



FEATURES

- 3Ux8HP package
- 300W power at -5 to 55°C
- PICMG 2.11 Compliant
- Widerange 36-72Vdc Input
- Active power factor correction to EN61000-3-2
- Class B conducted EMI performance
- 47-pin I/O Connector
- 81% efficiency
- Full power with just 250lfm airflow
- Hot-swap capable

DESCRIPTION

The cPCI-D-3U-300C is a high-reliability, 300W, continuous power, 3Ux8HP CompactPCI™ power supply developed for chassis' with airflows as low as 250lfm. The use of 2 converters operating in parallel for the 3.3V and the 5V outputs enables maximum current draw on the two outputs simultaneously. Compliant with the PICMG 2.11 standard.

With a widerange input of 36-72Vdc, safety agency approvals to UL60950 and EN60950, EMI compliance to Class B FCC and EN55022 standards, the cPCI-D-3U-300C was designed with globally-deployed systems in mind. Additional features include remote sense compensation, unit enable control (EN#), output inhibit control (INH#), output fault signal (FAL#), and thermal warning signal (DEG#). LEDs are provided for visual indication of input power presence and output fault condition.

SELECTION GUIDE

Model Number	Power	Output Current ¹				 For full details go to www.murata-ps.com/rohs	
		5V	3.3V	12V	-12V		
CPCI-D-3U-300C	300W	30A	40A	5A	0.5A	Yes	Yes

INPUT CHARACTERISTICS

Parameter	Conditions	Min	Typ	Max	Units
Input Operating Voltage		36		72	Vdc
Inrush Current	48Vdc			20	A _{rms}
Input Reverse Polarity	A shunt diode across the input clears the input fuse in the event that the input polarity is reversed.				

OUTPUT CHARACTERISTICS

Output	Nominal Voltage	Output Current		Load Regulation ¹	
		Min	Max		
V1 ²	+5.0Vdc	0A	30A	±1%	
V2 ²	+3.3Vdc	0A	40A	±1%	
V3 ²	+12Vdc	0A	5A	±4%	
V4 ²	-12Vdc	0A	0.5A	±4%	
Parameter	Conditions	Min	Typ	Max	Units
Line Regulation	All outputs		0.5		%
PARD (V1) ⁵	20MHz bandwidth			75	mV _{p-p}
PARD (V2) ⁵	20MHz bandwidth			60	mV _{p-p}
PARD (V3 & V4) ⁵	20MHz bandwidth			120	mV _{p-p}
Hold-up Time	72Vdc, full load		14		msec
Turn-on Delay				1	sec
Rise Time	10% to 90% of full value		30		msec
Transient Response	ΔV, 50% load step			±5	%V _{nom}
	Settling time			500	μsec
Over-Voltage and Short Circuit Protection ⁶	V1, V2, & V3: Latching	110		130	%V _{nom}
Remote Sense Compensation ³	V1, V2		200		mV
Current Share Tolerance ⁴	V1, V2			±10	%
Isolation	Pri-Sec	3			kVac
	Pri-Chassis	1.5			kVac
	Sec-Chassis	100			Vdc

- Notes:
1. Total power limited to 300W.
 2. Maximum combined power from V1 & V3 not to exceed 185W. Maximum combined power for V2 & V4 not to exceed 140W.
 3. Maximum voltage compensation for cable losses.
 4. Tolerance applicable up to 6 parallel units. Single wire current share on V1 & V2 for 50% to 100% load.
 5. Measured across 1μF ceramic capacitor and 120μF electrolytic capacitor.
 6. Automatic recovery upon removal of overload condition.

GENERAL CHARACTERISTICS

Parameter	Conditions	Min	Typ	Max	Units
Efficiency	Full load, typical at 48Vdc		81		%
Switching Frequency	Main Converter		90		kHz
MTBF	Calculated per Belcore standard B332 Gb 30°C	300			khrs
Weight	Unpackaged		730		g

PROTECTION

Parameter	Conditions/Response	Inception			Units
		Min	Typ	Max	
Inrush Current Limit	230VAC			50	A _{rms}
Input Protection	Internal line fuse			6.3	A _{rms}
Over-voltage Protection	V1, V2, & V3 with latched shutdown	110		130	%V _{nom}
Parameter	Conditions/Response				
Output Overload Protection	Outputs are individually protected against overloads and indefinite short circuit with automatic recovery upon removal of the fault condition.				
Hot-Swap Capability	Protected by internal ORing diodes				
Output Fault Isolation	Output isolation devices are present in all outputs to isolate faults within a failed power supply.				
Thermal Shutdown	Automatic recovery upon restoration to operational temperatures				

STATUS & CONTROL SIGNALS & INDICATORS

Name	Description
Enable (EN#)	Contact closure to external ground to start unit. On shortest pin (last make, first break).
Output Inhibit (INH#)	TTL –compatible signal inhibited with GND or TTL “0”.
Output Fault (FAL#)	TTL compatible signal, open collector active low signal. Indicates one or more outputs below 90% of specified rate.
Remote Sense (RS+, RS-)	Available on V1 and V2. Maximum voltage compensation for cable losses 200mV
Thermal Warning (DEG#)	Open collector active low 10°C before power supply shut down.
Front Panel Fault Indicator LED	Red LED - indicates one or more outputs below 90% of specified rate.
Front Panel Power	Green LED - indicates when mains input voltage present

ENVIRONMENTAL CHARACTERISTICS

Parameter	Conditions	Min	Typ	Max	Units
Ambient Operating Temperature	Full load with 250LFM forced air and derating linearly above 55°C to 70°C, by 2.5% per °C	-5		55	°C
Ambient Storage Temperature		-40		85	°C
Operating Humidity	Non-condensing			95	%
Storage Humidity	Non-condensing			95	%
Altitude	Operating			6000	ft
	Storage			40000	ft

ELECTROMAGNETIC COMPATIBILITY (EMC)

Characteristic	Compliance
Input Current Harmonics	EN61000-3-2
Conducted & Radiated Emissions	EN55022/CISPR22 Class B, with external line filter
Electrostatic Discharge (ESD)	EN61000-4-2, Level 4, 8kV air
Radiated Immunity	EN61000-4-3, Level 3, 10V/m
Conducted Immunity	EN61000-4-4, Level 3, ± 2 kV
Line Voltage Surge	EN61000-4-5, Level 3, line-to-line 1kV line to chassis 2kV
Conducted Disturbance	EN61000-4-6, Level 2, 3Vrms
Power Frequency Magnetic Field	EN61000-4-8, 3A/m
Line Voltage Interruptions	EN61000-4-11

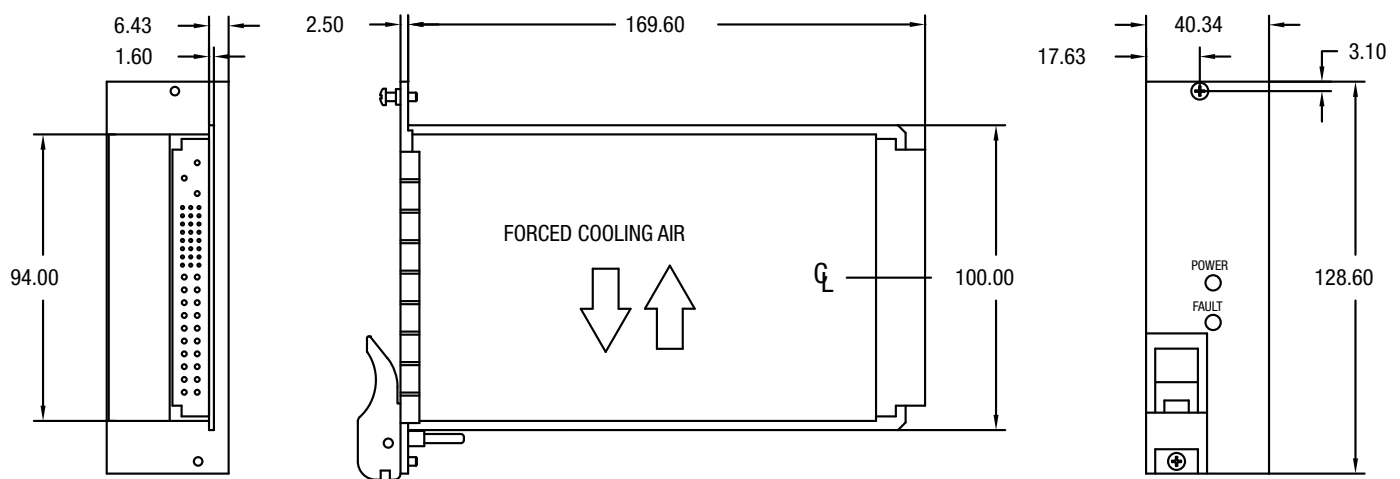
CERTIFICATIONS

Agency/Characteristic PENDING	Standard
UL	UL60950-1
CSA	CSA C22.2-234, Level 3 (per cUL)
CE	EN-60950, Class 1, SELV CE-Mark
RoHS	EN Directive 2002/95/EC; self-certified

SAFETY AGENCY RATINGS

Input Voltage	36-72Vdc
Input Current	12A

MECHANICAL DIMENSIONS



Overall size: 169.6mm D x 128.6mm H x 40.3mm W (6.68" D x 5.06" H x 1.59" W)

CONNECTOR			
Pin	Pin Type	Signal Name	
1-4	Normal	V1	V1 Output
5-12	Normal	RTN	V1 and V2 Return
13-18	Normal	V2	V2 Output
19	Normal	RTN	V3 Return
20	Normal	V3	V3 Output
21	Normal	V4	V4 Output
22	Normal	RTN	Signal Return
23	Normal	RTN	Signal Return
24	Normal	RTN	V4 Return
25	Normal	GA-0	Geographic ADD-0 (option)
26	Normal	Reverse	Reverse
27	Short	EN#	Enable
28	Normal	GA-1	Geographic ADD-1 (option)
29	Normal	NC	Not Connected
30	Normal	V1 Sense	V1 Remote Sense
31	Normal	GA-2	Geographic ADD-2 (option)
32	Normal	NC	Not Connected
33	Normal	V2 Sense	V2 Remote Sense
34	Normal	S RTN	Sense Return
35	Normal	V1 Share	V1 Current Share
36	Normal	NC	Not Connected
37	Normal	IPMB_SCL	System Manager Bus (option)
38	Normal	DEG#	Degrade Signal
39	Normal	INH#	Open – ON Low - OFF
40	Normal	IPMB_SDA	System Manager Bus (option)
41	Normal	V2 Share	V2 Current Share
42	Normal	FAL#	Fail Signal
43	Normal	IPMB_PWR	System Manager (option) – Power
44	Normal	NC	Not Connected
45	Long	Chassis GND	Chassis GND
46	Long	DC Positive	DC Input
47	Long	DC Negative	DC Input

RoHS COMPLIANCE INFORMATION



This series is compatible with RoHS soldering systems with a peak wave solder temperature of 300°C for 10 seconds. The pin termination finish on this product series is Tin Plate, Hot Dipped over Matte Tin with Nickel Preplate. The series is backward compatible with Sn/Pb soldering systems.

For further information, please visit www.murata-ps.com/rohs

OBsolete PRODUCT



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