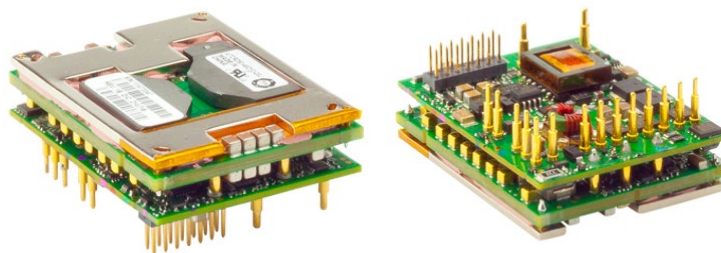


ATCR250 Series

250 Watt Half-Brick Isolated DCDC Converter

Data Sheet

Total Power: 250 Watts
Input Voltage: -48 VDC
Output: 12 V Intermediate Bus
 3.3 V Management Bus



SPECIAL FEATURES

- Optimized footprint for high density ATCA applications
- Accepts inputs from -48 V A and B feeds
- CISPR Class A EMI
- Adjustable Hold Up Voltage from 50 - 80 VDC
- I²C serial bus interface for monitoring and reporting
- Programmable alarm thresholds via I²C bus
- Hardware alarms via opto-isolators for loss of A or B feeds
- Comprehensive protection circuitry: current, voltage and temperature
- EU directive 2002/95/EC compliant for RoHS

SAFETY

- UL/cUL 60950-1
- TÜV EN60950-1

Electrical Specifications

Input		
Input range	-36 V to -72 VDC	
Transient	-100 VDC (< 1 ms)	
External input capacitance	82 µF max	
Inrush current	11 A typical	
Inrush duration	< 2 ms	
Undervoltage lockout	-36 < V _{in}	
Overvoltage lockout	-77.5 ≤ V _{in} < 72 VDC	
Efficiency	89% @ 250 W	
Output		
	12 V Intermediate Bus	3.3 V Management Bus
Nominal setpoint	12.2 V	3.32 V
Total regulation band ¹	11.4 - 12.6 V	3.20 - 3.40 V
Output current	0 - 20.83 A	0 - 4.5 A
Current limit	118% I _o , max (typ)	130% I _o , max (typ)
Short circuit	Shutdown/Autorecovery	
Ripple and noise ²	50 mV pk-pk	40 mV pk-pk
Overvoltage	V _o > 13.4 VDC	V _o > 3.6 VDC (typ)
Undervoltage	NA	V _o < 3.0 VDC (typ)
External output capacitance	1000 µF min	100 µF min
Control/Monitoring		
ON/OFF+ and ON/OFF- I ² C serial bus interface	Remote activation of module. See ATCR250 Application Note. For digital monitoring (V _{out} , V _{in} , Temp, I _{in}) referenced to secondary side.	
Isolation Characteristic		
Input to Output isolation voltage	2250 Vdc	
Input to Output insulation	Basic	

Environmental Specifications

Operating ambient temperature range	-25 °C to +85 °C ambient
Storage temperature	-40 °C to +125 °C
MTBF	> 1 MHrs @ 25 °C 100% load (target)

Part Number System with Options

Product Family ATCR ATCA Product Series	Product Family 250 250 Watts	Product Family 48 -36 to 72 VDC	Product Family D12-03 Dual output: 12.0 V @ 20.83 A Intermediate Bus 3.3 V @ 4.5 A Management Bus	Product Family J RoHS 6/6
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Pin Assignments			
Pin #	Pin Name	Function	Note
1	-48VA	Power input from A bus	Connects to ATCAZone 1 connector pin 33 via external 12 A fuse
2	-48VB	Power input from B bus	Connects to ATCAZone 1 connector pin 34 via external 12 A fuse
3	Reserved	For future use	
4	Hold Up Trim	Hold up voltage trim	Connects a resistor between this pin and pin 11 to trim hold up voltage
5	RTN A	Power return from A bus	Connects to ATCAZone 1 connector pin 28 via external 15 A fuse
6	RTN B	Power return from B bus	Connects to ATCAZone 1 connector pin 29 via external 15 A fuse
7	ENA	When connected to RTN A, turns ON isolated open collector A enabled device (See Note 3)	Connects to ATCAZone 1 connector pin 32 via external 1 A fuse. Used to signal to management system correct board insertion and presence of A bus
8	ENB	When connected to RTN B, turns ON isolated open collector B enabled device (See Note 3)	Connects to ATCAZone 1 connector pin 27 via external 1 A fuse. Used to signal to management system correct board insertion and presence of B bus
9	C_CL-	Connection to module of auxiliary capacitor hold up array -ve	Utilizes greater capacitance in a given can size of lower voltage capacitors. Clamped to -50V wrt HU+OUT when pin 4 is open.
10	HU-	Connection to module of hold up capacitor array -ve	
11	HU+OUT	Connection from on board filter and management circuits to hold up capacitor array +ve	May also connect to input of boost module to reduce hold up storage area
12	HU+IN	Connection to main power converter from hold up capacitor array +ve	May also connect to output of boost module to reduce hold up storage area
13	ON/OFF-	Current from pin to turn main output ON	Fully floating remote ON/OFF signal, may be used with management system or ATCA ENABLE_A/B via R-D network
14	ON/OFF+	Current into pin to turn main output ON	Fully floating remote ON/OFF signal, may be used with management system or ATCA ENABLE_A/B via R-D network
15	B_OK#	Open collector signal, monitors status of B feed	Low when OK
16	A_OK#	Open collector signal, monitors status of A feed	Low when OK
17	A2		I ² C lines, address strapping
18	INTRPT	Interrupt alarm	I ² C Register out of limits, LM80 pin INT# direct connection
19	A1		I ² C lines, address strapping
20	SCL	Clock	I ² C lines, clock line input
21	A0		I ² C lines, address strapping
22	SDA	Data	I ² C lines, serial data
23, 24	3V3 Return	Management power return and I ² C	Also return for A_OK# and B_OK# signals Externally connected to ATCA Zone 1 connector pin 26
25, 26	3V3 Out	3V3, 14.85 W management power	
27, 28	3V3 Trim	Trim pin for management power	
29	12V RTN	12 V return	Externally connected to ATCA Zone 1 connector pin 26
30	12V OUT	12 V power	

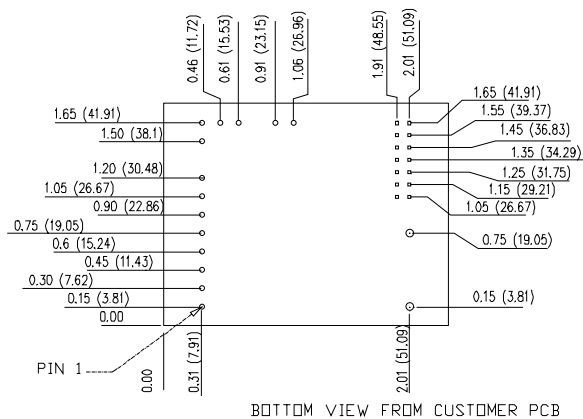
Notes:

1. Regulation band over line, load and temperature.
2. Measured at 20 MHz with external 10 mF Tantalum in parallel with 1 mF ceramic, 25V rated low ESR type capacitors across each output.
3. All specifications are typical at nominal line, TA = 25 °C unless otherwise indicated.
4. All specifications are subject to change without notice.
5. Technical Reference Notes and Application Notes should be consulted for complete product details
6. Warranty 2 years.

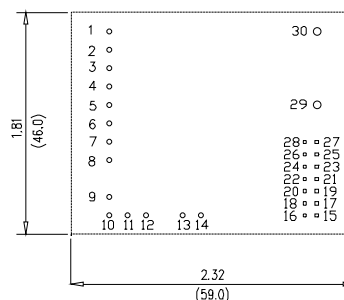
Mechanical Drawings

RECOMMENDED HOLES SIZE & PAD SIZE

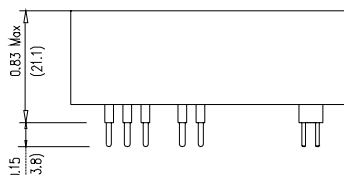
	holes size	pad size
Pins 1 to 14	0.051[1.3]	0.098[2.5]
Pins 15 to 28	0.043[1.1]	0.087[2.2]
Pins 29 and 30	0.075[1.9]	0.118[3.0]



TOP VIEW



SIDE VIEW



Dimensions in Inches (mm)
 Tolerances (unless otherwise specified)
 x.xx ±0.02 (x.x ±0.5)
 x.xxx ±0.010 (x.xxx ±0.25)

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