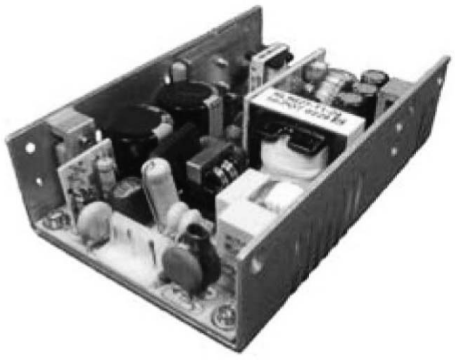
PART NUMBER: VF-S150-XXA

DESCRIPTION: switching power supply

features

- **ac input range auto-selectable**
- **power factor correction**
- **remote on/off**
- **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**
- **high power density: 6.25 watts cu. in.**



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MODEL	preset voltage	output current output[1, 2]	convection	16 CFM	max. power[5]	regulation[4]	ripple & noise [3, 4] (Vpp)
VF-S150-03A	3.3V	3 - 4 V	20 A	30 A	120 W	+/- 1%	50 mV
VF-S150-05A	5V	5 - 6 V	20 A	30 A	150 W	+/- 1%	50 mV
VF-S150-12A	12V	12 - 16 V	8.33 A	12.5 A	150 W	+/- 1%	+/- 1%
VF-S150-18A	18V	17 - 23 V	5.56 A	8.33 A	150 W	+/- 1%	+/- 1%
VF-S150-24A	24V	24 - 30 V	4.17 A	6.25 A	150 W	+/- 1%	+/- 1%
VF-S150-48A	48V	35 - 56 V	2.08 A	3.13 A	150 W	+/- 1%	+/- 1%

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 µF ceramic and a 22 µF electrolytic capacitor in parallel.
5 Maximum power is 100 W with convection cooling except for VF-S150-03A where power is 80 W max.

CUSTOM CONFIG KEY

VF-S150- XX A- X X - CXX

Output voltage

Input/Output connector:
"blank" = Molex input / Molex output
1 = Terminal block input / Terminal block output
2 = Molex input / Terminal block output
3 = Terminal block input / Molex output
4 = IEC320 input / Molex output
5 = IEC320 input / Terminal block output

Low leakage option:
"blank" = standard specification
L = low leakage (contact factory)

Reserved for custom configurations

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INPUT

parameter	conditions/description	min	nom	max	units
input frequency		47		63	Hz
input voltage	90-132 / 180-264 auto-selectable	90/180		132/264	VAC
input current	At 115 VAC			4	A
	At 230 VAC			2	A
inrush current	peak measured at 115 VAC at full load, cold start			35	A
	peak measured at 230 VACat 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.				
efficiency	Measured at 230 V and full load				
	3.3 V model:	70%			
	5 V model:	75%			
	12 V model:	80%			
	minimum for all other models:	83%			
turn on delay	At 120 VAC			1	second
hold up time	At 120 VAC 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 VDC/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 85 ºC. Auto recovery.

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GENERAL AND SAFETY

parameter	conditions/description	min	nom	max	units
operating temp.	Derates linearly from 100% load at 50°C to 50% load at 70ºC.	0		70	ºC
storage temp.		-20		85	ºC
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(E222889), CSA C22.2 No. 60950, TUV EN60950 and CB				
leakage Current	240VAC			1.5	mA
switching frequency			25K		Hz
vibration	Acceleration ± 7.35 M/(SxS), on X, Y and Z Axis	5		50	Hz
isolation voltage	Applied for 3 seconds at 10 mA max.				
(HI-POT)	Primary to secondary:		3000		VAC
	Primary to transformer core:		1500		VAC
	Primary to chassis:		1500		VAC
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 ºC	100,000			hours
burn-in	Full load, at 45 ± 5 ºC, 230 VAC.			1	hours
remote on/off	Designated as RMSW on the CN1, requires a low signal to inhibit ouput. Hiccough mode.				

MECHANICAL

parameter	conditions/description	min	nom	max	units
weight				400	grams
enclosure	5(L) x 3.2(W) x 1.5(H)				inches

LOGIC CONNECTOR - (CN1)

parameter	conditions/description
logic	JS B7B-XH-A
	Suggested mating connector: 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	**Suggested mating connector:** 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)
	Suggested mating connector: 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)
	Suggested mating connector: 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).
	Suggested mating plug: 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
	Suggested mating connector: Molex 19198-0045 or similar