

FILTER AND FRONT-END MODULES

FEATURES

- Inputs: 115 Vac 60/400 Hz
- Output power: 250 W
- MIL-STD-704A-F input transients protection
- MIL-STD-461D/E EMI compliant
- MIL-STD-810, MIL-STD-202 environments
- Compatible with MI-x7x family modules
- Efficiency: 95%
- Operating temperature to +100°C
- Size: 2.28" x 2.4" x 0.5" (57,9 x 61,0 x 12,7 mm)



PRODUCT INFORMATION

The **AC input module** interfaces directly with AC mains to provide line rectification, EMI filtering, transient protection, and inrush limiting. These front-end modules accept 115 Vac and provide 250 W of output power for any of Vicor's MI-x7x family of standard and junior-size modules.

The **MI-AIM** meets CE102 conducted emissions requirements of MIL-STD-461D/E and the transient and spike requirements of MIL-STD-704A-F.

Fully encapsulated in Vicor's industry standard package, the **MI-AIM** meets MIL-STD-810 Environmental testing requirements for humidity, fungus, salt-fog, explosive atmosphere, acceleration, vibration and shock.

GENERAL SPECIFICATIONS

(At TBP = 25°C, unless otherwise specified)

PARAMETER INPUT	MIN	TYP	MAX	UNIT	NOTE
Steady state input (V)	85	115	140	Vrms	
(f)	47	60 / 400	440	Hz	Operates over entire range
Transient input (V)	80			Vrms	20 ms, per MIL-STD-704A
			180	Vrms	100 ms, per MIL-STD-704A
(f)			480	Hz	Peak, per MIL-STD-704A
Inrush current			40	A, peak	125 Vac
Conducted EMI	CE102 per MIL-STD-461D/E				100 – 125 Vac; 60 Hz
Efficiency		95		%	115 Vac; 60 / 400 Hz
Spikes			±50	%	Nominal line voltage, 50 µs

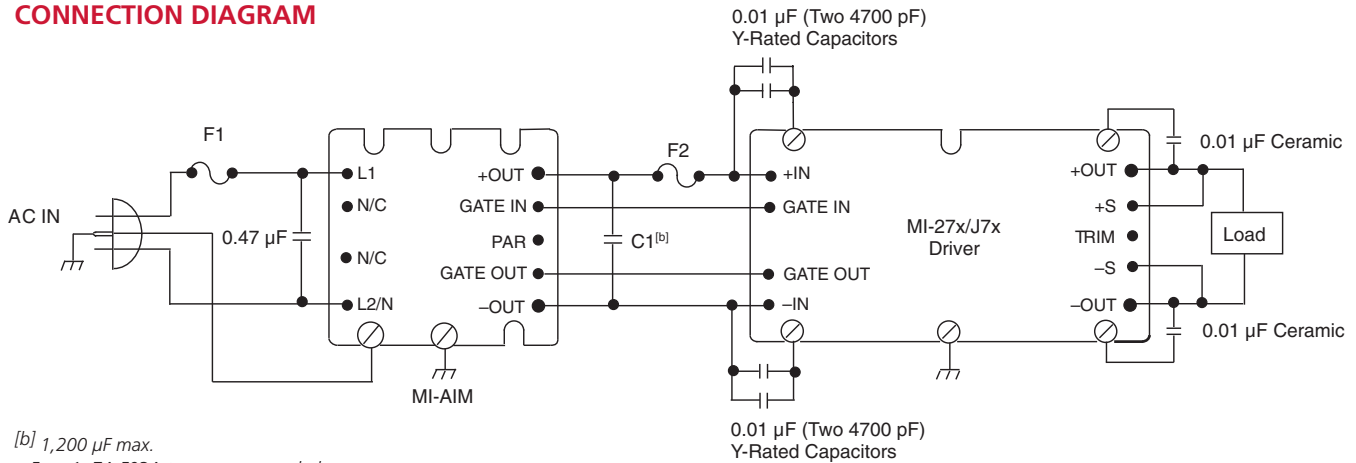
PARAMETER OUTPUT	MIN	TYPE	MAX	UNIT	NOTE
Power		250		W	100°C
Ext. capacitance (C1)		1,200		µF	See connection diagram
Isolation					
Input to output	none				Provided by converter
Input to baseplate	1500			Vrms	
ENVIRONMENTAL					
– MIL-STD-810					
Altitude					
- Method 500.2	70,000			feet	Procedure II
Humidity					
- Method 507.2	88 / 240			% / hs	Procedure I, cycle 1
Acceleration					
- Method 513.3	9.0			g	Procedure II
Vibration					
- Method 514.3	20			g	Procedure I, category 6
Shock					
- Method 516.3	40			g	Procedure I
RELIABILITY					
– MIL-HDBK-217F (MI-AIM-M1)					
25°C Ground Benign: G.B.		5,355		1,000 hrs	
50°C Naval Sheltered: N.S.		964		1,000 hrs	
65°C Airborne					
Inhabited Cargo: A.I.C.		755		1,000 hrs	
MECHANICAL					
Thermal resistance		0.14		°C/W	Baseplate to sink, w/thermal pad
Weight		3.5 (85)		ounces (grams)	

PRODUCT GRADE SPECIFICATIONS

PARAMETER PART NUMBER	PRODUCT GRADE	
	I-GRADE MI-AIM-I1	M-GRADE MI-AIM-M1
Storage temperature	-55°C to +125°C	-65°C to +125°C
Operating temperature (baseplate)	-40°C to +100°C	-55°C to +100°C
Power cycling burn-in	12 hrs, 29 cycles	96 hrs, 213 cycles
Temperature cycled with power off	12 cycles	12 cycles
17°C per minute rate of change	-65°C to +100°C	-65°C to +100°C
Test data supplied at these temperatures ^[a]	-40°C, +80°C	-55°C, +80°C
Warranty	2 years	2 years
Environmental compliance	MIL-STD-810	MIL-STD-810

^[a] Test data available for review or download from vicorpower.com

CONNECTION DIAGRAM

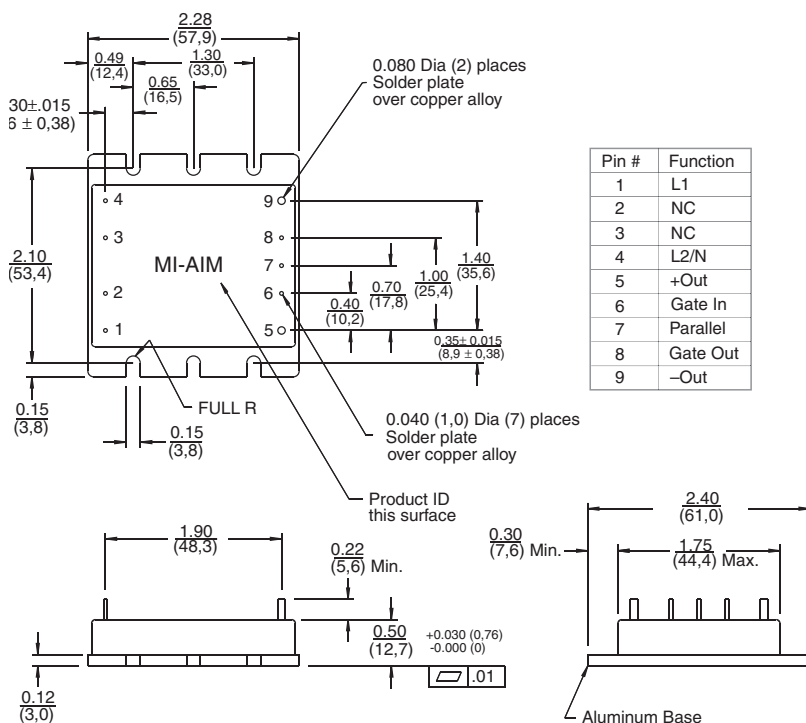


^[b] 1,200 µF max.

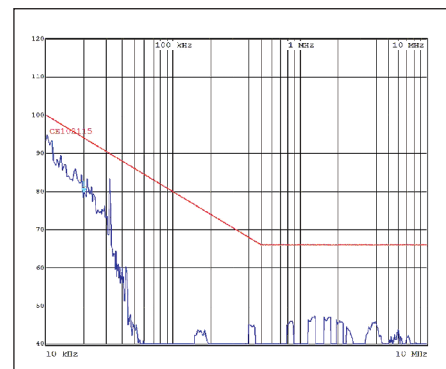
Fuse 1: 7A F03A type recommended

Fuse 2: MI-x7x-xx – Buss PC – TRON 2 – 5 A (450 V)

MECHANICAL DRAWING $\frac{in}{(mm)}$



EMI COMPLIANCE



MIL-STD-461E, CE102 compliance with MI-AIM and MI-200 operating at 115 Vac / 60 Hz input and 12 Vdc / 100 W output