

## ATCR250-48D12-03J

**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 and B Feeds
- CISPR Class A EMI
- Adjustable Hold Up Voltage from 50 to 80 VDC
- I<sup>2</sup>C serial bus interface for monitoring and reporting
- Programmable alarm thresholds via I<sup>2</sup>C 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
- TUV EN60950-1

## Electrical Specifications

### Input

Input range:	-36 V to -72 VDC
Transient:	-100 VDC (< 1 ms)
External Input Capacitance:	82uF max
Inrush Current:	11 A typ
Inrush Duration:	< 2ms
Undervoltage Lockout:	-36 < V <sub>IN</sub>
Overvoltage Lockout:	-77.5 ≤ V <sub>IN</sub> < 72 VDC
Efficiency:	89% @ 250W

### Output

	12 V Intermediate Bus	3.3 V Management Bus
Nominal Setpoint:	12.2 V	3.32V
Total Regulation Band <sup>1</sup> :	11.4 - 12.6 V	3.20 - 3.40 V
Output Current:	0 - 20.83 A	0 - 4.5 A
Current Limit:	118% lo, max (typ)	130% lo, max (typ)
Short Circuit:	Shutdown/Autorecovery	
Ripple and Noise <sup>2</sup> :	50 mVp-p	40 mVp-p
Overvoltage:	V <sub>o</sub> > 13.4 VDC	V <sub>o</sub> > 3.6 VDC (typ)
Undervoltage:	NA	V <sub>o</sub> < 3.0 VDC (typ)
External Output Capacitance:	1000 uF min	100 uF min

### Control/Monitoring

ON/OFF+ and ON/OFF-:	Remote activation of Module. See ATCR250 Application Note
I <sup>2</sup> C Serial Bus Interface:	For digital monitoring (Vout, Vin, Temp, lin) 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	Rated O/P Power	Input Voltage	Output Voltage	RoHS Compliance
ATCR	250	48	D12-03	J
ATCA Product Series	250 Watts	-36 to -72 VDC	Dual Output: 12.0V @ 20.83A - Intermediate Bus 3.3V @ 4.5A - Management Bus	J = RoHS 6/6

Pin Assignments		
Pin Number/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_-L-	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 <sup>2</sup> C lines, address strapping
18. INTRPT	Interrupt Alarm	I <sup>2</sup> C Register out of limits, LM80 pin INT#' direct connection
19. A1		I <sup>2</sup> C lines, address strapping
20. SCL	Clock	I <sup>2</sup> C lines, clock line input
21. A0		I <sup>2</sup> C lines, address strapping
22. SDA	Data	I <sup>2</sup> C lines, serial data
23., 24. 3V3 RTN	Management power return and I <sup>2</sup> 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	12V return	Externally connected to ATCA Zone 1 connector pin 26
30. 12V OUT	12V power	

### Notes:

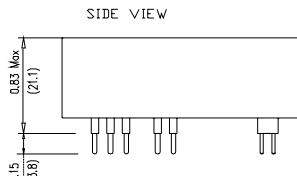
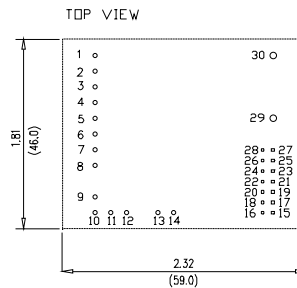
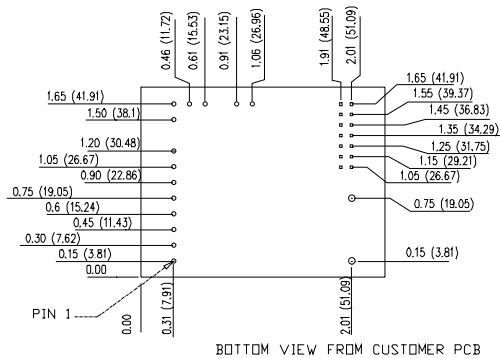
1. Regulation band over line, load and temperature.
2. Measured at 20 MHz with external 10 mF Tantalum in parallel with 1 mF ceramic, 25V rated low ESR type capacitors across each output.
3. All specifications are typical at nominal line, T<sub>A</sub> = 25 °C unless otherwise indicated.
4. All specifications 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 Drawing

### ATCR250-48D12-03J

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]



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

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