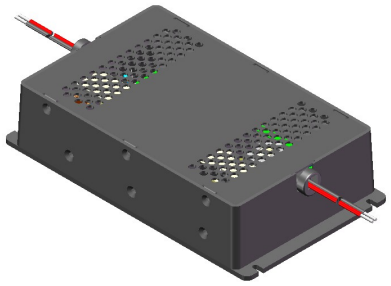
DC-DC Converter
BK200-750SXXG1N6 Series

Typical Features

- ◆ Wide input voltage range 300-1500VDC
- ◆ No load power consumption ≤3W
- ◆ Efficiency 87%(Typ.)
- ◆ Input reverse connection, under-voltage, over-temperature protections
- ◆ Output over voltage, over current, short circuit protections
- ◆ Isolation voltage 4000VAC
- ◆ Conform to CSA-C22.2 No.107.1
- ◆ Altitude during operation 5000m Max



Application Field

BK200-750SXXG1N6 Series *---- a small size, high efficiency module power supply provided by Aipu. The design compliants with EN/IEC62109 & CSA-C22.2 No.107.1. It has the advantages of wide input voltage range, low ripple, low temperature rise, low power consumption, high efficiency & reliability, safety isolated and good EMC performance. This series of products are widely used in solar power generation, home appliance energy storage, industrial control and other fields, and its multiple protections can keep the power supply and its load safety at abnormal operating conditions.*

Typical Product List

Certificate	Part No.	Output Specifications			Capacitive Load (MAX)	Ripple & Noise 20MHz	Efficiency@ Full load 850VDC
		Power	Voltage	Current	u F	(MAX) mVp-p	%(Typ.)
		(W)	Vo(V)	Io(m A)			
-	BK200-750S24G1N6	200	24	8333	5000	300	86
-	BK200-750S32G1N6	200	32	6250	2000	300	87
-	BK200-750S48G1N6	200	48	4167	2000	300	87

Note 1: The typical value of efficiency is based on the product tested after half an hour burn-in at full load.

Note 2: The full load efficiency should be in ±2% of the typical value in this table. The efficiency is calculated by the way that the full output power is divided by the input power.

Note 3: The ripple and noise are tested by the twisted pair method (please refer to the following Ripple & Noise Test Instructions).

Note 4: Please contact with Aipu sales for other output voltages requirement in this series but not in this table.

Input Specifications

Item	Operating Condition	Min.	Typ.	Max.	Unit
Input Voltage Range	DC Input	300	850	1500	VDC
Input Current	300VDC	-	-	1.2	A
	850VDC	-	-	0.45	
	1500VDC	-	-	0.20	
Surge Current	850VDC	-	150	-	A
	1500VDC	-	250	-	
Input under voltage Protection	Protection Start	265	-	285	VDC
	Recovery	275	-	295	
Recommended External Fuse	--	6A/1500VDC Necessary			

Input Anti-reverse Connection	--	Available
Hot Plug	--	N/A

Output Specifications

Item		Operating Condition		Min.	Typ.	Max.	Unit
Voltage Accuracy		Full input voltage range, any load	Vo	-	-	±2.0	%
Line regulation		Rated load	Vo	-	-	±1.0	
Load regulation		Rated input voltage, 0%-100% load	Vo	-	-	±1.0	
Minimum Load		Single Output		0	-	-	%
Turn-on Delay Time		Input 850VDC		-	3000	-	mS
Power-off Hold up Time		Input 850VDC		5	-	-	mS
		Input 1500VDC		8	-	-	mS
Dynamic Response	Overshoot range	25%~50%~25% 50%~75%~50%		-5.0	-	+5.0	%
	Recovery time			-5.0	-	+5.0	mS
Output Overshoot		Full input voltage range		≤10%Vo			%
Short Circuit Protection				Continuous, self-recovery			Hiccup
Drift Coefficient		-		-	±0.02%	-	%/℃
Over Current Protection		Full input voltage range		≥110% Io, self-recovery			Hiccup
Over Voltage Protection		Output 24VDC		⩽35			V
		Output 32VDC		⩽45			
		Output 48VDC		⩽60			

General Specifications

Item		Operating Condition	Min.	Typ.	Max.	Unit
Switching Frequency		-	-	100	-	KHz
Operating Temperature		--	-40	-	+70	°C
		Please refer to the Temperature Derating curve				
Storage Temperature		-	-40	--	+85	
Soldering Temperature		Wave-soldering	260±4℃, time 5-10S			
		Manual-soldering	360±8℃, time 4-7S			
Storage Humidity		-	-	-	95	%RH
Altitude		EN62109	-	-	5000	m
		CSA	-	-	2000	
Isolation Voltage	I/P-O/P	Test 1min, leakage current≤10mA	4000	-	-	VAC
	Input-PE		2000	-	-	
	Output-PE		2000	-	-	
Insulation resistance	I/P-O/P	@500VDC	50	-	-	MΩ

Safety Standard	-	EN62109-1, CSA-C22.2 No.107.1-16
Vibration	-	10-55Hz,10G,30 Min, along X,Y,Z
Safety Class	-	CLASS II
MTBF	MIL-HDBK-217F @ 25℃	＞300,000H

Physical Specifications

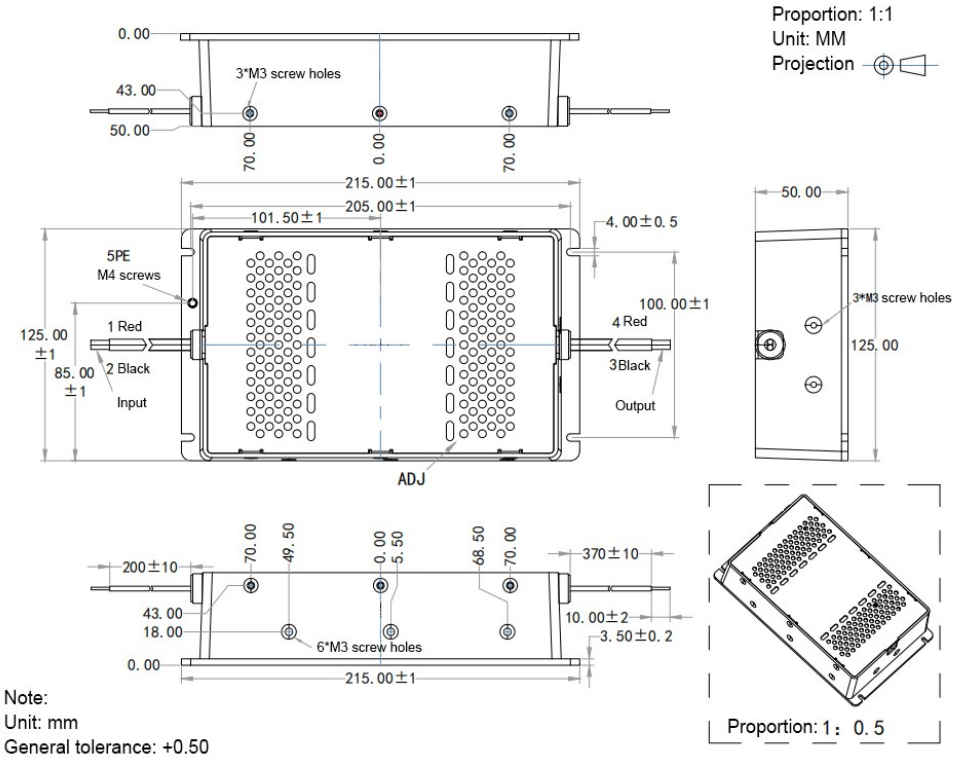
Case Material		Metal
Dimension	Horizontal packaging	215.00 x 125.00 x 50.00 mm
Weight		1500g（TYP）
Cooling Method		Natural air

EMC Performance

Total Item		Item	Standard	Performance/Class
EMC	EMI	CE	CISPR32/EN55032	CLASS A
		RE	CISPR32/EN55032	CLASS A
	EMS	RS	IEC/EN61000-4-3	10V/m Perf.Criteria A
		CS	IEC/EN61000-4-6	10Vr.m.s Perf.Criteria A
		ESD	IEC/EN61000-4-2	Contact ±6KV / Air ±8KV Perf.Criteria B
		Surge	IEC/EN61000-4-5	Line to line ±1KV / line to ground ±2KV Perf.Criteria B
		EFT	IEC/EN61000-4-4	±2KV Perf.Criteria B

Mechanical Dimensions

Pin		Function
Input	1 Red	Vin+
	2 Black	Vin-
Output	3 Black	Vo-
	4 Red	Vo+
Case	5 Ground	PE



Note:
Unit: mm
General tolerance: +0.50

Packaging code	L x W x H	
G1	215.00x 125.00 x 50.00 mm	8.465 × 4.921 × 1.969 inch

Pin-Function

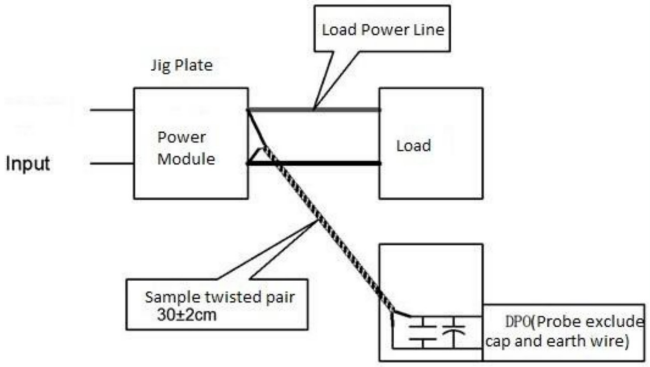
Pin No.	1	2	3	4	5
Single	Vin+	Vin-	Vo-	Vo+	PE

Ripple & Noise Test Instruction (Twisted Pair Method, 20MHZ bandwidth)

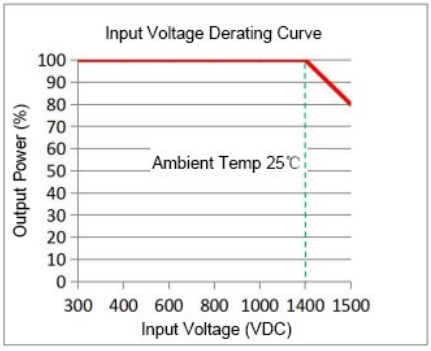
Test Method:

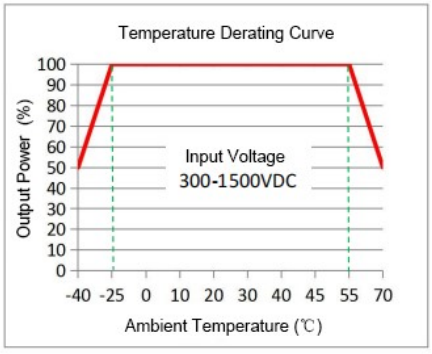
1) Ripple noise test need 12# twisted pair cables, an oscilloscope which bandwidth should be set to 20MHz, 0.1uF polypropylene capacitor and 10uF high-frequency low-resistance electrolytic capacitor are connected in parallel with the probes (100M bandwidth). The oscilloscope should be set on the Sample Mode.

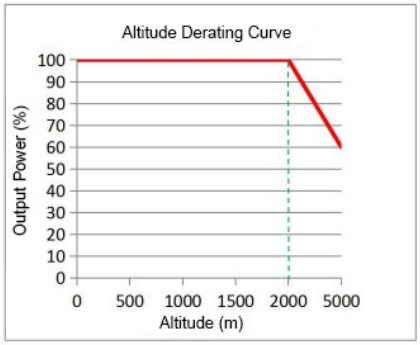
2) The output ripple noise test diagram is shown on the right. The converter output connects to the electronic load by the jig with cables which size should be defined according to the output current value. The twisted pair (length 30cm ± 2 cm) should be connected in parallel with the load, the location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



Product Performance Curve





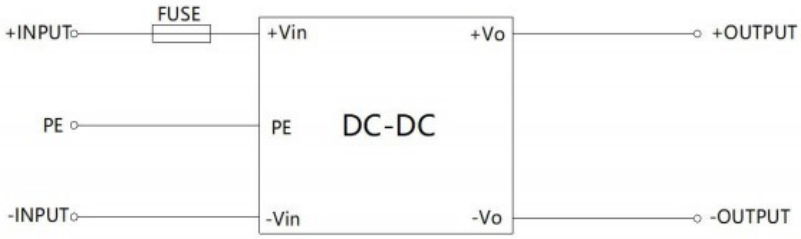


Note 1: The output power should be derated based on the input voltage derating curve at 1400~1500VDC.

Note 2: This product should operate at a natural air condition, please contact us if it need be used at a closed space.

Recommended Circuits for Application

1. Typical application circuit



Recommended Circuit 1

Part No.	FUSE
BK200-750SXXG1N6	6A/1500VDC, necessary

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 performance in this manual cannot be guaranteed if it works at a lower load than the minimum load defined.

4. The product performance 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℃, 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 requirements.

8. Aipupower can provide customization service.

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