

**PART NUMBER:** VF-S250-XXA-CF

**DESCRIPTION:** switching power supply

**features**

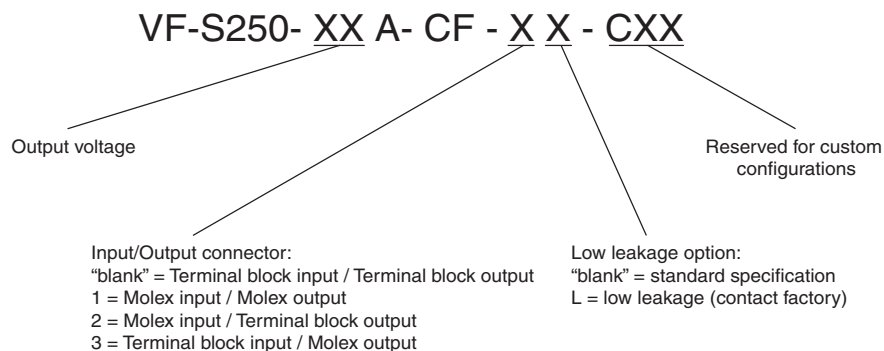
- power factor correction
- power good signal
- short circuit protection
- over load protection
- over voltage protection
- over temperature protection
- providing Peak Power 600W within 500uS duty duration
- approved to UL, CUL, TUV, CE with CB scheme
- low Leakage Current 500uA @ 240Vac  
300uA @ 120Vac



MODEL	preset voltage	output <sup>1,2</sup>	output current		regulation <sup>3</sup>	ripple & noise <sup>3,4</sup> (Vpp)	efficiency
			convection <sup>5</sup>	16 CFM <sup>5</sup>			
VF-S250-05A-CF	5V	2 - 5.5 V	20 A	40 A	+/- 1%	1%	75%
VF-S250-09A-CF	9V	6 - 10 V	13.5 A	25 A	+/- 1%	1%	83%
VF-S250-12A-CF	12V	12 - 13.5 V	11.25 A	20.83 A	+/- 1%	1%	80%
VF-S250-15A-CF	15V	13.6 - 15 V	9 A	16.67 A	+/- 1%	1%	83%
VF-S250-18A-CF	18V	16 - 20 V	7.5 A	13.89 A	+/- 1%	1%	83%
VF-S250-24A-CF	24V	21 - 26 V	5.63 A	10.42 A	+/- 1%	1%	83%
VF-S250-28A-CF	28V	27 - 34 V	4.82 A	8.93 A	+/- 1%	1%	83%
VF-S250-36A-CF	36V	35 - 42 V	3.75 A	6.93 A	+/- 1%	1%	83%
VF-S250-48A-CF	48V	43 - 50 V	2.81 A	5.21 A	+/- 1%	1%	83%
VF-S250-54A-CF	54V	51 - 60 V	2.5 A	4.63 A	+/- 1%	1%	83%

**Notes:**

- 1 Output is fully isolated.
- 2 Output voltage is measured at output power connector.
- 3 1% minimum load is required to maintain the ripple and regulation.
- 4 Ripple and noise is measured from 10 KHz to 20 MHz at output terminals with a 0.1  $\mu$ F ceramic capacitor and a 22  $\mu$ F electrolytic capacitor in parallel.
- 5 Maximum power is 250 W with 16 CFM airflow. 5 and 9 V units maximum current is listed. Maximum power is 135 W with convection cooling.

**CUSTOM CONFIG KEY**




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**INPUT**

parameter	conditions/description	min	nom	max	units
input frequency		47		63	Hz
input voltage	Full Range	90		264	V ac
input current	At 90-132 V ac			6	A
	At 180-264 V ac			3	A
inrush current	peak measured at 115 V ac at full load, cold start			35	A
	peak measured at 230 V ac at full load, cold start			70	A
power factor	Passive Power Correction meets EN61000-3-2 class A				

**OUTPUT**

parameter	conditions/description	min	nom	max	units
transient response	Output voltage returns to within 1% in less than 2.5 mS for a 50% load change. Peak transient does not exceed 5%.				
overshoot	Turn-on and turn-off overshoot shall not exceed 5% over nominal voltage.				
turn on delay	At 120 V ac			1	second
hold up time	At 120 V ac and 80% of rated maximim load	20			ms
adjustability	Adjustable with built-in trim pot.		±5%		
LED display	When green (LED1) is on the power supply is operating normally.				
power good	Designated as PG on the CN1. This signal goes high 100-500 ms after the output reaches regulation. It goes low at least 1 ms before loss of regulation.				
fan drive	12 V dc/300mA for external fan				

**PROTECTION CIRCUIT**

parameter	conditions/description
Input fuse	Built-in ac fuse. A blown fuse usually indicates permanent damage to the power supply serviceable by factory only.
overload	Current limiting starts at 110-140% of the rated output current in foldback mode and recovers automatically.
short circuit	Short circuit can be continuous. Recovers automatically upon removal of short.
output over-voltage	Output is protected agaist overvoltage. Unit shuts down and latches when voltage at output terminals exceeds 130%. AC input needs to be reset to restart the power supply.
over temp.	Power supply shuts down when temperature is in excess of 95 °± 5°C. Auto recovery.

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## GENERAL AND SAFETY

parameter	conditions/description	min	nom	max	units
operating temp.	0 to 70°C ambient, de-rating at 2.5% per degree from 50°C to 70°C.	0		50	°C
storage temp.		-20		85	°C
Optional storage temp.		-40		85	°C
operating humid.	Non-condensing	5%		90%	RH
storage humid.	Non-condensing	5%		95%	RH
EMI	CISPR 22/EN55022 class B, EN61000-3-2, 3, EN61000-4-2, 3, 4, 5, 6, 8, 11, EN55024 CE marked (LVD)				
safety	UL60950-1, CSA C22.2 No. 60950-1, TUV EN60950-1 and CB				
leakage Current	Regular type 1.5mA @ 240VAC, (optional for 500uA @ 240VAC 300uA @ 120VAC)			1.5	mA
vibration	Acceleration ± 7.35 M/(SxS), on X, Y and Z Axis	5		50	Hz
isolation voltage (HI-POT)	Applied for 3 seconds at 10 mA max. Primary to secondary: Primary to transformer core: Primary to earth chassis:			3,000 1,500 1,500	V ac V ac V ac
grounding test	Allowable resistance measured when 25 A current is applied from the ground pin of the three prong plug to the farthest earthed connection point.			0.1	Ω
warranty	Standard warranty length			2	years
MTBF	According to MIL-HDBK-217 at 30 °C	100,000			hours
burn-in	Full load, at 45 ± 5 °C, 230 VAC.			1	hours
remote on/off	Designated as RMSW on the CN1, requires a low signal to inhibit output. Hiccough mode.				

## MECHANICAL

parameter	conditions/description	min	nom	max	units
weight				500	grams
enclosure	5(L) x 3.2(W) x 2(H)				inches

## LOGIC CONNECTOR - (CN1)

parameter	conditions/description
logic	JS B7B-XH-A <b>Suggested mating connector:</b> JST XHP-3 or equivalent (CHYAO SHIUNN JS-2001-03)
pin assignments:	1. Power good 2. Remote switch 3. RTN

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### FAN DRIVER CONNECTOR - (FAN)

parameter	conditions/description
fan	<b>Suggested mating connector:</b> JST XHP-2 or equivalent (CHYAO SHIUNN JS-2001-02)

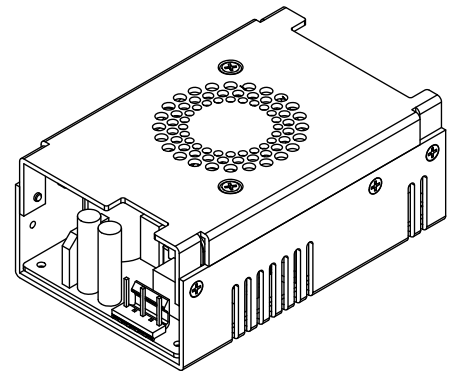
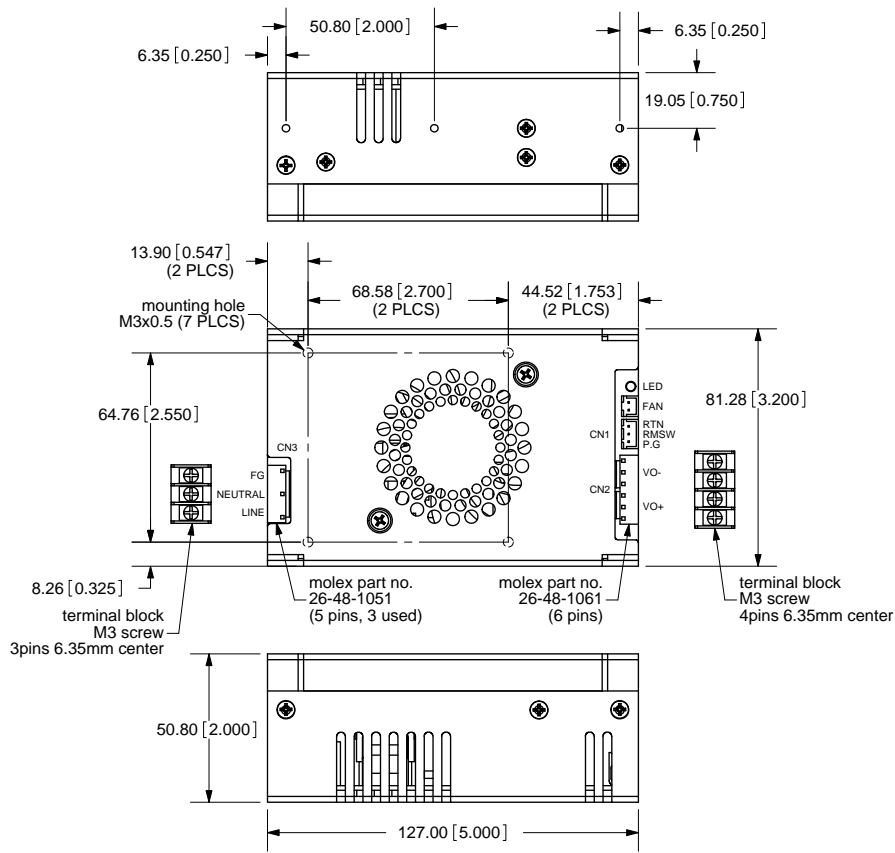
### OUTPUT CONNECTOR - (CN2)

parameter	conditions/description
output (option 1)	Molex Part No. 26-48-1061 or similar (6 pin) Output pin assignment, V+ (Pins 1-3), V- (Pins 4-6) <b>Suggested mating connector:</b> Molex Part No. 09-91-0600 or equivalent (6)
output (option 2)	Howder Terminal block Part No. HD-601-4P (4 pin, M3.5 Screw) 6.35 mm spacing Output pin assignment, V+ (Pins 1-2), V- (Pins 3-4) <b>Suggested mating connector:</b> Molex 19198-0045 or similar

### INPUT CONNECTOR - (CN3)

parameter	conditions/description
AC input (option 1)	Molex Part No. 26-48-1051 or similar (5 pin, 3 used). <b>Suggested mating plug:</b> Molex Part No. 09-91-0500 or equivalent (5 pin, 3 used)
AC input (option 2)	Howder Terminal block Part No. HD-601-3P (3 pin, M3.5 Screw) 6.35 mm spacing <b>Suggested mating connector:</b> Molex 19198-0045 or similar

REV.	DESCRIPTION	DATE
A	NEW DRAWING	6/26/2008



TOLERANCE:  
±0.3mm UNLESS OTHERWISE  
SPECIFIED



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NOTE: MOUNTING HOLE MAX DEPTH 2.30mm

PC FILE NAME:  
VF-S250-XXA-CF Series

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TITLE: SWITCHING POWER SUPPLY		REV: A
PART NO. VF-S250-XXA-CF Series	UNITS: MM [INCHES]	
DRAWN BY: ZRJ	APPROVED BY:	SCALE: 1:2