

APC-F251 Series DC-DC CONVERTER

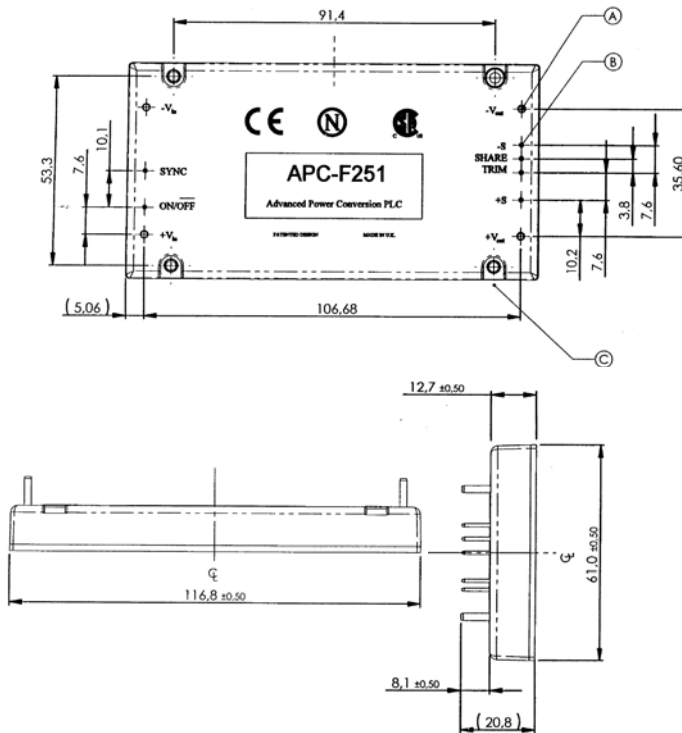
200W Single Output Full Brick High Voltage Input

Provisional Specification

FEATURES



Mechanical Outline



- High Efficiency of >80%
- High Power Density - 35W/In³
- Standard “full brick” package (116.8 x 61 x 12.7mm)
- Low output ripple currents
- Input transient voltage protection
- Thermal monitoring voltage to provide early warning of system fault
- Single connection for parallel operation to provide true N+1 redundancy capability
- No need for master/slave operation
- External synchronisation facility
- Remote sensing provided
- Remote shutdown
- Wide Input Voltage Range
- Thermal protection & Current Limit Protection
- Overvoltage Protection

Range

Model Reference	Input Voltage (V)	Output Voltage (V)	Output Current (A)
APC-F251-300-033	300	3.3	40
APC-F251-300-050	300	5	40
APC-F251-300-120	300	12	16.7
APC-F251-300-150	300	15	13.3
APC-F251-300-240	300	24	8.3
APC-F251-300-480	300	48	4.2



(Approval confirmation expected)

APC-F251 Full Brick Single output DC-DC Converter - High Voltage Input (nominal 5V output version)

Absolute Maximum Ratings

Parameter	Conditions	Min	Typ	Max	Unit
+Vin to -Vin voltage		-0.5		425	V
+Vin to -Vin voltage	< 1 sec			450	V
SYNC to -Vin		-1.2		7	V
ON/OFF to -Vin		-0.3		7	V
+Vout to -Vout		-0.5		7	V
+S to -Vout		-0.5		7	V
-S to -Vout		-0.5		7	V
TRIM to -Vout		-0.5		7	V
Isolation voltage (in to out)		3750			Vrms
Isolation voltage (in to base)		2500			Vrms
Isolation voltage (out to base)		500			Vrms
Storage temperature		-40		85	°C
Operating temperature		-25		85	°C
Pin soldering temperature	< 5 sec wave solder		260		°C
Pin soldering temperature	< 7 sec hand solder		390		°C

Electrical Characteristics

Module Operating Specifications	Notes	Min	Typ	Max	Unit
Operating input voltage		200	300	400	V
Input surge withstand	< 1 sec			425	V
Operating input current			0.83	1.0	A
Output voltage setpoint		4.965	5.0	5.035	V
Output OVP setpoint				125	%Vo
Output current	At 85°C baseplate temperature	4		40	A
Switching Frequency			150		KHz
Efficiency	Nominal input, 75% of full load, 25 Deg C base	77	80		%

Module Input Specifications	Notes	Min	Typ	Max	Unit
Undervoltage turn-on	Increasing input voltage, +Vin to -Vin		N/A		V
Undervoltage turn-off	Decreasing input voltage, +Vin to -Vin		N/A		V
Overshoot turn-off/on	+Vin to -Vin		N/A		%Vo
Dissipation, standby	ON/OFF held low, no load		TBA		W

Module Output Specifications	Notes	Min	Typ	Max	Unit
Line regulation	Low to high input voltage, full load			0.1	%Vo
Load regulation	No load to full load, typical input			0.1	%Vo
Temperature regulation	Deviation of output voltage from 25C		0.01		%/°C
Ripple				50	mVp-p
Current limit				120	%Iomax
Short circuit current limit	Crow bar short circuit		TBA		A
Power sharing accuracy	Full load	5			%
Transient response, peak deviation	50% to 75% and 75% to 50% step load change			250	mV
Transient response, settling time				500	us
Remote sense (total drop)				0.5	V
Trim adjustment		-10		10	%

Note: This power module can be used in a wide variety of applications. To preserve maximum flexibility, internal fusing is not included. However, to achieve maximum safety and system protection, an inline fuse must be used. The safety agencies require a normal-blow, DC fuse with a maximum rating of 20A. The same type fuse with a lower rating can be used in practice.

General Specification

Module Mechanical Specifications	Notes	Min	Typ	Max	Unit
Length			116.0		mm
Width			61		mm
Height			12.7		mm
Thermal resistance	Base to heatsink, fitted with thermal pad		0.1		°C/W
Weight	(Approx)		170		gms

Module General Specifications	Notes	Min	Typ	Max	Unit
Isolation voltage (in to out)	Complies with reinforced insulation requirements	3750			Vrms
Isolation voltage (in to base)	Complies with basic insulation requirements	2500			Vrms
Isolation voltage (out to base)	Complies with operational insulation requirements	500			Vrms
Isolation capacitance	Input to output		TBA		pF
Isolation resistance	Input to output		100M		Ohms
Agency approvals	Nemko, CSA US & Canada, Others per customer requirement				

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