

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
- 1000W Maximum Continuous Power
- 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 1000W 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 **1000 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_800.314
Hold Up time	1ms
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.)	1100
Efficiency (%), typ.)	93
# of outputs	6

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

OUTPUTS (Total output not to exceed 1100W)	
VS1, VS2, V@A	+12@80A
VS3, V@A	+5@40A
AUX, V@A	+3.3@20A
AUX, V@A	+12@3A
AUX, V@A	-12@3A

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		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)						
+/- 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					

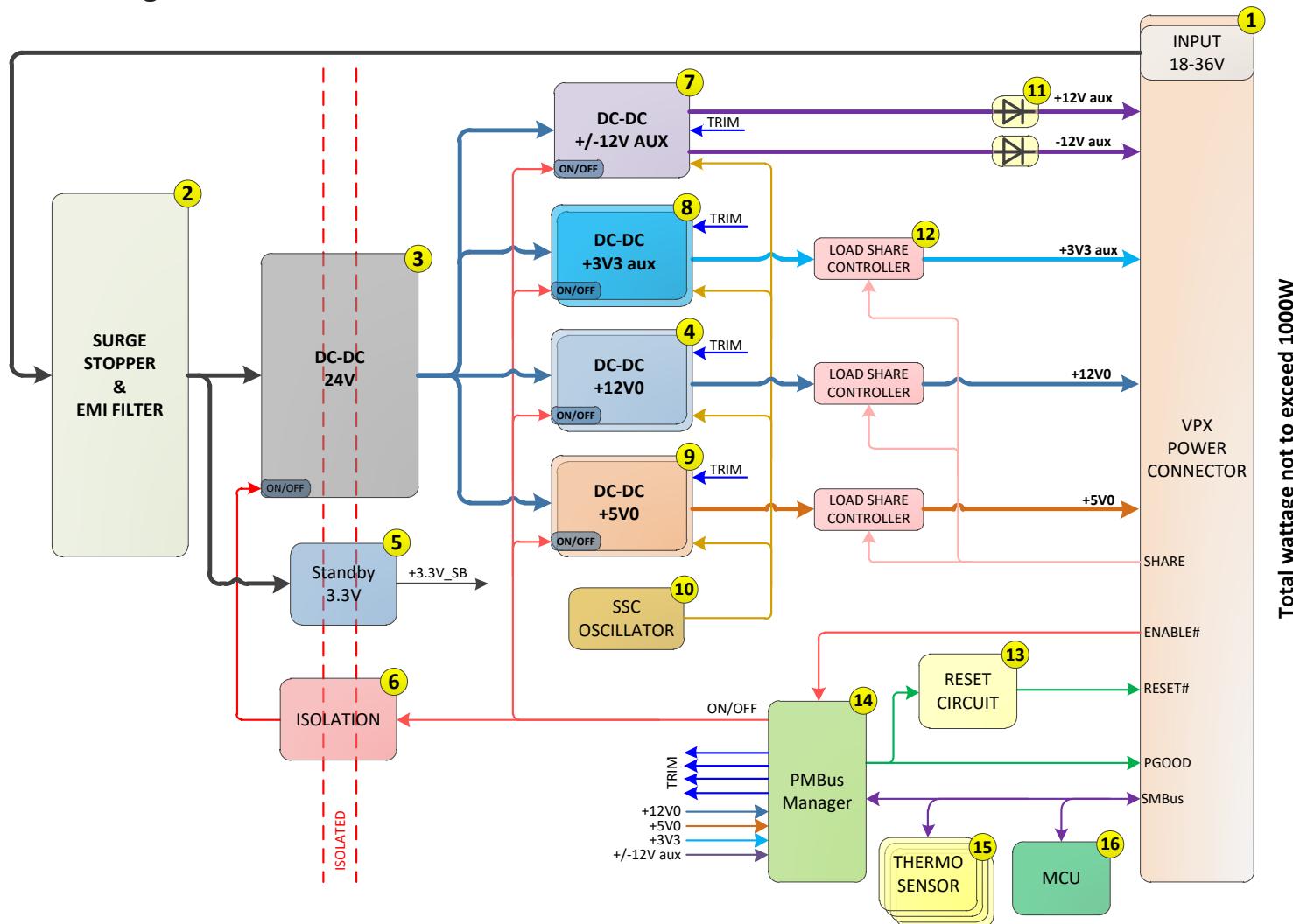
OUTPUT CHARACTERISTICS							
Parameter	+12V		+5V	+3.3V aux	+12V aux	-12V aux	Notes
Output Voltage Set Point, V	12		5	3.3	12	-12	Vin = 28VDC
- Drift -40 deg.C to 85degC +/- %	0.01		0.01	0.01	0.01	0.01	Vin = 28VDC
Output Voltage Trim Range, V	12		5	3.3	12	-12	Over Line/load/temp.
	+/- 10%		+/- 10%	+/- 10%	+/- 10%	+/- 10%	Over Line/load/temp.
Output Voltage Ripple (pk-pk), mV	120		50	40	80	80	Full load with 1 uF + 10 uF tantalum capacitor
Operating Current Range, A	0-80		0-40	0-20	0-3	0-3	1000W Total, combined Output
Over-Voltage Protection, V	13.6		6	3.6	13.6	-13.6	
Current Limit Inception, A	82		42	22	3	3	
Maximum Output Capacitance, mF	10		10	10	1	1	

MODULE designed to	
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. 0.92 280.000 Hrs.*

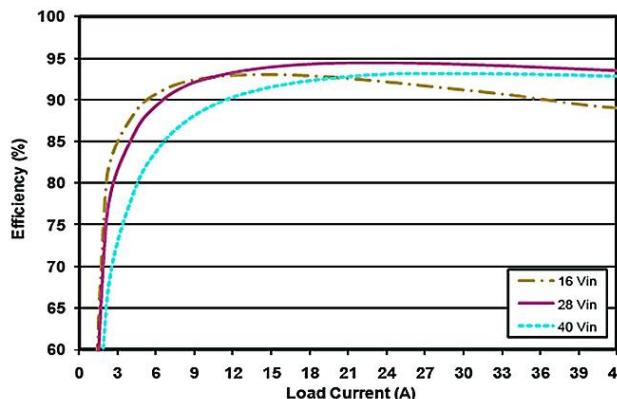
Block Diagram:



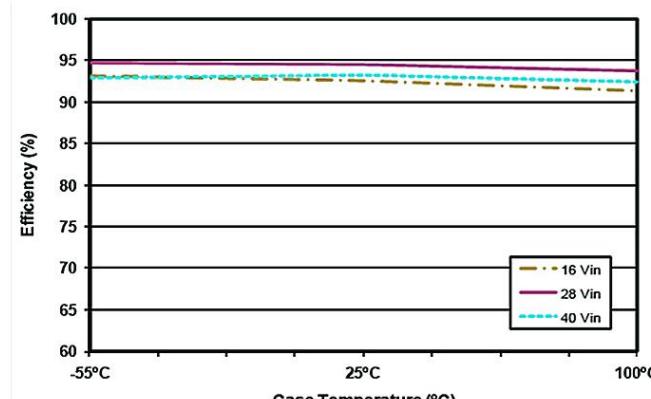
Pin-out: As per VITA 62 specification

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

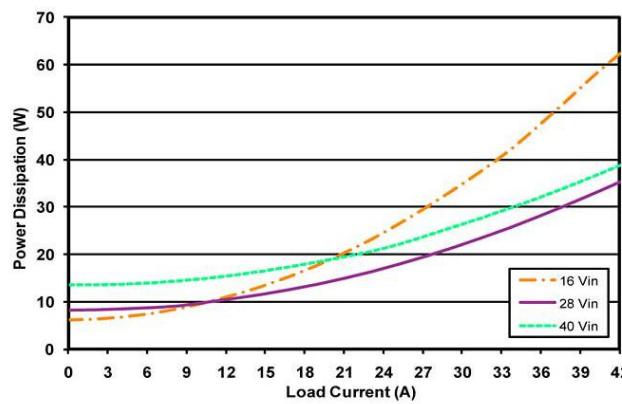
Efficiency for internal DC-DC stages:



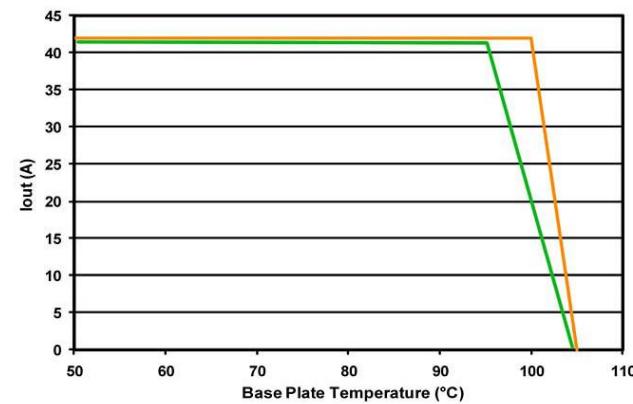
Efficiency at nominal output voltage vs. load current for min, nom, max input V at 25°C



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_800.314

6U VITA 62 1000W18-36VDCIsolated Rugged Power Supply

PCI_800.314_C

Version with Conformal Coating

Release_January_8_2017