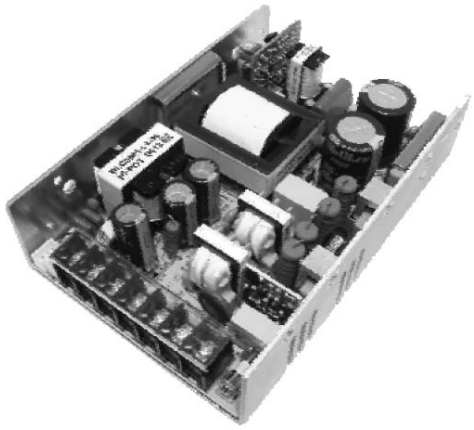
PART NUMBER: VF-D320-DXXXA

DESCRIPTION: switching power supply



features

- **power factor correction**
- **power good signal**
- **short circuit protection**
- **over load protection**
- **over voltage protection**
- **over temperature protection**
- **low leakage current 500 µA @ 240 V ac 300 µA @ 120 V ac (optional)**
- **approved to UL, CUL, TUV, CE with CB scheme**
- **high power density: 8.9 watts/inch^3**
- **dual output**

E210311

MODEL	output[1, 2]	output current convection[3]	output current 18 CFM[4]	ripple & noise[5, 6] regulation[5]	ripple & noise[5, 6] (mVpp)
VF-D320-D512A	5/12 V	15/10.42 A	30/16.67 A	±5%	±1%
VF-D320-D524A	5/24 V	15/5.2 A	30/8.33 A	±5%	±1%
VF-D320-D548A	5/48 V	15/2.6 A	30/4.16 A	±5%	±1%
VF-D320-D1224A	12/24 V	12.5/6.25 A	16.67/8.33 A	±5%	±1%

notes:

1 Output is fully isolated.
2 Output voltage is measured at output power connector.
3 150 W max combined power for V_1 and V_2 for VF-D320-D1224A, 125 W max. for all other models.
4 300 W max combined power for V_1 and V_2 for VF-D320-D1224A, 250 W max. for all other models.
5 1% minimum load is required to maintain the ripple and regulation.
6 Ripple and noise is measured from 10 KHz to 20 MHz at output terminals with a 0.1 µF ceramic capacitor and a 22 µF electrolytic capacitor in parallel.

CUSTOM CONFIG KEY

VF-D320-D XXXX A- X X - CXX

Output voltage

Input/Output connector:
"blank" = Terminal block input / Terminal block output
1 = Molex input / Molex 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		264	VAC
Input current	At 100-120 VAC			8	A
	At 200-240 VAC			4	A
inrush current	Peak measured at 230 VAC at full load, cold start			70	A
	Peak measured at 115 VAC at full load, cold start			35	A
power factor	Passive power factor 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	75%			
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 TTL high 100-500 mS after the output reaches regulation. It goes low at least 1 mS before loss of regulation.				
fan drive	12 VDC/400mA for external fan				
fan fail alarm	Designated as FF on pin3 of CN1. Open collector output rated for 15 VDC/5mA sink correct. Goes high when fan failure is detected.				

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 SAFTEY

parameter	conditions/description	min	nom	max	units
operating temp.	0 to 70ºC ambient, de-rating at 2.5% per degree from 50ºC to 70ºC.	0		70	ºC
storage temp.		-20		85	ºC
operating humid.	Non-condensing	5%		90%	RH
storage humid.	Non-condensing	5%		95%	RH
EMI	Pass FCC Part 15, CISPR 22 class B, Conducted				
safety	UL60950-1, CSA C22.2 No. 60950-1-03, TUV EN60950-1 and CB, CE Mark (LVD) EN61000-3-2, 3 & IEC61000-4 Series regulations and CB				
leakage current	at 240 VAC			1.5	mA
(**optional**)	at 120 VAC			300	uA
	at 240 VAC			500	uA
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
cooling	Convection.				

MECHANICAL

parameter	conditions/description	min	nom	max	units
weight				600	grams
enclosure	6(L) x 4(W) x 1.5(H)				inches

LOGIC SIGNAL CONNECTOR - (CN1)

parameter	conditions/description
CN1	JST B2B-XH-3 or equivalent (CHYAO SHIUNN JS-1001-03)
	Suggested mating connector: JST XHP-3 or equivalent (CHYAO SHIUNN JS-2001-03)
RTN	common (gnd) pin for PG and FF

FAN DRIVER CONNECTOR - (FAN2)

parameter	conditions/description
FAN2	**Suggested mating connector:** JST XHP-2 (2 pins 0.98 pitch) or equivalent (CHYAO SHIUNN JS-2001-02)

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INPUT / OUTPUT CONNECTOR - (CN2)

parameter	conditions/description
option 1	**AC INPUT** JST VH series (5 pin with pins 2 and 4 removed) or equivalent (Chyao Shiunn JS-1120-05) **Suggested mating plug:** JST VHR-5N (5 pin) or equivalent (Chyao Shiunn JS-1121-05) contact: JST SVH series or similar **DC OUTPUT** JST VH series (10 pin) or equivalent (Chyao Shiunn JS-1120-10) **Suggested mating plug:** JST VHR-10N (10 pin) or equivalent (Chyao Shiunn JS-1121-10) contact: JST SVH series or similar
option 2	Howder Terminal block Part No. HB-95-7P (7 pin, M3.5 Screw) 9.5mm spacing **Suggested mating connector:** Molex 19198-0045 or similar
RTN	common (gnd) pin for V_1 and V_2

Howder	Molex
Pin 1: V1	Pins 1 ~ 3: V1
Pin 2 ~ 3: RTN	Pins 4 ~ 8: RTN
Pin 4: V2	Pins 9 ~ 10: V2
Pin 5: GND	Pin 11: GND
Pin 6: Neutral	Pin 13: Neutral
Pin 7: Line	Pin 15: Line

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