



Key Features:

- 12V-40V wide Continuous Input Voltage
- 2300V Isolation Between Input /Output
- Active Input EMI Filtering
- Transient look ahead/cut-off technology
- 6 Voltage output Rails
- Isolated 3.3V aux standby feature
- 500W Maximum Power
- NO derating up to 85 deg. C at the rail
- 93% Typical Efficiency
- -40°C to 85°C Rail Operating Temperature
- VITA 62 3U Form Factor
- VITA 46.11 ready
- Patent pending **FourRail** thermal interface
- [SMART.PSU] Technology

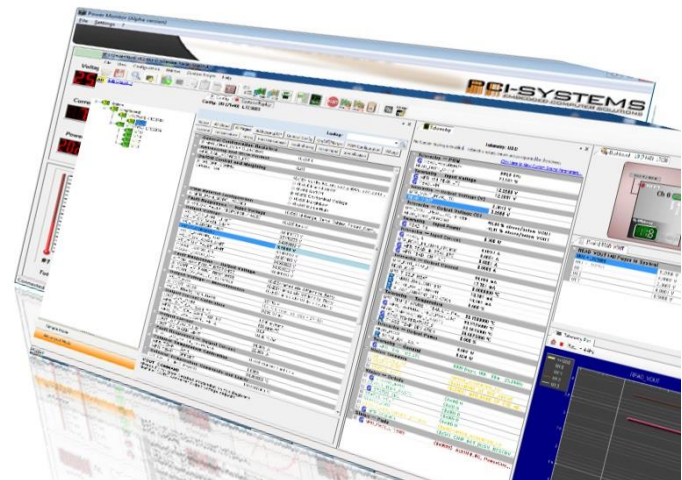
VITA 62 3U ISOLATED 500W 28VDC POWER SUPPLY

This 3U power supply works with **12VDC to 40 VDC (28VDC nominal) input** voltage and isolates the input voltage ground from the output voltage ground. The power supply is **conduction cooled**, uses **polyphase** technology on all voltage rails and can provide up to **500 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
- 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 ma
- Collects data from temperature sensors for over temperatur
- Precision compensation of all output voltages using integrat



Overview	
P/N	PCI_800.107
Hold Up time	1ms
VITA Compliant	VITA62
Size	3U
Temp. Range	-40 +85 C
Input (AC or DC)	DC
Input Range (VDC)	12-40
Active EMI Filtering	YES
Power (W, max.)	500
Efficiency (% , typ.)	93
# of outputs	6

OUTPUTS (Total output not to exceed 500W)	
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	VS1, VS2, VS3
Remote Sense	YES
Standard Control	YES, VITA62
Extended Control	YES, PCI Systems

COMPLIANCE	
Designed to meet the following standards, additional filter circuitry in the chassis may be required	
VITA62	YES
MIL-STD-704 (B-F)	YES
MIL-STD-461 E	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		60	V	Continuous
- Operating	-40		40	V	Continuous- Reverse input Protection
- Operating Transient Protection			100	V	50ms transient, square wave
Isolation Voltage			2300	V	
Operating Temperature	-40		85	C	
Storage Temperature	-55		105	C	
Electrical Characteristics					
Input Voltage					
- Continuous	12		40	V	
- Transient	12		50	V	100V Transient for 50ms -- MIL 1275E
Under-Voltage Lockout					
- Turn-On Input Voltage Threshold			10.5	V	
- Turn-Off Input Voltage Threshold	10			V	

INPUT VOLTAGE SPIKES SUPPRESSION (Vin Centered)	
Designed to meet the following standards, additional filter circuitry in the chassis may be required	
+/- 250V, 100 us	MIL-STD-1275E
+/- 200V, 10 us	MIL-STD-461E (CS06); DEF-STAN 61-5
+/- 400V, 5 us	MIL-STD-461E(CS06)
+/- 600V, 10 us	RTCA/DO-160E

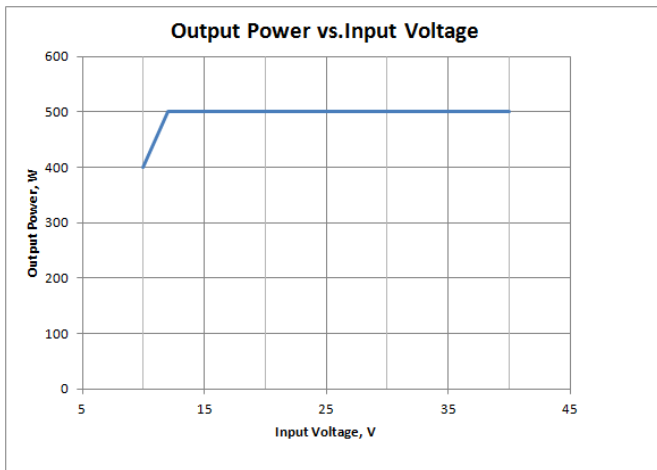
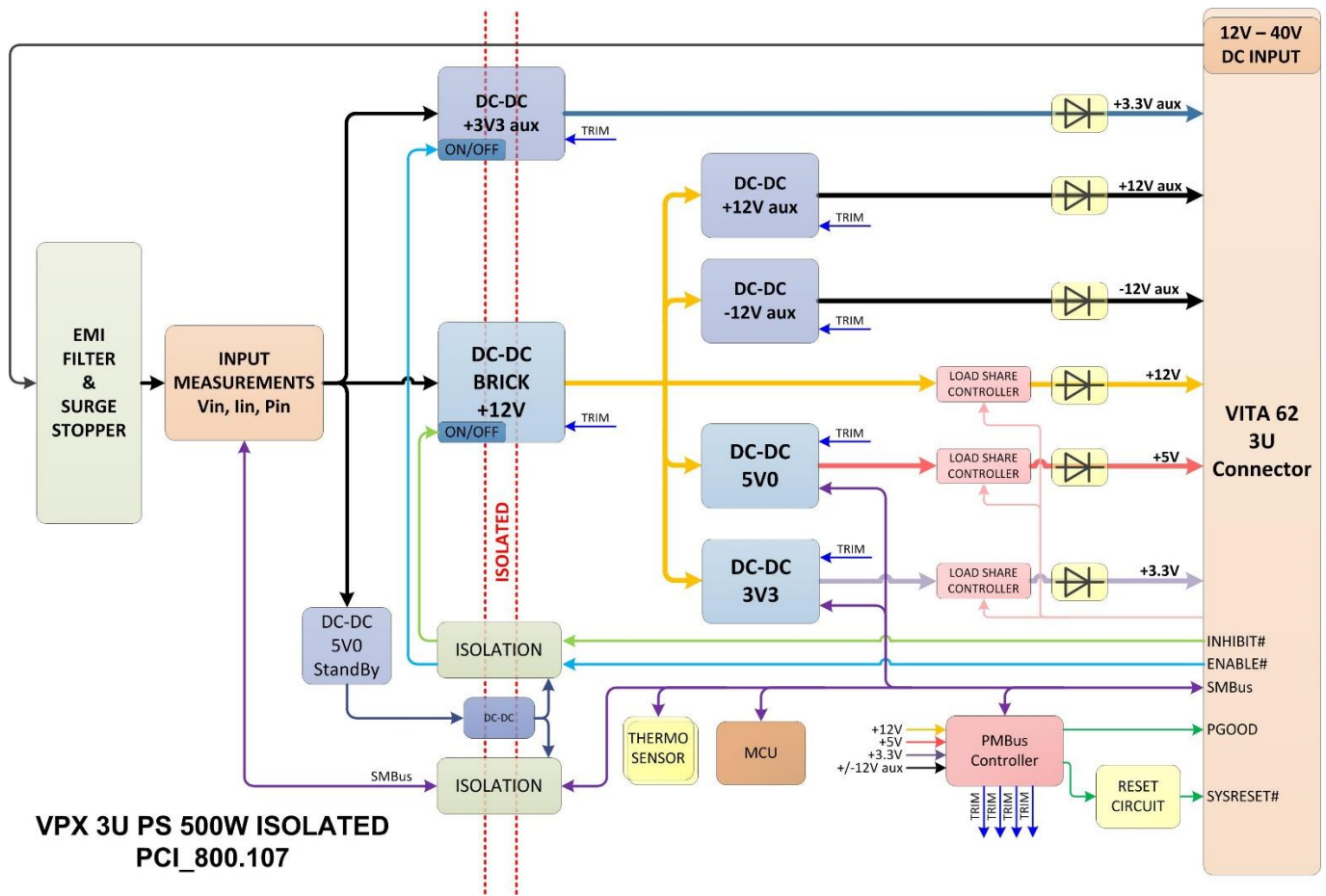
OUTPUT CHARACTERISTICS							
Parameter	+12V	+5V	+3.3V	+3.3V aux	+12V aux	-12V aux	Notes
Output Voltage Set Point, V	12	5	3.3	3.3	12	-12	Vin = 28V
- Drift -40 deg.C to 85degC +/- %	0.01	0.01	0.01	0.01	0.01	0.01	Vin = 28V
Output Voltage Trim Range, V	12	5	3.3	3.3	12	-12	Over Line/load/temp.
	+/- 10%	+/- 10%	+/- 10%	+/- 10%	+/- 10%	+/- 10%	Over Line/load/temp.
Output Voltage Ripple (pk-pk), mV	80	50	40	40	80	80	Full load with .1uF ceramic + 10 uF tantalum capacitor on ALL slots
Operating Current Range, A	0-40	0-40	0-20	0-4	0-1.5	0-1.5	500W Total, combined Output
Over-Voltage Protection, V	13	6	3.6	3.6	13	13	Digital adjustable
Current Limit Inception, A	42	42	22	5	1.7	1.7	Digital adjustable
Maximum Output Capacitance, mF	10	10	10	1	1	1	

MODULE QUALIFICATION	
Designed to meet the following standards, additional filter circuitry in the chassis may be required	
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 Tested at 45.000 feet pressure
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

RELIABILITY CHARACTERISTICS

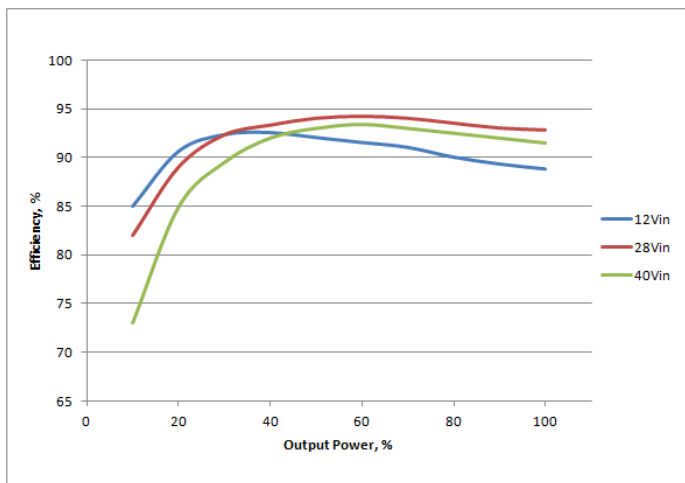
Calculated MTBF per MIL-HDBK-217F (GB) at 70 deg C. 2.500.000 Hrs.
 Calculated MTBF per MIL-HDBK-217F (GM) at 70 deg C. 480.000 Hrs.

Block Diagram:

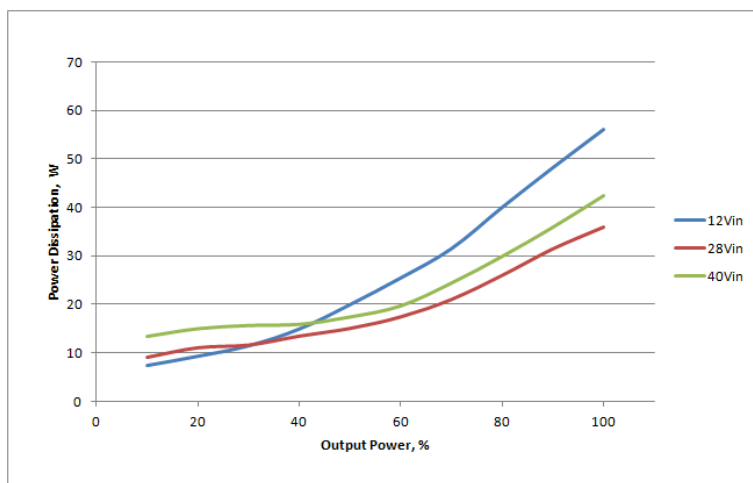


Pinout: As per VITA 62 specification

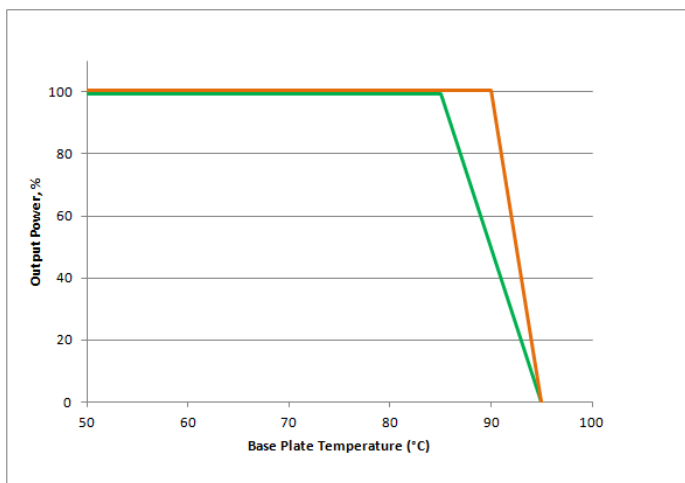
Mechanical Dimensions: As per VITA 62 specification (1" pitch)



Efficiency vs. Output Power for min, nom, max input V at 25°C



Power Dissipation vs. Output Power at module cover 25°C



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

ORDERING INFORMATION:

PCI_800.107_C
PCI_800.107_C_K9

3U VITA 62 28VDC 500W Isolated Rugged Power Supply
3U VITA 62 28VDC 500W Isolated Rugged Power Supply NO guide keying

PCI_800.107_C_H

3U VITA 62 28VDC 500W Isolated Rugged Power Supply high altitude 45,000 feet
No electrolytic capacitors

All versions are conformal coated