AIPUPOWER®

DC/DC Converter BK25-150S12H2N4



Typical Features

- ♦ Wide input voltage range 64-256 VDC
- ♦No-load consumption ≤0.3W
- Switching frequency (64-120VDC Typ.84%, 120-280VDC Typ.87%)
- ♦ Protection: short circuit, over-current, over-voltage protections
- ◆ Isolation voltage: 4000Vac
- ♦Meet IEC/EN62368 test standard
- Comply with CE and RoHS certification standards
- ◆ Fully enclosed plastic case, complied with UL94V-0 level
- ◆ Plug-in mounting on PCB



Application Field

BK25-150S12H2N4-----is a small-sized, high-efficiency module power supply provided by Aipu. This series of power supplies has the advantages of global input voltage range, AC and DC dual-use, low ripple, low temperature rise, low power consumption, high efficiency, high reliability, high safety isolation, and good EMC performance. EMC and safety specifications meet international EN55032 and IEC/EN61000 standards. This series of products are widely used in many fields such as electric power, industry, instrumentation and smart home. When the product is used in a harsh electromagnetic compatibility environment, please refer to the application circuit provided by our company.

Typical Product List

Model	Output specifications			Max. Capacitive Load	Ripple &noise 20MHz(MAX)	Full load efficiency, 150VDC (Typ.)	
	Power	Voltage	Current	(5)	m\/n_n	%	
	(W)	Vo (V)	lo (mA)		түр-р		
BK25-150S12H2N4	25	12	2100	2000	150	87	

Note 1: The typical output efficiency is based on that product is full loaded and burned-in after half an hour.

Note 2: The fluctuation range of full load efficiency(%,TYP) is ±2%, full load output efficiency= total output power/module's input power. Note 3: The test method for ripple and noise adopts the twisted pair test method. Please see the following (ripple & noise test instructions) for specific test methods and combinations.

Input Specification								
Item	Operating Condition	Min.	Тур.	Max.	Unit			
Input Voltage Range	DC Input	64	150	280	VDC			
Input Current	64VDC			0.5				
Ourse Oursent	64VDC		20		А			
Surge Current	256VDC		45					
	Input 64 VDC		0.40	0.30	w			
No Load Consumption	Input 256 VDC		0.10					
Recommended External Fuse	2A/250VAC Slow Fusing				-			

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Hot Plug				Unavailable			
Remote Control Terminal				Unavailable			
Output Sp	ecification						
Item		Operating Condition Mi		in.	Тур.	Max.	Unit
Output Voltage Accuracy		0%~100% load		-	±2.0	±3.0	
Line Regulation		Nominal load		-	±0.5		
Load Regulation		20%~100% nominal load, balance load		-		±1.0	%
Minimum Load		Single output	1	0			
Turn-on Delay Time		Input 64VDC (full load)		-	1500		mS
		Input 256VDC (full load)		-	1500		
Dawar Off L	laldin n Tina a	Input 64VDC (full load)					mS
Power Off Holding Time		Input 256VDC (full load)	-	-	50		
Dynamic	Overshoot nic Range	25%-50%-25%	-5	.0		+5.0	%
Response	Recovery Time	50%-75%-50%	-5	.0		+5.0	mS
Output Overshoot				≤10%Vo %			
Short circuit protection		0%~100% load		Continuous, Self-recovery			
Drift Co	efficient		-		±0.03%		%/°C
Over-current Protection		0%~100% load	≥110% lo, self-recovery			ery	Hiccup
Output Over-voltage Protection		Output 12V				16	VDC
General Sp	pecification						
Ite	m	Operating Condition		Min.	Тур.	Max.	Unit
Operating T	amparatura			-40		+85	°C
Operating 1	emperature	Refer to Temperature Derati	ng Curve,	e, details see the Product Character Curve at back		ack	
Storage Te	mperature			-40		+105	°C
		Wave-soldering		260±4°C, time: 5-10S			
Soldering I	emperature	Manual-welding			360±8°C, time: 4-7S		
Relative Humidity				10		90	%RH
Isolation Voltage	Input- Output	Test for 1 minute, leakage current ≤5mA		4000			VAC
Insulation Resistance	Input- Output	@DC500V		100			MΩ
Safety Standard		-		IEC/EC62368			
Vibration				10-55Hz, 10G, 30Min, along X,Y, Z			

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2) The output ripple noise test diagram is shown on the right. The converter output connects to the electronic load by the jig with cables which size should be defined according to the output current value. The twisted pair (length 30cm±2 cm) should be connected in parallel with the load, the location is as close as possible to the output pins or terminals. The test can be started after input power on.

capacitor are connected in parallel with the probes (100M bandwidth).

The oscilloscope should be set on the Sample Mode.



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Product Performance Curve



Note 1: Input voltage is 64~256VDC and the temperature is -40~85°C, voltage derating must be performed based on the input voltage derating curve.

Note 2: This product is suitable for use in a natural wind cooling environment. If it is used in a closed environment, please contact our company.

EMC External Recommended Circuit



Note:

1. To remove high-frequency noise, the output filter capacitor C1 is recommended to be a 1µF ceramic capacitor, and the capacitor withstand voltage derating is greater than 80%.

2. It is recommended to use TVS tube to protect the downstream circuit (when the module is abnormal). It is recommended to use the

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600W model.

5V output recommended use: SMBJ7.0A, 9V output recommended use: SMBJ12.0A, 12V output recommended use: SMBJ20A, 15V output recommended use: SMBJ20.0A, 24V recommended output: SMBJ30.0A, 48V Recommended output: SMBJ64A

3. MOV is a varistor, recommended model: 10D561K, which is used to protect the module from damage during lightning surges.

4. For customers' general application requirements, use the recommended circuit in Photo 1. If there are higher EMC requirements, please use the recommended circuit in Photo 2. Photo 2 The specific recommended values are as follows:

1) Varistor MOV: Recommended model: 10D-561K, used to protect the module from damage during lightning surges.

2) Thermistor NTC: 10D-9;

3) Safety capacitors CY1 and CY2: 1000pF/400VAC;

4) Safety capacitor CX: 0.1µF/275VAC;

5) Common mode inductor LCM: 15mH-30mH;

6). FUSE (fuse): Must be connected, recommended specification is 3.15A/250V, slow fusing.

Note:

1. The products should be used according to the specifications in this manual, otherwise it could be permanently damaged.

2. A fuse should be used at input.

3. The product performances in this manual cannot be guaranteed if it works at a lower load than the minimum load defined.

4. The product performances in this manual cannot be guaranteed if it works at over-load condition.

5. Unless otherwise specified, all values or indicators in this manual are tested at Ta=25°C, humidity<75%RH, rated input voltage and rated load (pure resistance load).

6. All values or indicators in this manual had been tested based on Aipupower test specifications.

7. The specifications are specially for the parts listed in this manual, any other non-standard model performances could be out of the specifications. Please contact our technician for specific requirement.

8. Aipupower can provide customization service.

9. The product specifications may be modified without a prior notice. Please refer to the published data sheet in Aipupower website.

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