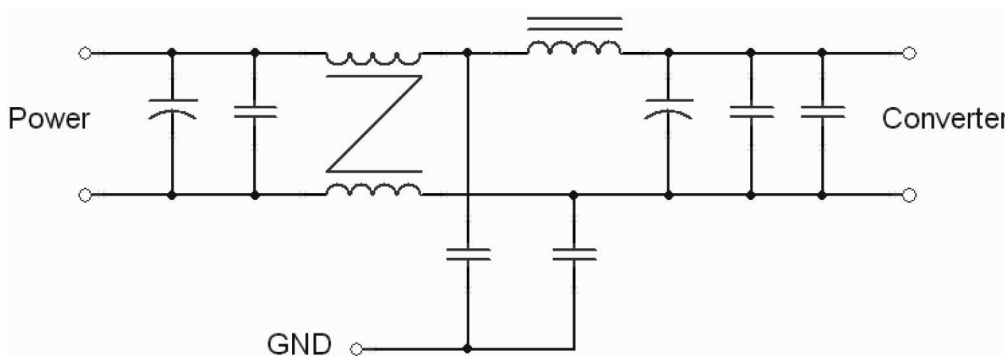
**VFM-10A INTERNAL SCHEMATIC**



**VFM-20A INTERNAL SCHEMATIC**



**VFM-15C/25C INTERNAL SCHEMATIC**

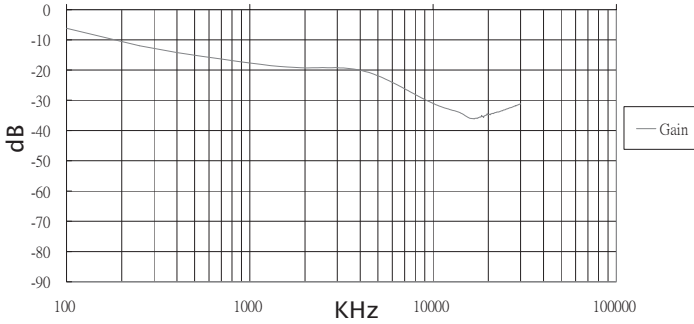


**SERIES:VFM-XX**

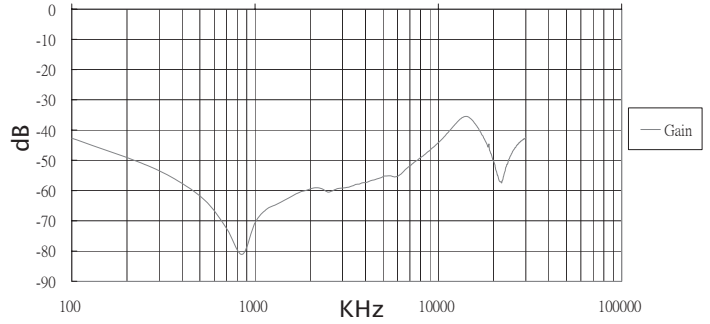
**DESCRIPTION:DC EMI FILTER**

**INSERTION LOSS (VFM-10A)**

**COMMON MODE**

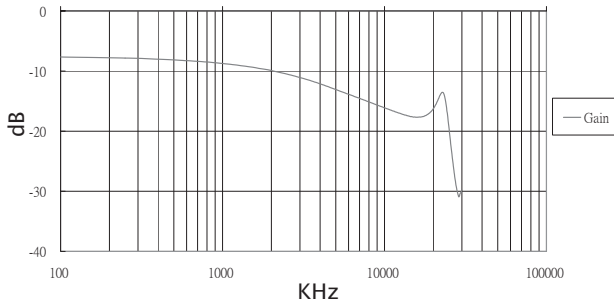


**DIFFERENTIAL MODE**

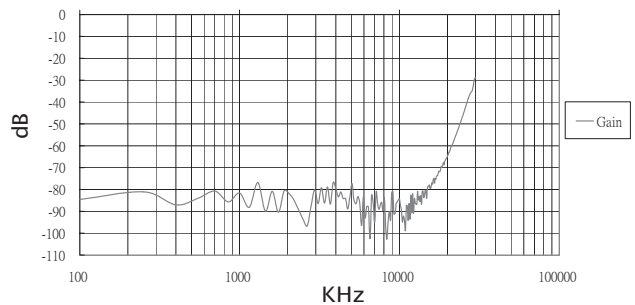


**INSERTION LOSS (VFM-15C)**

**COMMON MODE**

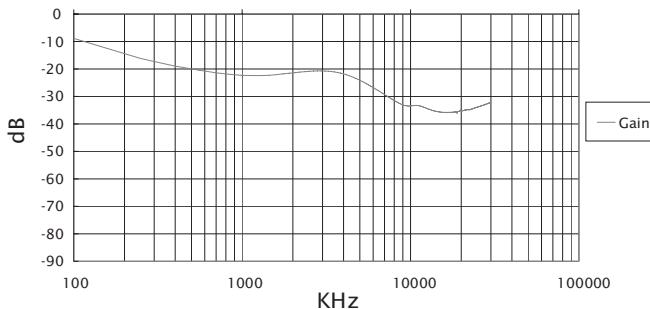


**DIFFERENTIAL MODE**

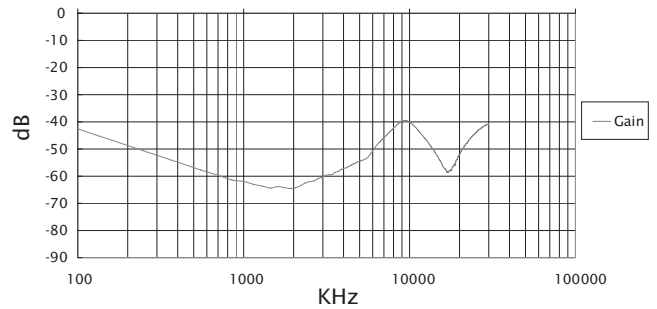


**INSERTION LOSS (VFM-20A)**

**COMMON MODE**



**DIFFERENTIAL MODE**

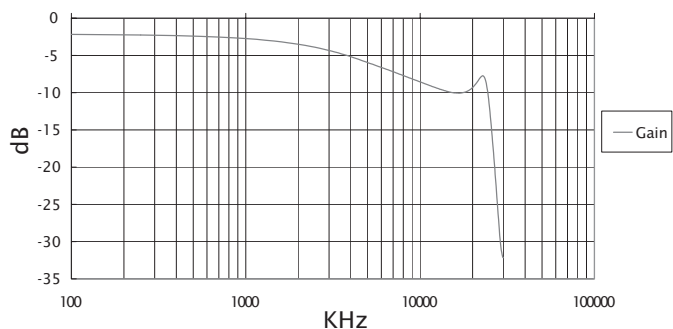


**SERIES:VFM-XX**

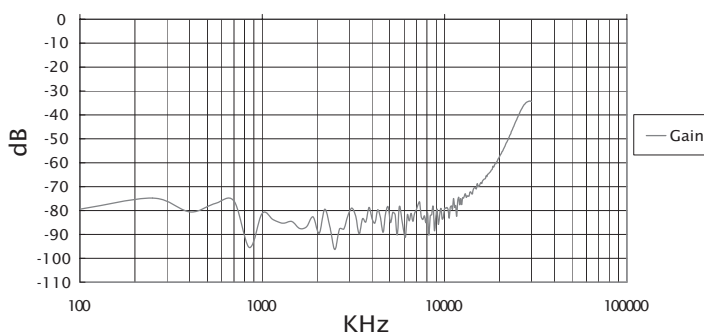
**DESCRIPTION: DC EMI FILTER**

**INSERTION LOSS (VFM-25C)**

**COMMON MODE**



**DIFFERENTIAL MODE**

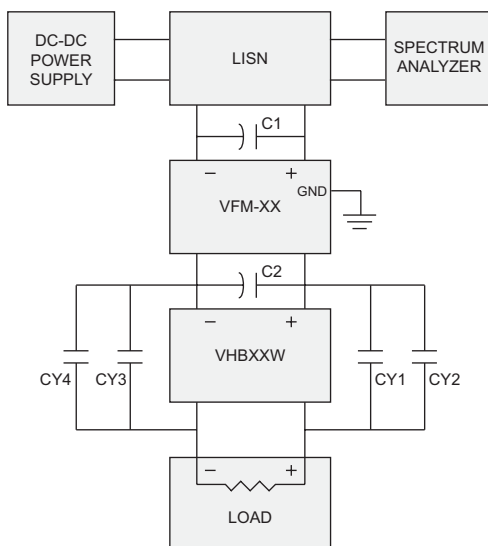


**APPLICATION NOTES**

The following application note shows EN55022 class B conducted emissions tests for the VFM-XX series EMI filters in series with a VHK or VHB series DC/DC converter and a purely resistive load. This information is for example only. Actual results may vary.

**1) EMI Filtering - Connection Diagram**

Filter Model (VFM-XX)	DC-DC Converter Model (VHXXXW)	C1	C2	CY1	CY2	CY3	CY4
<b>VFM-10A</b>	VHB50W-Q24-S5	47 μF/100 V KY	•••	•••	•••	•••	•••
	VHB50W-Q48-S5	47 μF/100 V KY	•••	•••	•••	•••	•••
<b>VFM-15C</b>	VHK200W	•••	•••	•••	•••	•••	•••
<b>VFM-20A</b>	VHB150W-Q24-S5	47 μF/100 V KY	220 μF/100 V KY	1000 pF / 2 KV	•••	1000 pF / 2 KV	560 pF/2 KV
	VHB150W-Q48-S5	•••	220 μF/100 V KY	1000 pF / 2 KV	•••	1000 pF / 2 KV	560 pF/2 KV
<b>VFM-25C</b>	VHK200W	•••	•••	•••	•••	•••	•••

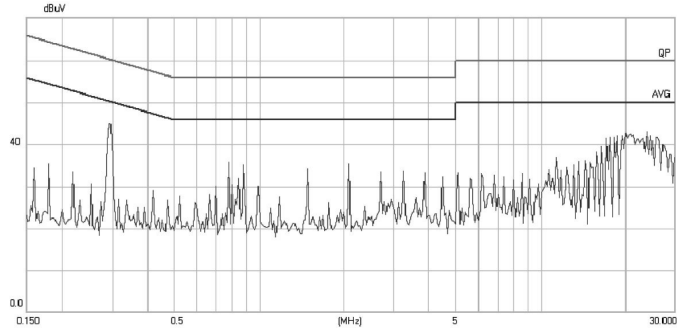


**SERIES: VFM-XX**

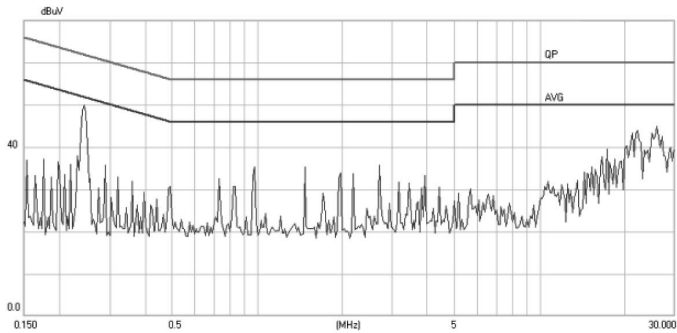
**DESCRIPTION: DC EMI FILTER**

**2) Conducted Emission Measurement**

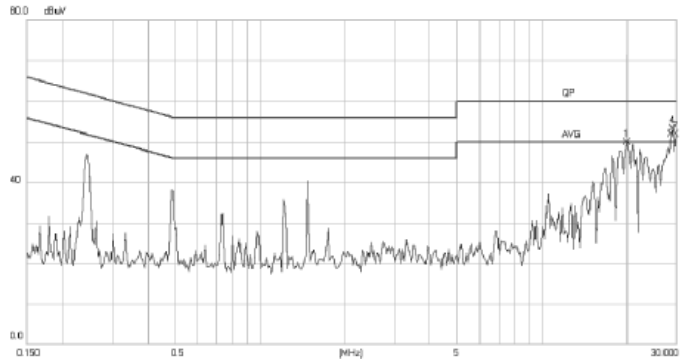
**Filter Model: VFM-10A**  
DC-DC Converter Model: VHB50W-Q24-S5  
Input Voltage: 12 Vdc



**Filter Model: VFM-20A**  
DC-DC Converter Model: VHB150W-Q24-S5  
Input Voltage: 12 Vdc



**Filter Model: VFM-15C**  
DC-DC Converter Model: VHK200W-Q48-S12  
Input Voltage: 48 Vdc



**Filter Model: VFM-25C**  
DC-DC Converter Model: VHK200W-Q24-S12  
Input Voltage: 24 Vdc

