



## SPECIFICATIONS

(typical at  $T_{BP} = 25^{\circ}\text{C}$ , nominal line and 75% load, unless otherwise specified)

### INPUT SPECIFICATIONS

Parameter	Min	Typ	Max	Unit	Notes
Input voltage	10	28	36	Vdc	Continuous
Inrush limiting			0.007	A/ $\mu\text{F}$	
Transient immunity			100	Vdc	50 ms per MIL-STD-1275A/B/D, continuous operation
			250	Vdc	70 $\mu\text{s}$ per MIL-STD-1275A/B/D, continuous operation
			70	Vdc	20 ms per MIL-STD-704A, continuous operation
			50	Vdc	12.5 ms per MIL-STD-704E/F, continuous operation

### OUTPUT SPECIFICATIONS

Parameter	Min	Typ	Max	Unit	Notes
Output power			500	W	
Output current			18	A	
Efficiency	96	97		%	
Internal voltage drop		0.85	1.5	V	500 W, 25°C baseplate
External capacitance	330		1000	$\mu\text{F}$	See Figure 5 on page 4 50 V

### CONTROL PIN SPECIFICATIONS

Parameter	Min	Typ	Max	Unit	Notes
ON/OFF control					
Enable (ON)	0.0		1.0	Vdc	Referenced to – Vout
Disable (OFF)	3.5		5.0	Vdc	100 k $\Omega$ internal pull up resistor

### SAFETY SPECIFICATIONS

Parameter	Min	Typ	Max	Unit	Notes
Dielectric withstand		1,500	Vrms		Input/Output to Base
		2,121	Vdc		Input/Output to Base

### EMI

Standard	Test Procedure	Notes
MIL-STD-461E		
Conducted emissions:	CE101, CE102	When using with V28 series converters a 27 $\mu\text{H}$ inductor is needed between the filter and converter for compliance below 30% of rated power.
Conducted susceptibility:	CS101, CS114, CS115, CS116	

EMI performance is subject to a wide variety of external influences such as PCB construction, circuit layout etc. As such, external components in addition to those listed herein may be required in specific instances to gain full compliance to the standards specified.

### GENERAL SPECIFICATIONS

Parameter	Min	Typ	Max	Unit	Notes
Weight			0.7 (318)	Lbs (grams)	
Warranty			2	Years	

## SPECIFICATIONS (CONT.)

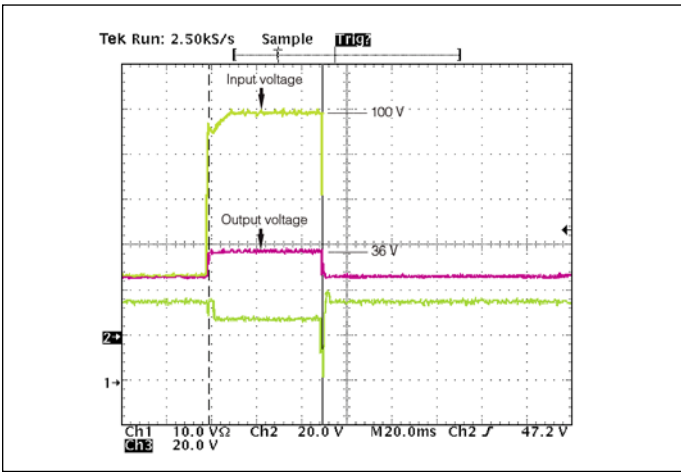
### ■ MODULE ENVIRONMENTAL QUALIFICATION

<b>Altitude</b>	MIL-STD-810F, Method 500.4, Procedure I & II, 40,000 ft. and 70,000 ft. Operational.
<b>Explosive Atmosphere</b>	MIL-STD-810F, Method 511.4, Procedure I, Operational.
<b>Vibration</b>	MIL-STD-810F, Method 514.5, Procedure I, Category 14, Sine and Random vibration per Table 514.5C for Helicopter AH-6J Main Rotor with overall level of 5.6 G rms for 4 hours per axis. MIL-STD-810F, Method 514.5C, General Minimum Integrity Curve per Figure 514.5C-17 with overall level of 7.7 G rms for 1 hour per axis.
<b>Shock</b>	MIL-STD-810F, Method 516.5, Procedure I, Functional Shock, 40 g. MIL-S-901D, Lightweight Hammer Shock, 3 impacts / axis, 1,3,5 ft. MIL-STD-202F, Method 213B, 60 g, 9 ms half sine. MIL-STD-202F, Method 213B, 75 g, 11ms Saw Tooth Shock.
<b>Acceleration</b>	MIL-STD-810F, Method 513.5, Procedure II, table 513.5-II, Operational, 2-7 g, 6 directions.
<b>Humidity</b>	MIL-STD-810F, Method 507.4.
<b>Solder Test</b>	MIL-STD-202G, Method 208H, 8 hour aging.

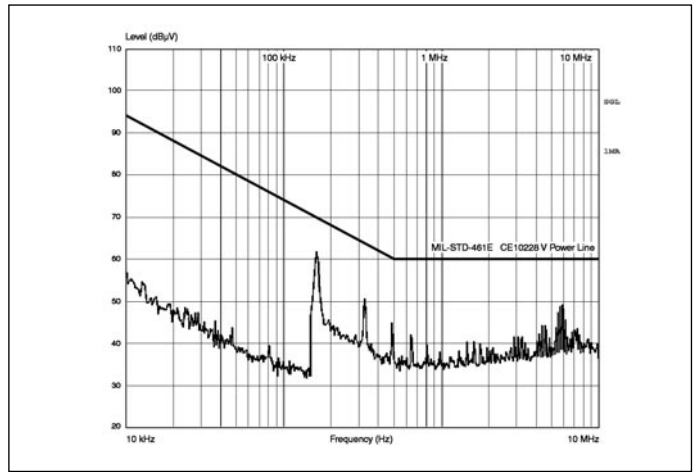
### ■ MODULE ENVIRONMENTAL STRESS SCREENING

Parameter	H-Grade	M-Grade
Operating temperature	-40°C to +100°C	-55°C to +100°C
Storage temperature	-55°C to +125°C	-65°C to +125°C
Temperature cycling*	12 cycles -65°C to +100°C	12 cycles -65°C to +100°C
Ambient test @ 25°C	Yes	Yes
Power cycling burn-in	12 hours, 29 cycles	24 hours, 58 cycles
Functional and parametric ATE tests	-40°C and +100°C	-55°C and +100°C
Hi-Pot test	Yes	Yes
Visual inspection	Yes	Yes
Test data	<a href="http://vicorpower.com">vicorpower.com</a>	<a href="http://vicorpower.com">vicorpower.com</a>

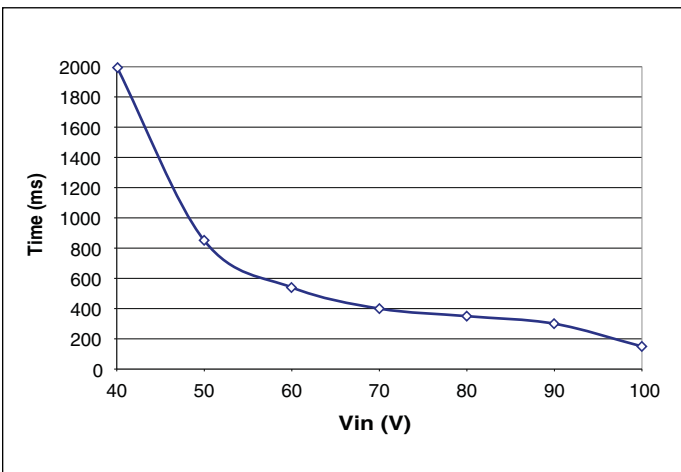
\*Temperature cycled with power off, 17°C per minute rate of change.



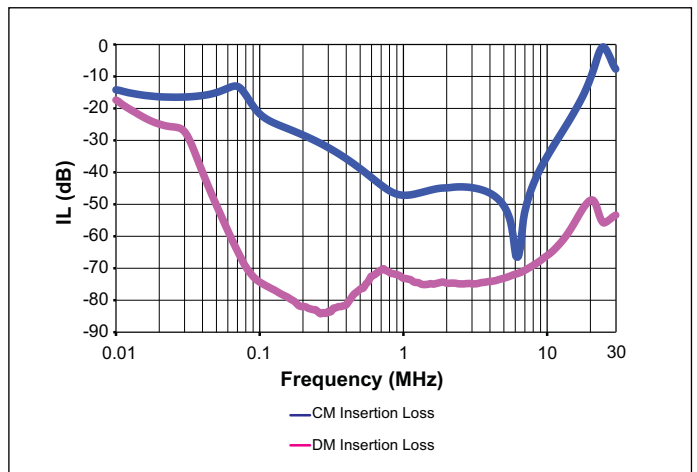
**Figure 1** — Transient Immunity: MVA-FIAM9 output response to an input transient.



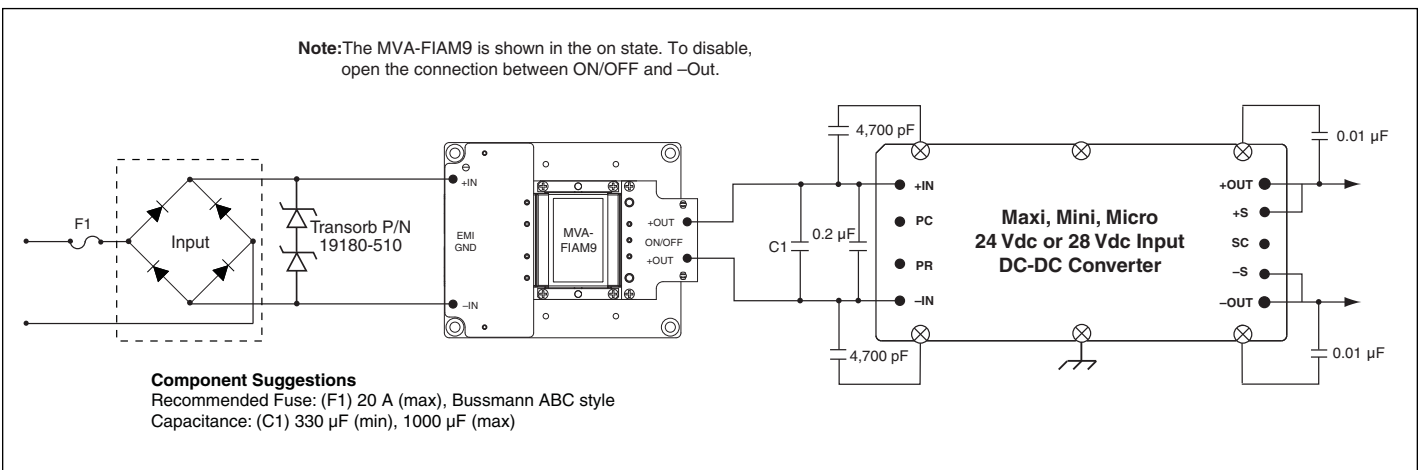
**Figure 2** — Conducted Noise; MVA-FIAM9 and model V28A12M200B DC-DC converter operating at 28 Vdc, 200 W



**Figure 3** — Shut down time of MVA-FIAM9 vs. Overvoltage

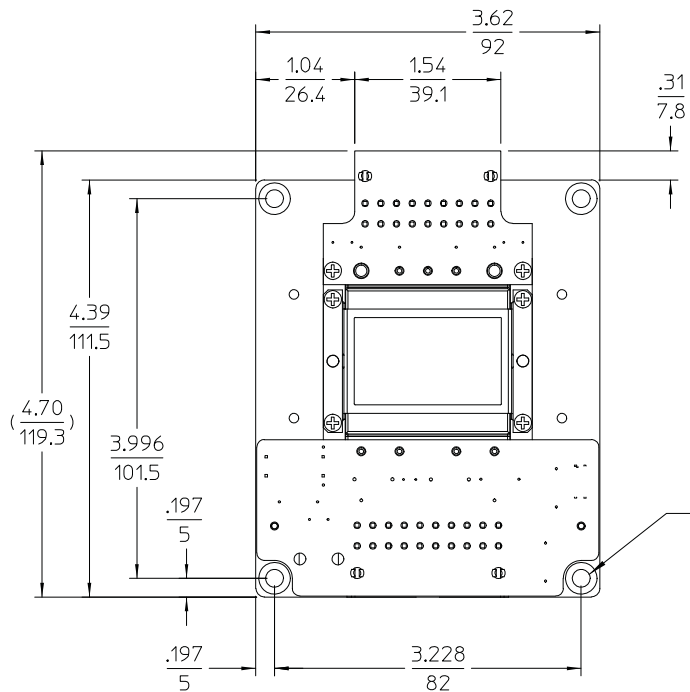


**Figure 4** — MVA-FIAM9 insertion loss

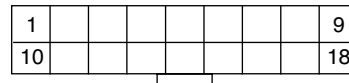
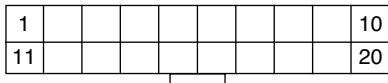
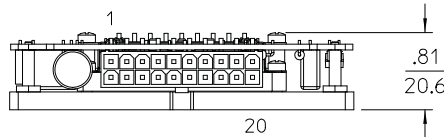


**Figure 5**— Transient, Surge Protection and Recommended Reverse Polarity Protection.

INCHES  
MM



TOLERANCES:  $\frac{.XX}{MM} = \frac{.02}{.5}$      $\frac{.XXX}{MM} = \frac{.010}{.25}$



**Input Connector**

Pin #	Function
1 – 4	–Vin
5 – 7	+Vin
8	NC
9	PE protective earth
10	PE protective earth
11 – 13	–Vin
14 – 17	+Vin
18	NC
19	PE protective earth
20	PE protective earth

**Output Connector**

Pin #	Function	Pin #	Function
1	+Vout	10	+Vout
2	+Vout	11	+Vout
3	+Vout	12	+Vout
4	N/C	13	NC
5	N/C	14	NC
6	N/C	15	On / Off
7	–Vout	16	–Vout
8	–Vout	17	–Vout
9	–Vout	18	–Vout

Input Mounting Connector	Vicor P/N
Housing	24795
Pin	24796
Kit	24828

Output Mounting Connector	Vicor P/N
Housing	25050
Pin	24796
Kit	25067

**Note:** The MVA-FIAM9H and MVA-FIAM9M are delivered with the On / Off control already configured as On using a 0 Ohm resistor on the underside of the output connector board. The MVA-FIAM9H-C and MVA-FIAM9M-C are delivered without the 0 Ohm resistor installed, allowing for user control of the On / Off functionality.

Figure 6 — MVA-FIAM9 Outline and Pinouts

## **Warranty**

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