

PART NUMBER: VSP-320

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DESCRIPTION: switching power supply

features

•universal ac input / full range
•built-in active PFC function, PF>0.95
•short circuit, overload, over-voltage, over-temperature
•forced air cooling by built-in dc fan
•built-in fan speed control
•fixed switching frequency at 100 kHz
•3 year warranty



	preset	output	output current		line	load	ripple &		
MODEL	voltage	tolerance ³	rated	range	regulation	regulation	noise ²	efficiency	
VSP-320-3.3	3.3 V	±1%	55 A	0~60 A	± 0.5%	± 1.5%	150 mVpp	74%	
VSP-320-5	5 V	±2%	55 A	0~55 A	± 0.5%	± 1%	150 mVpp	79%	
VSP-320-7.5	7.5 V	±2%	40 A	0~40 A	± 0.5%	± 1%	150 mVpp	83%	
VSP-320-12	12 V	±1%	25 A	0~25 A	± 0.3%	± 0.5%	150 mVpp	86%	
VSP-320-13.5	13.5 V	±1%	22 A	0~22 A	± 0.3%	± 0.5%	150 mVpp	86%	
VSP-320-15	15 V	±1%	20 A	0~20 A	± 0.3%	± 0.5%	150 mVpp	86%	
VSP-320-24	24 V	±1%	13 A	0~13 A	± 0.2%	± 0.5%	150 mVpp	87%	
VSP-320-27	27 V	±1%	11.7 A	0~11.7 A	± 0.2%	± 0.5%	200 mVpp	88%	
VSP-320-36	36 V	±1%	8.8 A	0~8.8 A	± 0.2%	± 0.5%	220 mVpp	87%	
VSP-320-48	48 V	±1%	6.7 A	0~6.7 A	± 0.2%	± 0.5%	240 mVpp	89%	

notes:

1. All parameters not specified are measured at 230VAC input, rated load, 25°C 70% ambient

2. Ripple & noise are measured at 20MHz by using a 12" twisted pair terminated with a 0.1µF & 47 µF capacitor

3. Tolerance includes set up tolerance, line regulation, load regulation

4. The power supply is considered a component which will be installed into final equipment. The final equipment must be re-confirmed that it still meets the EMC directives.

V-Infinity reserves the right to make changes to its products or to discontinue any product or service without notice, and to advise customers to verify the most up-todate product information before placing orders. V-Infinity assumes no liability or responsibility for customer's applications using V-Infinity products other than repair or replacing (at V-I's option) V-Infinity products not meeting V-I's published specifications. Nothing will be covered outside of standard product warranty.



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INPUT

parameter	conditions/description	min	nom	max	units	
input frequency		47		63	Hz	
input voltage ⁴		88		264	V ac	
		124		370	V dc	
input current	At 115 V ac (3.3 V output)		2.5		А	
	At 115 V ac (all other output voltages)		5		А	
	At 230 V ac (3.3 V output)		1.5		А	
	At 230 V ac (all other output voltages)		2.5		А	
inrush current	peak measured at 115 V ac at full load, cold start		20		А	
	peak measured at 230 V ac at full load, cold start		40		А	
power factor	At 115 V ac	0.98				
	At 230 V ac	0.95				

OUTPUT

parameter	conditions/description	min	nom	max	units	
turn on delay	115 V ac full load			2500	ms	
	230 V ac full load			800	ms	
rise	115 / 230 V ac full load			50	ms	
hold up time	115 / 230 V ac full load		16		ms	
voltage adjust	3.3 V output	3.14		3.63	V dc	
	5 V output	4.5		5.5	V dc	
	7.5 V output	6		9	V dc	
	12 V output	10		13.2	V dc	
	13.5 V output	12		15	V dc	
	15 V output	13.5		18	V dc	
	24 V output	20		26.4	V dc	
	27 V output	26		31.5	V dc	
	36 V output	32.4		39.6	V dc	
	48 V output	41		56	V dc	

PROTECTION CIRCUIT

parameter	conditions/description	min	nom	max	units		
overload	105~135% rated output power						
	protection type: hiccup mode, recovers automatically after fault condition is removed						
output over-voltage	3.3 V output	3.8		4.5	V dc		
	5 V output	5.75		6.75	V dc		
	7.5 V output	9.4		10.9	V dc		
	12 V output	13.8		16.2	V dc		
	13.5 V output	15.5		18.2	V dc		
	15 V output	18		21	V dc		
	24 V output	27.6		32.4	V dc		
	27 V output	33.7		39.2	V dc		
	36 V output	45		52.5	V dc		
	48 V output	57.6		67.2	V dc		
	protection type: shut down o/p voltage, auto recovery						

notes:

4. Derating may be needed under low input voltages. Please check the derating curve for more details.



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GENERAL AND SAFETY

conditions/description	min nom	max	units			
refer to output derating curve	-20	65	°C			
	-40	85	°C			
Non-condensing	20%	90%	RH			
Non-condensing	10%	95%	RH			
CISPR 22/EN55022 class B, EN61000-3-2,-3, EN6100-4-2,3,4,5,6,8,11,						
ENV50204, EN55024, Light industry level, criteria A						
UL60950-1, TUV EN60950-1 approved						
@ 240VAC		1	mA			
2G 10 min. /1 cycle for 60 min on X, Y and Z Axis	10	500	Hz			
primary to secondary:	500 / 100M Ohms		V dc			
primary to earth ground:	500 / 100M Ohms		V dc			
secondary to earth ground:	500 / 100M Ohms		V dc			
Primary to secondary:	3000		V ac			
Primary to earth ground:	1500		V ac			
secondary to earth ground:	500		V ac			
0~50°C	0.3		%/°C			
	conditions/descriptionrefer to output derating curveNon-condensingNon-condensingCISPR 22/EN55022 class B, EN61000-3-2,-3, EN6100-4ENV50204, EN55024, Light industry level, criteria AUL60950-1, TUV EN60950-1 approved@ 240VAC2G 10 min. /1 cycle for 60 min on X, Y and Z Axisprimary to secondary:primary to earth ground:secondary to earth ground:	conditions/description min nom refer to output derating curve -20 -40 Non-condensing 20% -40 Non-condensing 10% -40 CISPR 22/EN55022 class B, EN61000-3-2,-3, EN6100-4-2,3,4,5,6,8,11, ENV50204, EN55024, Light industry level, criteria A	conditions/description min nom max refer to output derating curve -20 65 -40 85 Non-condensing 20% 90% Non-condensing 10% 95% CISPR 22/EN55022 class B, EN6100-3-2,-3, EN6100-4-2,3,4,5,6,8,11, FNV50204, EN55024, Light industry level, criteria A 90% UL60950-1, TUV EN60950-1 approved 1 1 @ 240VAC 1 100 go 240VAC 1 1 2G 10 min. /1 cycle for 60 min on X, Y and Z Axis 10 500 primary to secondary: 500 / 100M Ohms 500 primary to earth ground: 500 / 100M Ohms 500 Primary to secondary: 3000 1 Primary to earth ground: 500 1 0~50°C 0.3 1	conditions/description min nom max units refer to output derating curve -20 65 °C -40 85 °C Non-condensing 20% 90% RH Non-condensing 10% 95% RH CISPR 22/EN55022 class B, EN61000-3-2,-3, EN6100-4-2,3,4,5,6,8,11, VE VE ENV50204, EN55024, Light industry level, criteria A VE VE UL60950-1, TUV EN60950-1 approved 1 mA @ 240VAC 1 mA 2G 10 min. /1 cycle for 60 min on X, Y and Z Axis 10 500 Hz primary to secondary: 500 / 100M Ohms V dc V dc secondary to earth ground: 500 / 100M Ohms V dc V dc Primary to secondary: 3000 V ac V ac Primary to earth ground: 1500 V ac V ac Primary to earth ground: 500 / 100M Ohms V ac V ac Primary to earth ground: 500 V ac V ac Secondary to earth ground: <td< td=""></td<>		

MECHANICAL

parameter	conditions/description	min	nom	max	units
packaging	1.1 Kg; 12 pcs / 14 kg; 0.92 ft ³				
enclosure	215 x 115 x 50 mm (LxWxH)				inches
MTBF	MIL-HDBK-217F (25°C)	207,000			hours

notes:

5. The power supply is considered a component which will be installed into final equipment. The final equipment must be re-confirmed that it still meets the EMC directives.



STATIC CHARACTERISTICS

DIMENSIONS (mm)



BLOCK DIAGRAM



OUTPUT DERATING



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