V·INFINITY

VSD-50 Series Single Output DC-DC Converter

Rev. 02/2009

Features

- ·2:1 wide input range
- ·Short circuit, overload, over-voltage protected
- ·1500VDC I/O isolation
- ·Built in EMI filter, low ripple noise
- ·Fixed switching frequency at 83KHz
- ·100% full load burn-in test
- ·Low cost, high reliability
- ·1 year warranty
- ·50 watts

RoHS

Model[1,3]	Input Voltage	Output Voltage	Output Current	Ripple[2] & Noise	Load/Line Regulation	Efficiency
VSD-50A-5	9.2~18V DC	5V DC	10 A	100mV	±0.5%	70%
VSD-50A-12	9.2~18V DC	12V DC	4.2 A	120mV	±0.3%	73%
VSD-50A-24	9.2~18V DC	24V DC	2.1 A	150mV	±0.2%	76%
VSD-50B-5	19~36V DC	5V DC	10 A	100mV	±0.5%	72%
VSD-50B-12	19~36V DC	12V DC	4.2 A	120mV	±0.3%	75%
VSD-50B-24	19~36V DC	24V DC	2.1 A	150mV	±0.2%	78%
VSD-50C-5	36~72V DC	5V DC	10 A	100mV	±0.5%	74%
VSD-50C-12	36~72V DC	12V DC	4.2 A	120mV	±0.3%	80%
VSD-50C-24	36~72V DC	24V DC	2.1 A	150mV	±0.2%	83%

Notes:

1 All parameters Not specifically mentioned are measured at normal input, rated load and 25ºC of ambient temp.

2 Ripple & noise are measured at 20MHz of bandwidth by using a 12” twisted pair-wire terminated with a 0.1uF & 47uF parallel capacitor.

3 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 EMC directives.

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Input Voltage

Parameter	Conditions/Description	Min	Nom	Max	Units
Input voltage	A	9.2	12	18	DC
	B	19	24	36	DC
	C	36	48	72	DC

Output

Parameter	Conditions/Description	Min	Nom	Max	Units
DC Voltage adj.		4.5	5	5.5	VDC
		11	12	16	VDC
		23	24	30	VDC
Over Voltage		5.75		6.75	VDC
Protection		13.8		16.2	VDC
		27.6		32.4	VDC
DC output power	For all models		50 Watts		
Overload	hiccup mode, recovers automatically after fault condition is removed. For all models.		105~160%		
Voltage Tolerance	Model B is ±2%, ±1% for all other models				
Hold up time	12VDC/24VDC/48VDC at full load	50			mS
Set up	For all models	2.5s			

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 °C. Auto recovery.

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General and Safety

Parameter	Conditions/Description	Min	Nom	Max	Units
Operating temp.	(refer to output derating curve)	-10		60	ºC
Storage temp.		-20		85	ºC
Operating humid.	Non-condensing	20%		90%	RH
Storage humid.	Non-condensing	10%		95%	RH
Temperature coefficient		±0.3% / ºC (0~50ºC)			
EMI	EN55022(CISPR22) CLASS B				
Safety (EMC)	EN55022 Class B (radiation), En61000-4-2, 3, 4, 6, 8, ENV50204				
Vibration	2G 10min/i cycle, 60 min on X, Y and Z Axis	10		500	Hz
Withstand Voltage	I/P-O/P	3000			VDC
	I/P-FG	1500			VDC
	O/P-FG	800			VDC
Isolation Resistance	I/P-O/P, I/P-FG, O/P-FG	100mΩ min. / 500VDC			
Cooling	Convection				

Mechanical

Parameter	Conditions/Description	Min	Nom	Max	Units
Weight				530	grams
Enclosure	159(L) x 97(W) x 38(H) mm				inches

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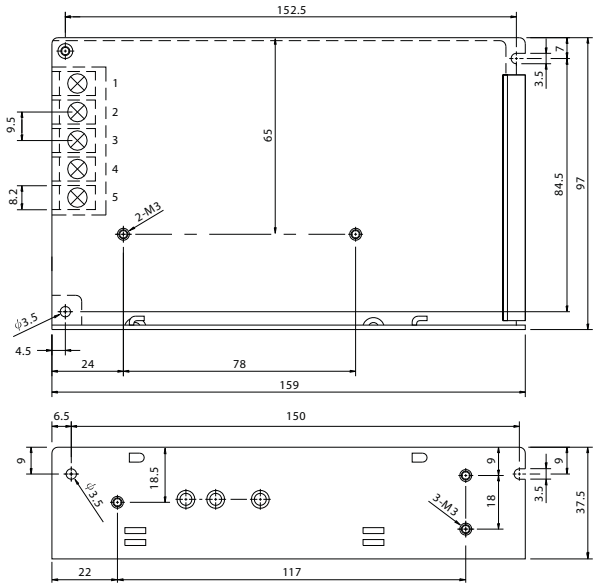
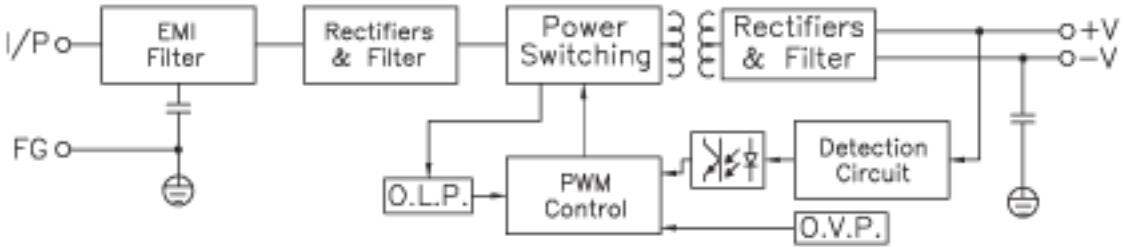
Terminal Pin. No Assignment

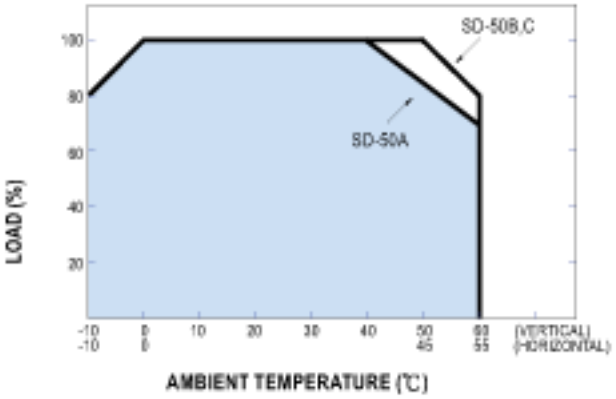
Pin No.	Assignment	Pin No.	Assignment
1	DC INPUT V+	4	DC OUTPUT -V
2	DC INPUT V-	5	DC OUTPUT +V
3	FG ⏚		



Block Diagram



Output Derating



Static Characteristics