



### FEATURES

- 200W compact high density
- Active load current share
- Universal AC input with Power Factor Correction
- Ruggedized U-channel construction
- RoHS compliant
- Includes ORing diode for N+1 parallel operation
- International regulatory approvals

### DESCRIPTION

The CF200-A12C switching power supply utilizes advanced component and circuit technologies to deliver one of the industry's smallest 200 Watt switchers. Built to meet 1U height considerations, the U-Frame package measures only 3.30 x 5.00 x 1.50". The CF200-A12C offers universal AC input (85-265VAC) with active power factor correction (PFC) and compliance to worldwide safety and EMC standards.

### SELECTION GUIDE

Model Number	Power Output	Main Output	Auxiliary Output
CF200-A12C	200W	12V	5V

### INPUT CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Max.	Units
Input Voltage Operating Range		85		264	Vac
Input Frequency		47		63	Hz
Turn-on Input Voltage	Ramp up		75		Vac
Turn-off Input Voltage	Ramp down		65		Vac
Maximum Rated Input Current	100Vac			2.8	Arms
Inrush Current	Cold start at 25°C, 115Vac			25	Apk
	Cold start at 25°C, 230Vac			50	Apk
Power Factor	230Vac, full load		96		%
	115Vac, full load		98		%

### OUTPUT VOLTAGE CHARACTERISTICS

Output Voltage	Parameter	Conditions	Min.	Typ.	Max.	Units
12V	Voltage Set Point Accuracy	±1% tolerance		12.2		Vdc
	Line and Load Regulation				±1	%
	Ripple Voltage & Noise <sup>1</sup>	20MHz Bandwidth			150	mV p-p
	Output Current		0		16.6	A
	Peak Current			17		A
5Vaux	Voltage Set Point Accuracy			5		Vdc
	Line and Load Regulation			±2		%
	Output Current		0		5	mA
	Ripple Voltage & Noise <sup>1</sup>	20MHz Bandwidth			100	mV p-p

### OUTPUT CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Max.	Units
Remote Sense	Compensates for voltage drops of up to 0.5V between the power supply to the load. Outputs are internally sensed at output connector if remote sense lines are opened.				
Efficiency	230Vac, full load		86		%
	115Vac, full load		82		%
Start-up Delay	Output voltage at 90%			2.0	s
Rise Time				20	ms
Transient Load Response	For load change of 25% to 75%, at slew rate of 1A/μs, recovery time less than 2ms			±5	%
Current Sharing Accuracy	Single wire current share in a N+1 parallel redundant configuration with OR-ing diodes included in the PSU			±10	%
Hot Swap	Available				
Hold-up Time	110Vac, full load		16		ms
Overshoot and Undershoot	Voltage change at turn-on and turn-off			1	%

<sup>1</sup> Ripple and noise are measured with 10 μF, in parallel with 0.1 μF ceramic capacitors.



### GENERAL CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Max.	Units
Storage Temperature Range	Non-condensing	-25		85	°C
Operating Temperature Range	Derating linearly to 70°C at -2.5% per 1°C	-5		50	
Temperature Coefficient	±0.02%/°C	0		70	
Cooling	100W free convection cooling (base plate cooling). 200W continuous forced air cooling, 15CFM min.				
Operating Humidity	Non-condensing	5		95	%
Storage Humidity	Non-condensing	5		90	
Altitude	Operating 10,000 ft. Non- operating 40,000 ft.				
Vibration	Three orthoganol axes at 1octave/min, 5 min dwell at four major resonances at 0.75G peak, 5Hz to 500Hz				
MTBF	Calculated per Bellcore 332, issue 6 specification at Ta=30°C (max junction temperature for silicon 110°C, capacitors 105°C)	300			Khrs
Safety Approvals	UL 60950, CSA C22.2-234, Level 3, EN-60950-1, CE-Mark				
Input Fuse	Power Supply has internal line fuse: IEC type 4A 250Vac normal BLO				
Switching Frequency		85		90	kHz
Weight	510g				

### PROTECTION CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Max.	Units
Over Temperature	Internal thermostat protects the power supply against excessive temperature. Automatic recovery.				
Over Voltage	Outputs shut down at 125% of nominal; AC input must be recycled to restore operation.				
Over Current	12V output: 110 to 130% of I <sub>max</sub> , hiccup mode current limit; automatic recovery. Long-term fail condition shall not cause damage to PSU.				

### ISOLATION CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Max.	Units
Insulation Safety Rating / Test Voltage	Input to Output - Reinforced	3000			Vrms
	Input to Chassis - Basic	1500			Vrms
Isolation	Output to Chassis	100			Vdc
Material Flammability	UL 94V-0				
Grounding	Output RTN's not connected to chassis gnd. 12V RTN and 5V RTN shorted.				

### CONTROL SIGNALS

Status	Description
Power Good (PG) indication	This signal is used to detect the presence of output voltage. This signal goes high when input power is applied and output voltage is more than 85% of nominal 12.0 VDC output. Signal type: TTL-compatible, with 2.43K pull-up resistor to +5V.
Enable	Active low input to enable +12VDC output of power supply. For normal operation, short to - Sense.
+Sense	Positive side of Remote Sense input.
-Sense	Negative side of Remote Sense input.
5V AUX	+5V standby.
Current Share	Single-wire current-share connection.
LED Drive	10mA min. When PG is high, Pin 1 of J2 shall go high to illuminate external GREEN LED. When PG is low, Pin 3 of J2 shall go high to illuminate external YELLOW LED.

### EMISSIONS AND IMMUNITY

Characteristic	Description	Criteria
Harmonics	IEC/EN 61000-3-2	
Voltage Fluctuation and Flicker	IEC/EN 61000-3-3	
Emission Conducted	FCC / EN55022 (CISPR 22)	CLASS B, 6 dB Margin – with an external line filter Type 03SS-P-Q By High Lan or equivalent
ESD	IEC/EN 61000-4-2	4kV contact discharge, Performance Criteria B 8kV operational air discharge, Performance Criteria B
Electromagnetic Field	IEC/EN 61000-4-3	
Electrical Fast Transients/Burst	IEC/EN 61000-4-4	1kV for AC power port, 0.5kV for DC power I/O and signals port, Performance Criteria B
Surge	IEC/EN 61000-4-5	1kV differential mode and 2kV common mode
RF Conducted Immunity	IEC/EN 61000-4-6	3 Vac, 80% AM, 0.08-1kHz, Performance Criteria A
Magnetic Immunity	IEC/EN 61000-4-8	3 A/m at 50Hz, Performance Criteria A
Voltage dips, interruptions	IEC/EN 61000-4-11	20% reduction for 10ms - Criteria B, 60% for 100ms - Criteria C, 90% reduction for 5000ms - Criteria C

### OUTPUT CONNECTOR AND SIGNAL SPECIFICATION

PIN	J1 : Molex 26-48-1055
1	Chassis
3	Neutral
5	Phase

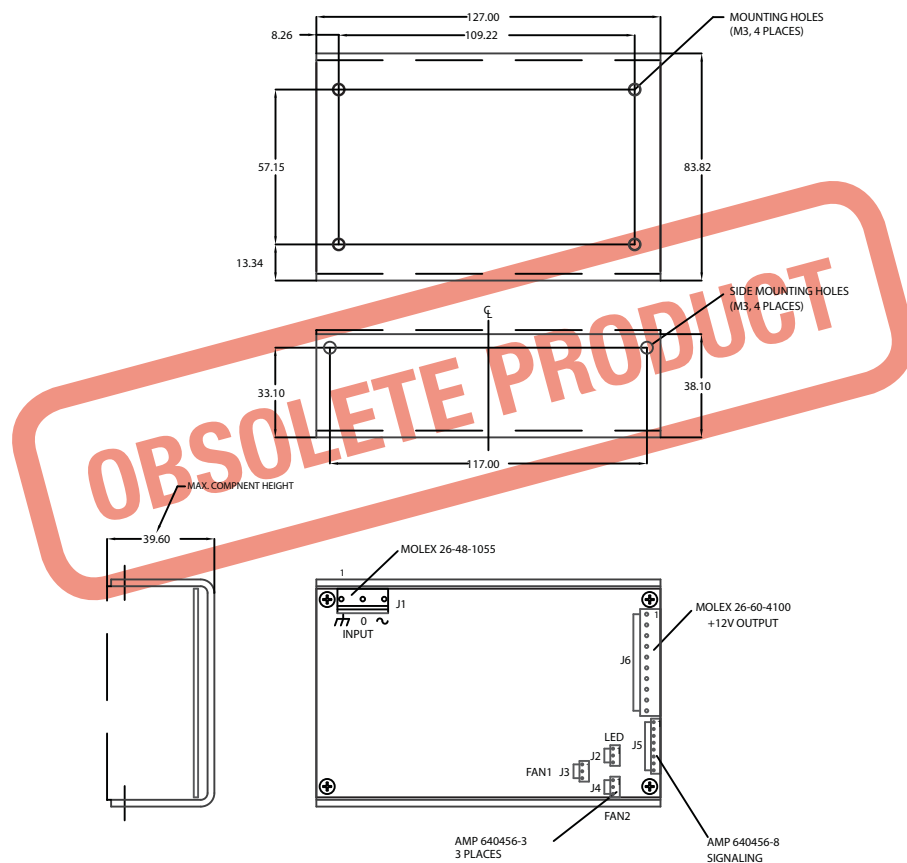
PIN	J2 : LED (mating connector optional)
1	DC OK LED
2	common LED
3	DC FAIL LED

PIN	J3, J4 : FAN (mating connector optional)
1	+12V
2	+12V RTN
3	Fan fail signal

PIN	J5 : AMP 640456-8
1	Power good (PG)
2	Enable
3	+ Sense
4	- Sense
5	5V standby
6	C.S.
7	Fan 1 fail signal to J3-3
8	Fan 2 fail signal to J4-3

PIN	J6 : MOLEX 26-60-4100
1	+12V/RTN
2	+12V/RTN
3	+12V/RTN
4	+12V/RTN
5	+12V/RTN
6	+12V
7	+12V
8	+12V
9	+12V
10	+12V

## MECHANICAL DIMENSIONS



Dimensions: 127mm x 84mm x 39.6mm

## MATING CONNECTORS

Connector	Housing	Crimp terminal
J1	Molex 09-50-3051 (1x)	Molex 08-52-0113 (3x)
J2, J3, J4	Amp 1375820-3 (1x)	Amp 1375819-1 (3x)
J5	Amp 1375820-8 (1x)	Amp 1375819-1 (8x)
J6	Molex 09-50-3101 (1x)	Molex 08-52-0113 (10x)

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