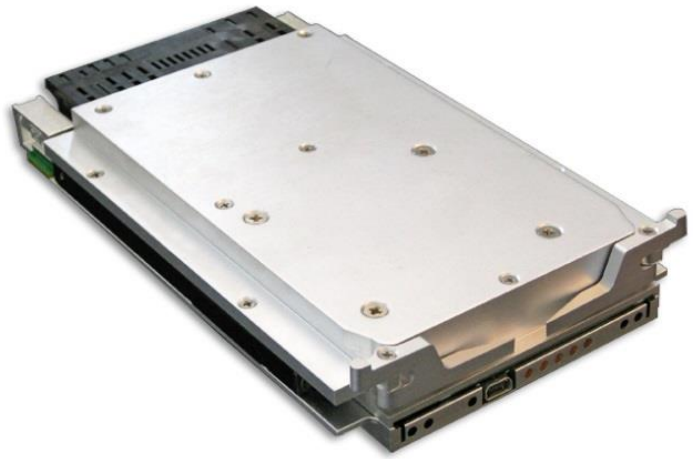
Datasheet

VITA 62 POWER SUPPLY LINE



Key Features:

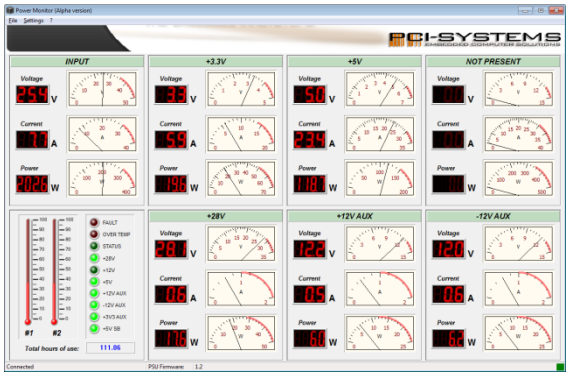
- 270VDC Continuous Input Voltage
- 1800V Isolation Between Input /Output
- Active Input EMI Filtering
- Transient look ahead/cut-off technology
- 6 Voltage output Rails
- Isolated 3.3V aux standby feature
- 680W Continuous Power
- 93% Typical Efficiency
- -55°C to 95°C Operating Temperature
- VITA 62 3U Form Factor
- VITA 46.11 ready
- Patent pending **FourRail** thermal interface
- **[SMART.PSU]** Technology

VITA 62 3U ISOLATED 680W 270 VDC POWERSUPPLY

This 3U power supply works with **270VDC input** isolates the input voltage ground from the output voltage ground. The power supply is **conduction cooled**, uses **poly-phase** technology on all voltage rails and can provide up to **680 watts**. It is suitable for use in **mission critical rugged applications**.

[SMART.PSU]PCI-Systems Inc. intelligent power supplies integrate **a microcontroller** (MCU) for a fully programmable and flexible solution. Intelligent power conversion allows **configuration and reconfiguration** for different applications. With intelligent power conversion, the power supply becomes a platform solution for Vita 46.11 system management based systems. The power supply can easily be **reprogrammed** to support different **operating limits and control inputs**.

Features:



- Parallel operating with multiple power supplies, all rails
- Load sharing and balancing
- Digital On/Off control for low standby power
- Input / Output Voltage rail setting /adjustment
- Spread Spectrum Clocking of power supply stages
- Possibility of external synchronization
- Power supply sequencing and hot-swap control
- Power supply history logging and fault management
- Monitoring all input/output voltages, currents and power
- Current fold back control
- Automatic temperature drift compensation for all outputs
- Total-Elapsed-Time Recorder
- Efficiency calculations at any time
- Communication via SMB/I2C (PMB)for Vita 46.11 system management
- Collects data from temperature sensors for over temperature protection

中国区总代理：上海佳舍珀电子科技有限公司　　电话：021-50342560丨手机：13764303579丨电子邮件：roman.xiao@fitpower.cn丨www.fitpower.cn

Overview	
P/N	**PCI_800.116**
Hold Up time	**1ms**
VITA Compliant	**VITA62**
Size	**3U**
Temp. Range	**-55 +95 C**
Input (AC or DC)	**DC**
Input Range	**270**
Active EMI Filtering	**YES**
Power (W, max.)	**680**
Efficiency (%, typ.)	**93**
# of outputs	**6**

OUTPUTS (Total output not to exceed 660W)	
VS1, V@A	**+12@40A**
VS2, V@A	**+3.3@20A**
VS3, V@A	**+5@40A**
AUX, V@A	**+3.3@4A**
AUX, V@A	**+12@1.5A**
AUX, V@A	**-12@1.5A**

FEATURES	
Over-current Protection	**YES**
Over-voltage Protection	**YES**
Over-temperature Protection	**YES**
Current Sharing	**All rails**
Remote Sense	**YES**
Standard Control	**YES, VITA62**
Extended Control	**YES, PCI Systems**

COMPLIANCE	
VITA62	**YES**
MIL-STD-704 (B-F)	**YES**
MIL-STD-461	**YES**
MIL-STD-810G	**YES**
* ESD Protection	**YES**
* Shock	**YES**
* Vibration	**YES**
* Rapid Decompression	**YES**
* Corrosion Resistance	**YES**
* Fungus Resistance	**YES**
* Altitude	**YES**
* Humidity	**YES**

INPUT CHARACTERISTICS					
Parameter	*Min.*	*Typ.*	*Max.*	*Units*	*Notes*
Absolute Maximum Ratings					
Input Voltage					
- *Non-Operating*	**-60**		**400**	V	Continuous
- *Operating*	**-40**		**400**	V	Continuous- Reverse input Protection
- *Operating Transient Protection*			**500**	V	100ms transient, square wave
Isolation Voltage			**1800**	V	
Operating Temperature	**-55**		**95**	C	
Storage Temperature	**-55**		**105**	C	
Electrical Characteristics					
Input Voltage					
- *Continuous*	**225**		**350**	V	
- *Transient*			**480**	V	480V Transient for 100 ms
Under-Voltage Lockout					
- Turn-On Input Voltage Threshold	**225**	**270**	**350**	V	

中国区总代理：上海佳舍珀电子科技有限公司　　电话：021-50342560丨手机：13764303579丨电子邮件：roman.xiao@fitpower.cn丨www.fitpower.cn

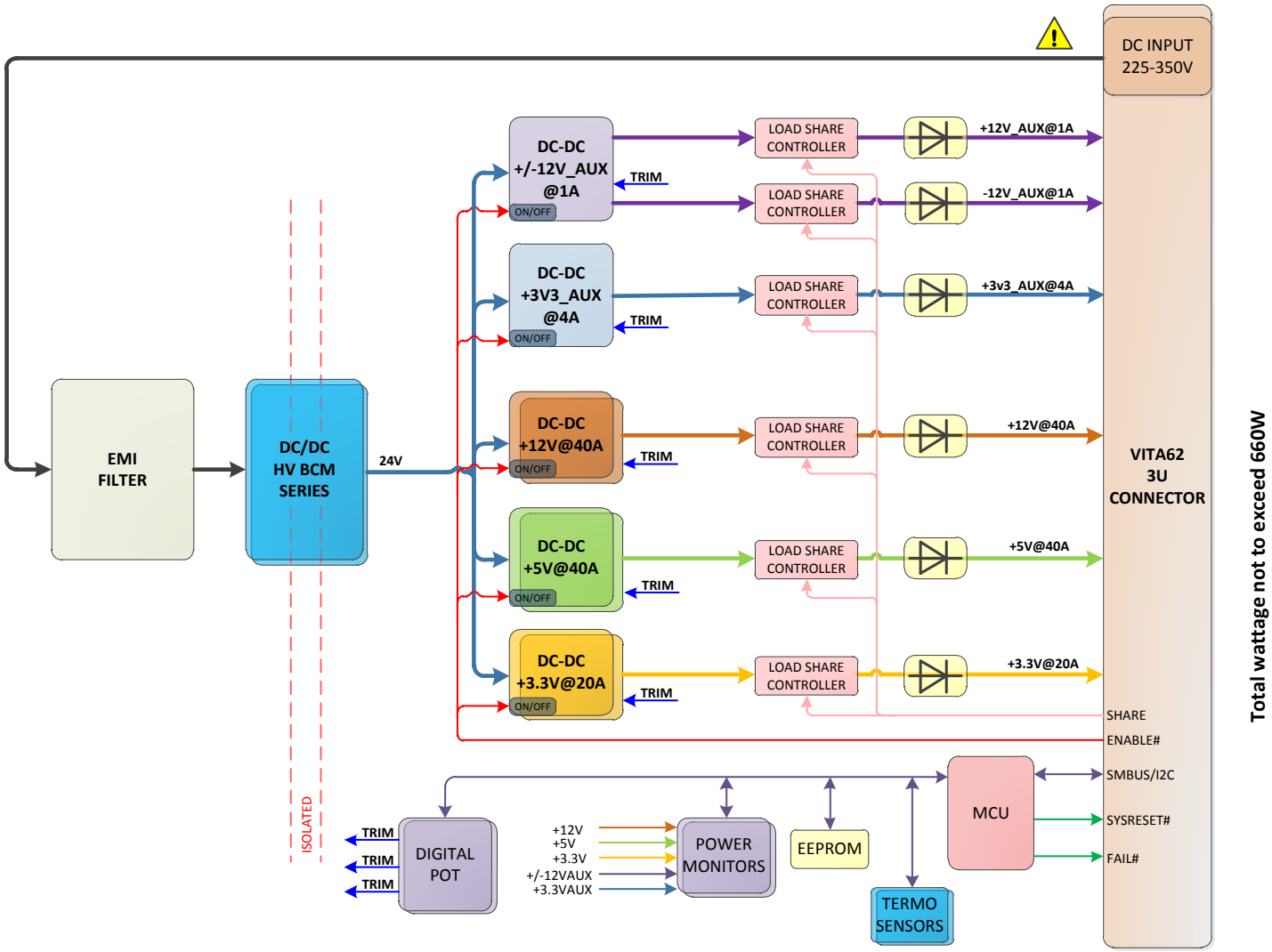
INPUT VOLTAGE SPIKES SUPPRESSION (Vin Centered)	
+/- 450V, 100 us	**MIL-STD-1275D**
+/- 490V, 10 us	**MIL-STD-461C (CS06); DEF-STAN 61-5**
+/- 450V, 5 us	**MIL-STD-461C (CS06)**
+/- 600V, 10 us	**RTCA/DO-160E**

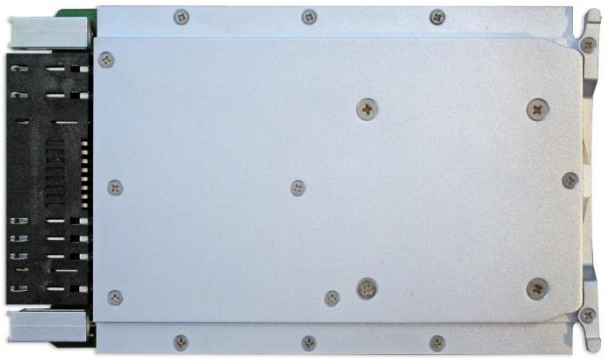
OUTPUT CHARACTERISTICS							
Parameter	*+12V*	*+5V*	*+3.3V*	*+3.3V aux*	*+12V aux*	*-12V aux*	*Notes*
Output Voltage Set Point, V	**12**	**5**	**3.3**	**3.3**	**12**	**-12**	Vin = 270VDC
- Drift -40 deg.C to 85degC +/- %	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	Vin = 270VDC
Output Voltage Trim Range, V	**12**	**5**	**3.3**	**3.3**	**12**	**-12**	Over Line/load/temp.
	+/- 10%	+/- 10%	+/- 10%	+/- 10%	+/- 10%	+/- 10%	Over Line/load/temp.
Output Voltage Ripple (pk-pk), mV	**80**	**50**	**40**	**40**	**80**	**80**	Full load with 1 uF + 10 uF tantalum capacitor
Operating Current Range, A	**0-40**	**0-40**	**0-20**	**0-4**	**0-1.5**	**0-1.5**	**680W** Total, combined Output
Over-Voltage Protection, V	**13**	**6**	**3.6**	**3.6**	**13**	**13**	
Current Limit Inception, A	**42**	**42**	**22**	**5**	**1.7**	**1.7**	
Maximum Output Capacitance, mF	**10**	**10**	**10**	**1**	**1**	**1**	

MODULE QUALIFICATION	
Test Name	*Method*
Random Vibration	**MIL-STD-810, 514.6 - Procedure I, Class V3**
Shock	**MIL-STD-810, 516.6 - Procedure I, VI, Class OS2**
Altitude	**MIL-STD-810, 500.5 - Procedure I, II, III**
Fungus Resistance	**MIL-STD-810, 508.6**
Corrosion Resistance	**ASTM G85, Annex A4**
Humidity	**MIL-STD-810, 507.5 - Procedure II**
High Temperature	**MIL-STD-810, 501.5 - Procedure I, II**
Low Temperature	**MIL-STD-810, 502.5 - Procedure I, II**
Temperature Cycling	**MIL-STD-202, 107 - Class C4**
ESD	**EN61000-4-2, Level 4; 15kV Air Discharge**

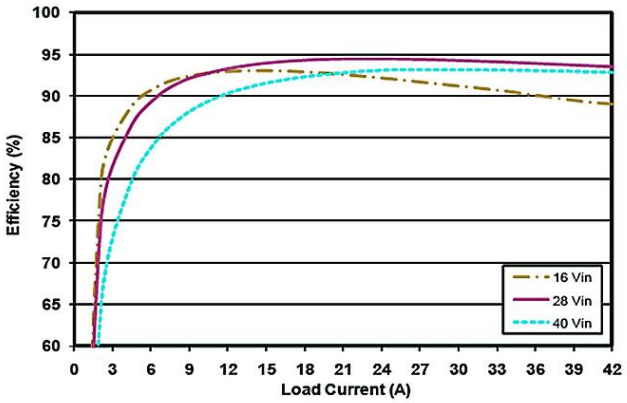
中国区总代理：上海佳舍珀电子科技有限公司　　电话：021-50342560丨手机：13764303579丨电子邮件：roman.xiao@fitpower.cn丨www.fitpower.cn

Block Diagram:

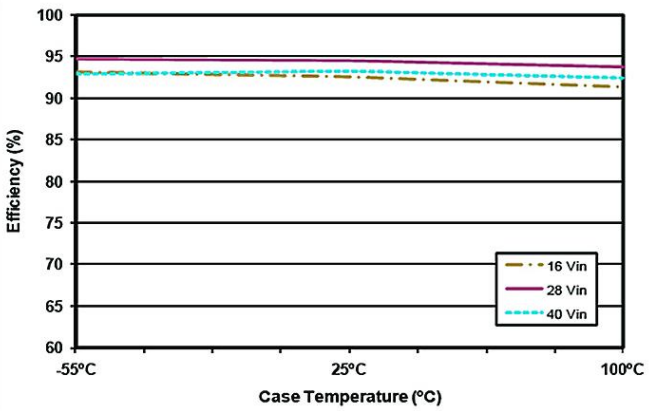




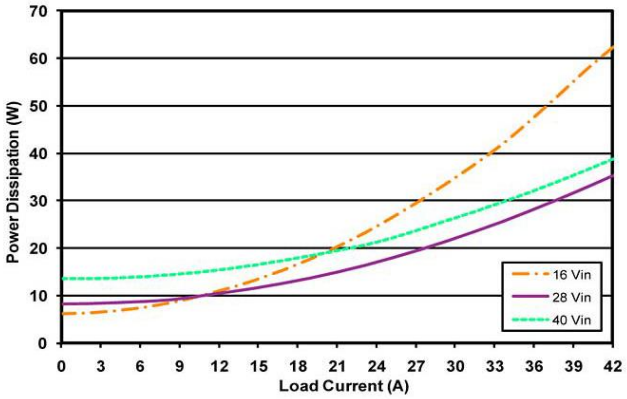
Pin-out: **As per VITA 62 specification**
Mechanical Dimensions: **As per VITA 62 specification (1” pitch)**



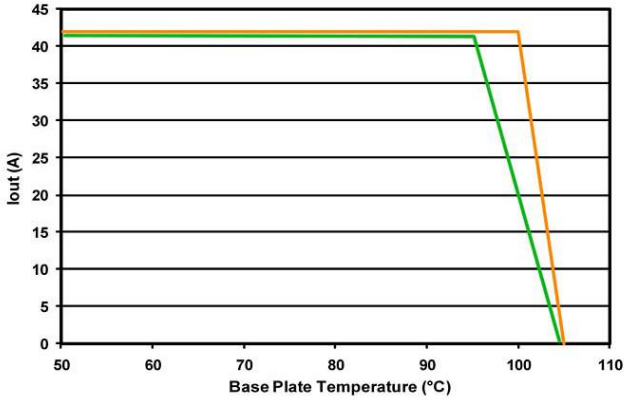
Efficiency at nominal output voltage vs. load curent for min, nom, max input V at 25°C



Efficiency at nominal output voltage and 60% rated power vs. case temp for min, nom, max input voltage



Power Dissipation at nominal output voltage vs. current at module cover 25°C (Delta T to wedgelock 7C°)



Thermal derating max current vs. temp at module cover. (Delta T to wedgelock 7C°)

ORDERING INFORMATION:

PCI_800.116	3U VITA 62 270VDC 680W Isolated Rugged Power Supply
PCI_800.116_C	Version with Conformal Coating

Release_Jan_16_2015

中国区总代理：上海佳舍珀电子科技有限公司 电话：021-50342560丨手机：13764303579丨电子邮件：roman.xiao@fitpower.cn丨www.fitpower.cn