

28 V MIL-VIPAC

MILITARY

CONFIGURABLE SOLUTIONS

FEATURES

- 28 Vdc input
- -55°C operation
- MIL-STD-461E EMI compliance^[a]
- MIL-STD-704A/E/F and MIL-STD-1275A/B/D input transient protection
- Compliant to MIL-STD-810F for vibration (Method 514.5, Procedure I) & shock (Method 516.5, Procedure I)
- One, two, or three outputs
- Outputs from 3.3 to 48 Vdc
- 50 to 400 W per output
- Environmental stress screening (modules only)
- Two output termination styles



^[a] CE102 compliant with loads in excess of 30% of rated output; loads below 30% may need additional input capacitance for compliance

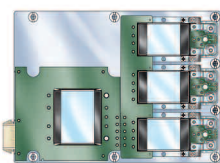


PRODUCT INFORMATION

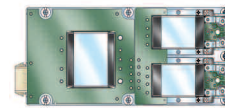
The **28 Vdc MIL-COTS VIPAC** family of power systems is a new class of user-defined, modular power solutions for the most demanding military applications. It incorporates preassembled and tested front ends (M-FIAM5B or M-FIAM9), Vicor Maxi, Mini and Micro Family DC-DC converters (H or M-Grade), and a choice of output connections and mechanical platforms. The 28 Vdc VIPAC can be specified with one, two or three outputs with voltages as low as 3.3 Vdc to as high as 48 Vdc and power levels from 50 to 400 W per output. Additionally, the wide trim range of the modules can provide operating voltages from 500 mV to 52.8 V. The MIL-VIPAC is available with an input of 28 Vdc in a variety of packages with profiles as low as 0.75".

Consult Powerbox Sales for additional technical or design information to configure a tailored system.

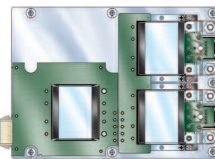
CONFIGURATIONS



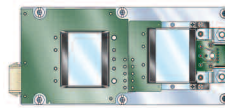
- 3 Micros**
- 4.96" x 6.8" (126,0 x 172,7 mm)
 - 1.4 lbs (640 g)^[b]
 - Dual or triple output
 - Up to 300 W



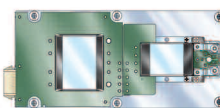
- 2 Micros**
- 3.15" x 6.8" (80,0 x 172,7 mm)
 - 1.0 lbs (457 g)^[b]
 - Single or dual output
 - Up to 200 W



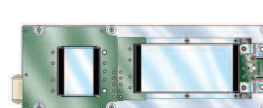
- 2 Minis**
- 4.96" x 6.8" (126,0 x 172,7 mm)
 - 1.4 lbs (640 g)^[b]
 - Single or dual output
 - Up to 400 W



- 1 Mini**
- 3.15" x 6.8" (80,0 x 172,7 mm)
 - 1.0 lbs (457 g)^[b]
 - Single output
 - Up to 200 W



- 1 Micro**
- 3.15" x 6.8" (80,0 x 172,7 mm)
 - 0.9 lbs (411 g)^[b]
 - Single output
 - Up to 100 W



- 1 Maxi**
- 3.15" x 9.15" (80,0 x 234,4 mm)
 - 1.3 lbs (594 g)^[b]
 - Single output
 - Up to 400 W

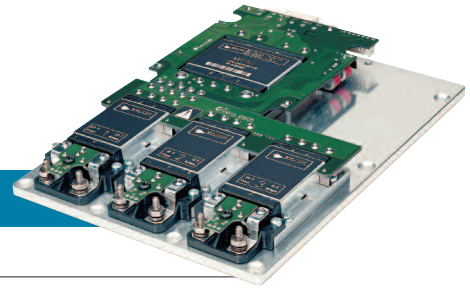
^[b] Weight is for the coldplate version only. Please refer to the VIPAC design guide for weight using finned heat sinks.

28 V MIL-VIPAC

CONFIGURABLE SOLUTIONS

GENERAL SPECIFICATIONS

(Typical at 25°C, nominal line and load, unless otherwise specified)



MILITARY

PARAMETER INPUT	MIN	TYPE	MAX	UNIT	NOTE
Input voltage	18	28	36	Vdc	Continuous
Inrush limiting			0.007	A/ μ F	
Transient immunity	M-FIAM5B (MVC-xxx)		50	Vdc	12.5 ms per MIL-STD-704E/F, continuous operation
		M-FIAM9 (MVX-xxx)	100	Vdc	50 ms per MIL-STD-1275A/B/D, continuous operation
		250	Vdc	70 μ 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
EMI					MIL-STD-461E
Conducted emissions					CE101, CE102 ^[c]
Conducted susceptibility					CS101, CS114, CS115, CS116
Reverse polarity protection					Internally fused

PARAMETER OUTPUT	MIN	TYPE	MAX	UNIT	NOTE
Output voltage set point			± 1	%	Vout nom
Line regulation		± 0.02	± 0.2	%	Low line to high line; full load
Temperature regulation		± 0.002	± 0.005	%/ $^{\circ}$ C	Over operating temperature range
Over temperature shut down		+115		$^{\circ}$ C	
Power sharing accuracy		± 2	± 5	%	
Programming range	10		110	%	Of nominal voltage (For trimming below 90% of nominal, a minimum load of 10% rated power may be required)
Current limit		115		% Iout max	Output voltage 95% of nominal
Short circuit current		115		% Iout max	Output voltage <250 mV

^[c] CE102 compliant with loads in excess of 30% of rated output; loads below 30% may need additional input capacitance for compliance

PARAMETER ENVIRONMENTAL	MIN	TYPE	MAX	UNIT	NOTE
Dielectric withstand, input to chassis	1,500 / 2,121			Vrms / Vdc	
Dielectric withstand, input to output	3,000 / 4,242			Vrms / Vdc	
Operating temperature, ambient					
H-Grade	-40	+65		$^{\circ}$ C	Max chassis temp; 95 $^{\circ}$ C
M-Grade	-55	+65		$^{\circ}$ C	Max chassis temp; 95 $^{\circ}$ C
Shock					
MIL-STD-810F, Method 516.5, Procedure I					40 g for 15 – 23 ms, 75 g for 8 – 13 ms
Vibration					
MIL-STD-810F, Method 514.5, Procedure I					20 – 2,000 Hz at 5 G rms