

Key Features:

- 12-36VDC Continuous Input Voltage
- 2250V Isolation Between Input /Output
- Active Input EMI Filtering
- Transient forward looking/cut-off technology
- 6 Voltage output Rails
- 500W Maximum Continuous Power
- Optional HoldUp circuitry, 400msec at 400W
- 92% Typical Efficiency
- -40°C to 85°C Rail Operating Temperature
- VITA 62 6U Form Factor
- VITA 46.11 ready
- Patent pending **FourRail** thermal interface
- [SMART.PSU] Technology

VITA 62 6U ISOLATED 500W 28V POWER SUPPLY

This 6U power supply works with **12VDC to 36VDC input** and 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 **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 management
- Collects data from temperature sensors for over temperature protection
- Precision compensation of all output voltages using integrated 5ppm voltage reference



Overview	
P/N	PCI_800.313
Hold Up time	1mSec/400mSec
VITA Compliant	VITA62
Size	6U
Temp. Range	-40 +85 C
Input (AC or DC)	DC
Input Range (AC)	12-36
Active EMI Filtering	YES
Power (W, max.)	500
Efficiency (% , typ.)	93
# of outputs	6

OUTPUTS (Total output not to exceed 500W)	
VS1, VS2, V@A	+12@40A
VS3, V@A	+5@40A
AUX, V@A	+3.3@20A
AUX, V@A	+12@3A
AUX, V@A	-12@3A

FEATURES	
Over-current Protection	YES
Over-voltage Protection	YES
Over-temperature Protection	YES
Current Sharing	VS1, VS2, VS3
Remote Sense	YES
Standard Control	YES, VITA 62
Extended Control	YES, PCI Systems

COMPLIANCE	
Designed to meet the following standards, additional circuitry in the chassis may be required	
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		60	V	Continuous
- Operating	-40		40	V	Continuous- Reverse input Protection
- Operating Transient Protection			100	V	50ms transient, square wave
Isolation Voltage			2250	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 50 ms -- MIL 1275D
Under-Voltage Lockout					
- Turn-On Input Voltage Threshold	9.5	9.8	10	V	

INPUT VOLTAGE SPIKES SUPPRESSION (Vin Centered)	
Designed to meet the following standards, additional circuitry in the chassis may be required	
+/- 450V, 100 us	MIL-STD-1275E
+/- 490V, 10 us	MIL-STD-461C (CS06); DEF-STAN 61-5
+/- 450V, 5 us	MIL-STD-461C (CS06)
+/- 600V, 10 us	RTCA/DO-160E

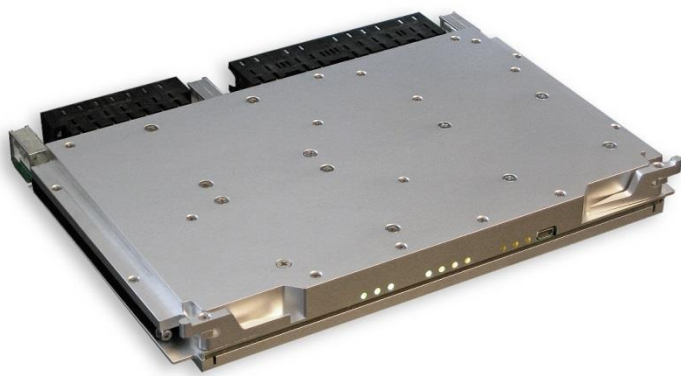
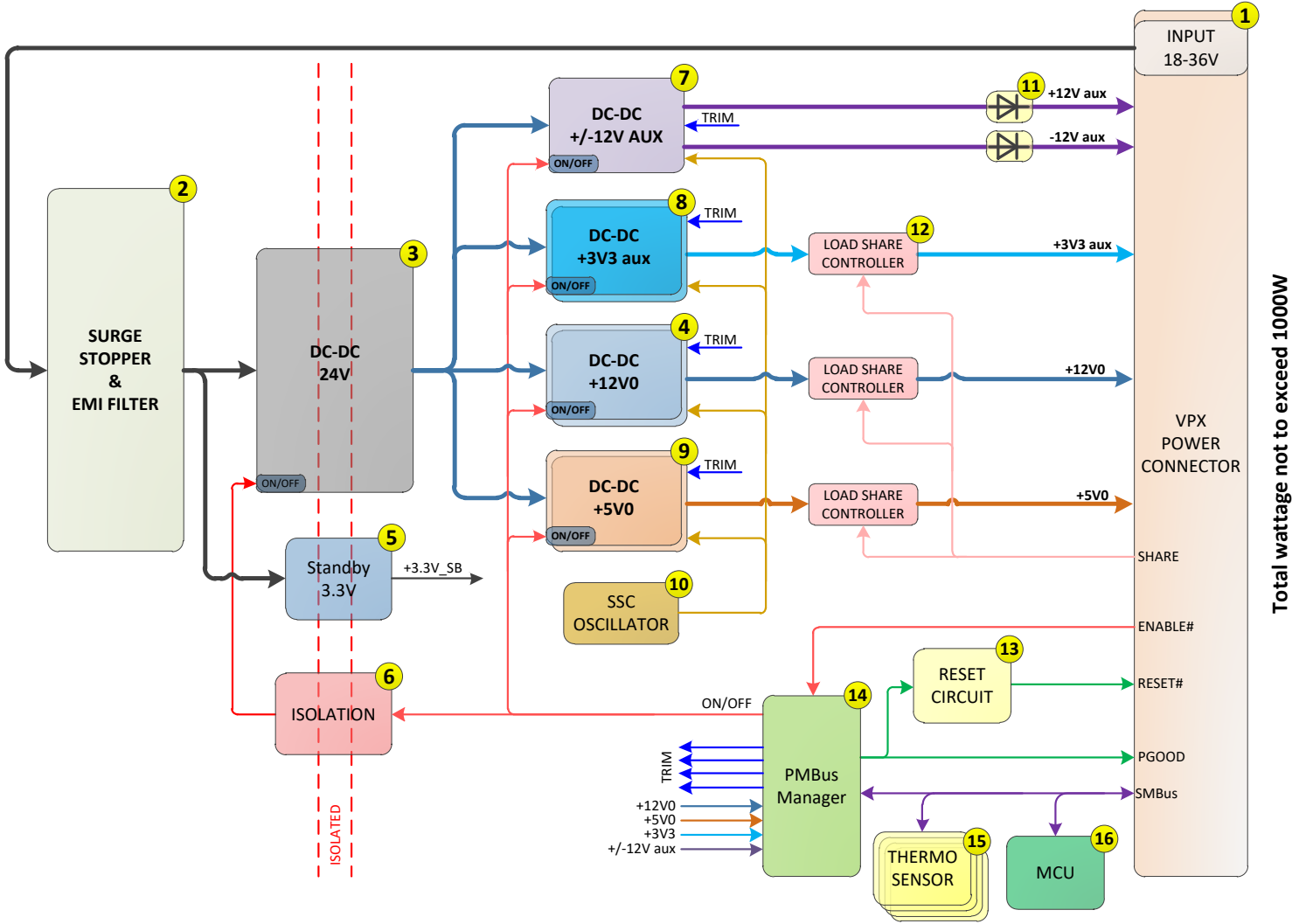
OUTPUT CHARACTERISTICS						
Parameter	+12V	+5V	+3.3V aux	+12V aux	-12V aux	Notes
Output Voltage Set Point, V	12	5	3.3	12	-12	Vin = 28VDC
- Drift -40 deg.C to 85degC +/- %	0.01	0.01	0.01	0.01	0.01	Vin = 28VDC
Output Voltage Trim Range, V	12	5	3.3	12	-12	Over Line/load/temp.
	+/- 10%	+/- 10%	+/- 10%	+/- 10%	+/- 10%	Over Line/load/temp.
Output Voltage Ripple (pk-pk), mV	80	50	40	80	80	Full load with 1 uF + 10 uF tantalum capacitor at each rail at each slot
Operating Current Range, A	0-40	0-40	0-20	0-3	0-3	500W Total, combined Output
Over-Voltage Protection, V	13.6	6	3.6	13.6	-13.6	
Current Limit Inception, A	41	42	22	3	3	
Maximum Output Capacitance, mF	10	10	10	1	1	

MODULE QUALIFICATION	
Designed to meet the following standards, additional 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
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. 4.1 280.000 Hrs.
 Calculated MTBF per MIL-HDBK-217F (GM) at 70 deg C. 0.92 250.000 Hrs.

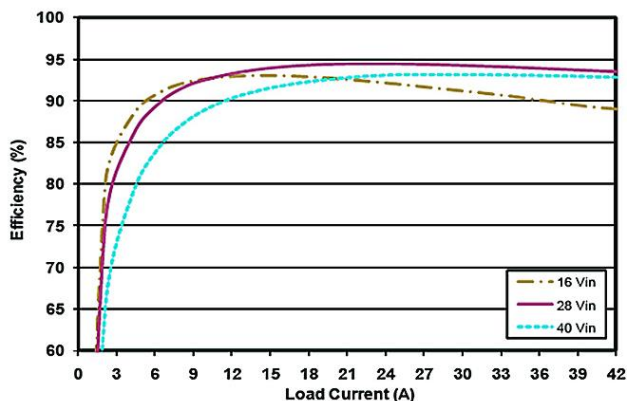
Block Diagram:



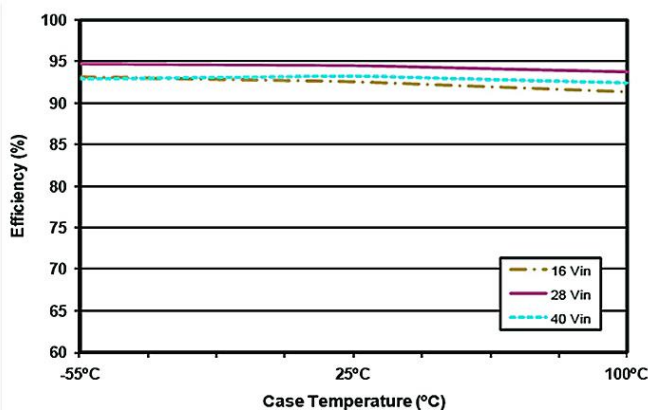
Pin-out: As per VITA 62 specification

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

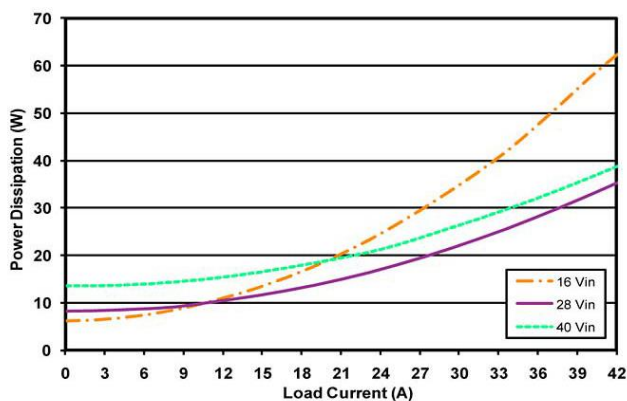
Efficiency for internal DC-DC stages:



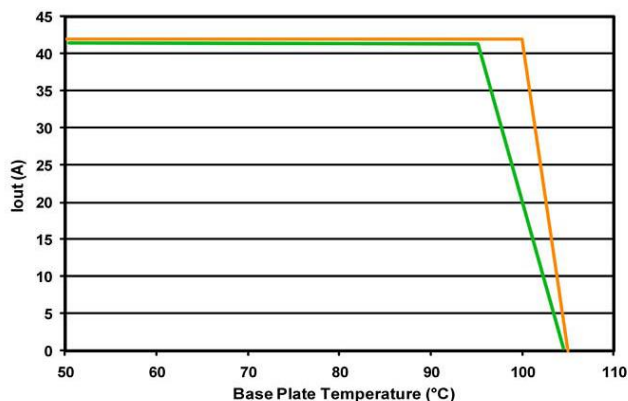
Efficiency at nominal output voltage vs. load current for min, nom, max input V at 25°C



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 7°C)



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

ORDERING INFORMATION:

PCI_800.313_C
PCI_800.313_C_HOLD

6U VITA 62 1000W18-36VDC Isolated Rugged Power Supply
Version with additional 400mSec holdup circuitry

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www.pcisystems.com

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