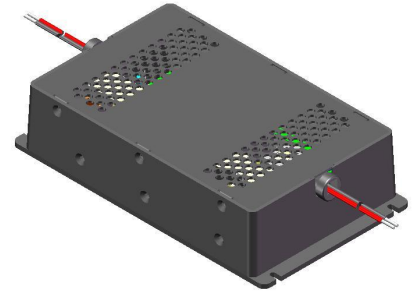




Typical characteristics of product

- ◆ Wide input voltage range: 300-1500VDC
- ◆ No load power consumption $\leq 3W$
- ◆ Conversion Efficiency (Typ. 90%)
- ◆ Switching Frequency: 100KHz
- ◆ Type of Protection 1: Input anti-reverse, under voltage, over temperature protection
- ◆ Type of Protection 2: Output over-voltage, over-current, short circuit protection
- ◆ Isolation Voltage: 4000Vac
- ◆ Conform to CSA-C22.2 No.107.1 Approval Standards
- ◆ Meet the 5000m altitude requirement



Application area

BK350-800SXXG1N6 Series-----a compact size, high efficient power module offered by Aipu.

This series conform to UL1741, EN/IEC62109, CSA-C22.2 No.107.1 approval standards. It features ultra **wide input voltage range, low ripple, low temperature rise, low power consumption, high efficiency, high reliability, safer isolation, good EMC performance.** This series of products have a wide range of applications in photovoltaic power generation, home appliance energy storage, industrial control and other fields, and it has multiple protection functions can improve the safety performance of the power supply and its load when the power supply is abnormal. When the product is used in a harsh electromagnetic compatibility environment, it is necessary to refer to the application circuit given by our company.

Typical Product List

Certifications	MODEL	Output Specifications			Max. Capacitive Load	Ripple & Noise 20MHz (MAX)	Efficiency Full Loads 800VDC (Typical)
		Power	Voltage	Current			
		(W)	Vo (V)	Io (mA)			
-	BK350-800S24G1N6	350	24	14600	2200	300	92
-	BK350-800S28G1N6	350	28	12500	1500	300	92
-	BK350-800S32G1N6	350	32	10938	1500	300	92

Note 1: The typical value of output efficiency is based on half an hour after full load aging.

Note 2: The fluctuation amplitude of full-load efficiency (% TYP) in the table is $\pm 2\%$. The full load output power is equal to the total output power divided the input power of the power module

Note 3: The test method of ripple and noise is twisted pair test, See Ripple & Noise test instructions for specific test methods and matching.

Note 4: The above is only a partial list of products because of space is limited. If you need products other than those listed, please contact our sales department.



Input Characteristics

Item	Operating Condition	Min.	Typ.	Max.	Unit
Input Voltage Range	DC Input	300	800	1500	VDC
Input Current	300VDC	-	-	2.00	A
	1100VDC	-	-	0.75	
	1500VDC	-	-	0.60	
Surge Current	1500VDC	-	300	-	
No Load Consumption	1500VDC	-	-	3	W
Input under voltage	Under voltage protection initiated	240	-	295	VDC
	Under voltage protection release	265	-	305	
Recommended value of external fuse	-	6A /1500VDC necessary			
Input anti- inverse connection	-	Support			
Hot Plug	-	Unavailable			

Output Characteristics

Item	Operating condition		Min.	Typ.	Max.	Unit
Voltage accuracy	Input full voltage range,Any load	Vo	-	±2.0	-	%
Linear regulation	Nominal load	Vo	-	±1.0	-	
Load regulation	Input nominal voltage 0%~100%load	Vo	-	±2.0	-	
Minimum load	Single output		0	-	-	%
Startup delay time	Input 800VDC		-	-	5000	mS
Power-off holding time	Input 800VDC		-	10	-	mS
Dynamic response	Over-shoot amplitude	25%~50%~25%	-5.0	-	+5.0	%
	Recovery time	50%~75%~50%	-5.0	-	+5.0	mS
Output overshoot	Input full voltage range		≤10%Vo			%
Short circuit protection			continuous, self-recovery			Hiccup
Drift coefficient	-		-	±0.02%	-	%/°C
Over-current protection	Input full voltage range		≥110% Io self-recovery			Hiccup
Over-voltage protection	Output 24VDC		≤35			V
	Output 28VDC		≤40			
	Output 32VDC		≤45			


General Characteristic

Item		Operating condition	Min.	Typ.	Max.	Unit
Switching frequency		-	-	100	-	KHz
Operating temperature		-	-40	-	+85	°C
		You need to perform temperature derating based on the temperature derating curve. Derating according to "Derating curve" at back				
Storage temperature		-	-40	-	+85	
Soldering temperature		Wave-soldering	260±4°C, time5-10S			
		Manual-welding	360±8°C, time4-7S			
Storage humidity		-	-	-	95	%RH
Isolation voltage	Input-Output	Test one minute, Leak current≤10mA	4000	-	-	VAC
	Input-PE	Test one minute, Leak current≤10mA	4000	-	-	
	Output-PE	Test one minute, Leak current≤10mA	4000	-	-	
Insulation resistance	Input-Output	@ 500VDC	50	-	-	MΩ
Safety standard		-	EN62109-1、UL1714、CSA-C22.2 No.107.1			
Vibration		-	10-55Hz,10G,30Min,alongX,Y,Z			
Safety level		-	CLASS II			
Mean time between failure		-	MIL-HDBK-217F 25°C > 300,000H			

Physical Specifications

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

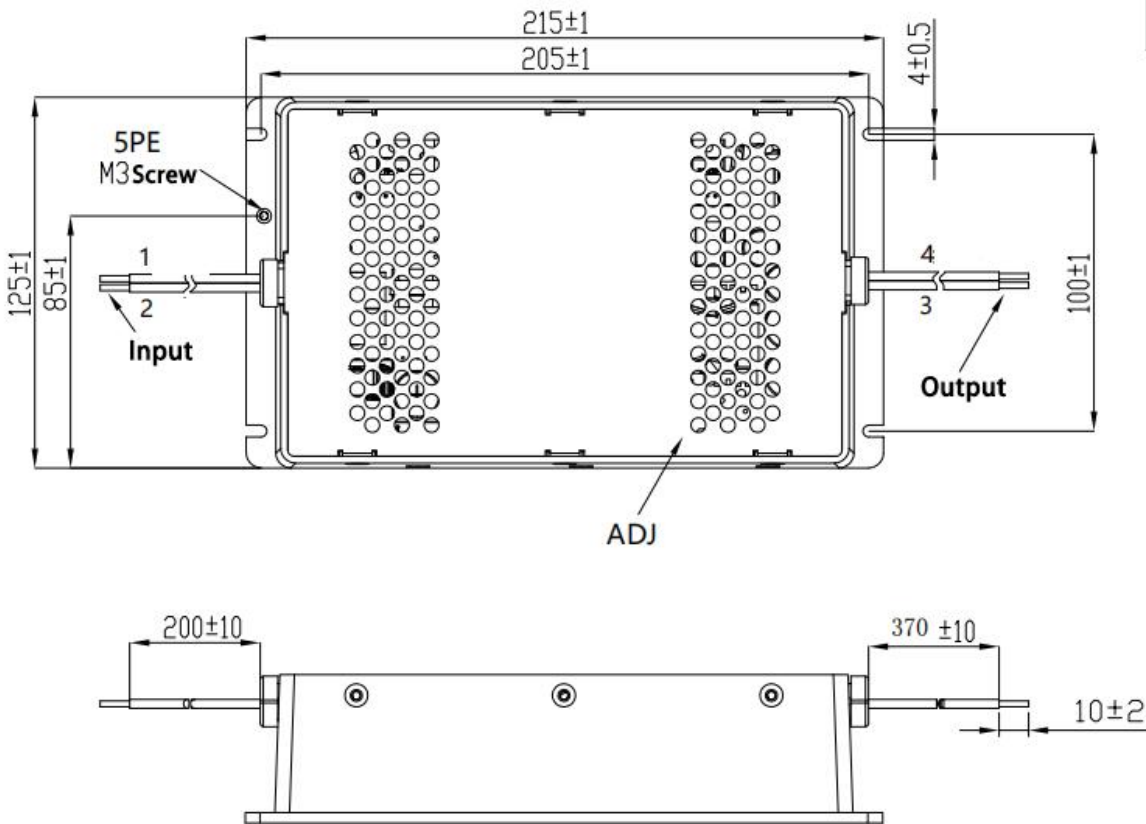
Electromagnetic Compatibility

Total Item	Sub Item	Testing standard	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	±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	±4KV Perf.Criteria B

Package Size

Scale: 1:2

Unit: MM



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

Pin Definition

Pin-out	1	2	3	4	5
Single (S)	Vin+	Vin-	Vo-	Vo+	PE

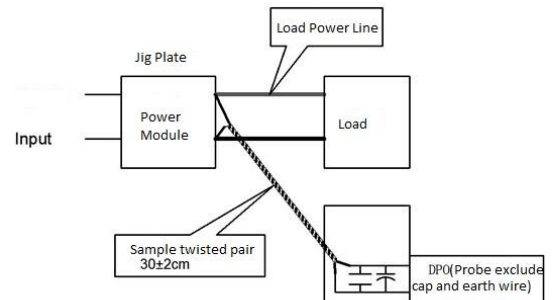
Ripple & Noise Test: (Twisted Pair Method 20MHZ bandwidth)

Ripple & Noise Test:

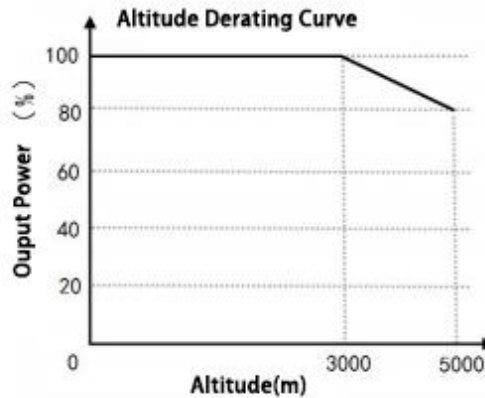
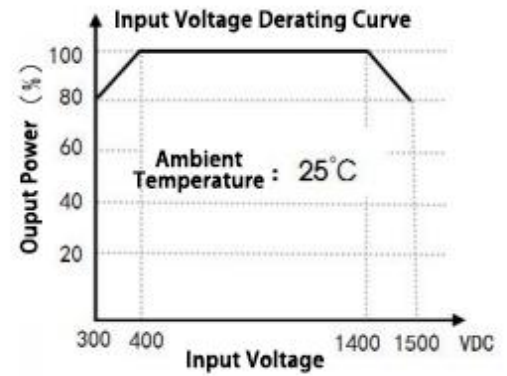
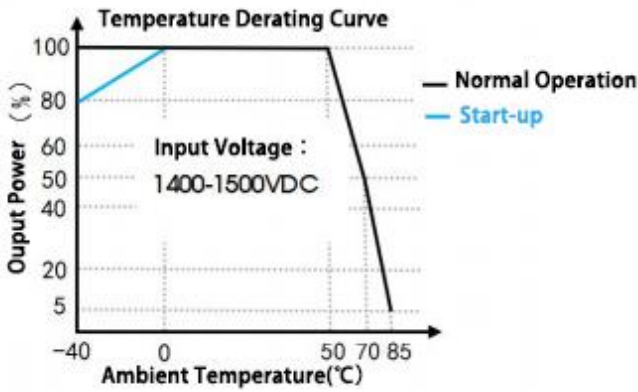
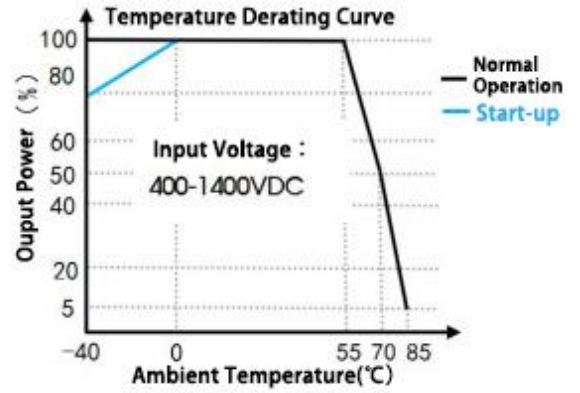
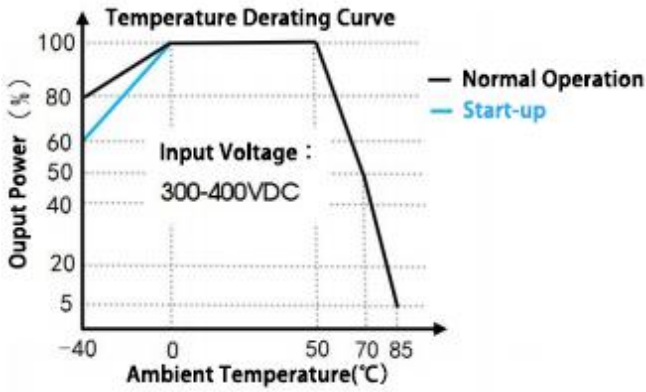
1.12# twisted pair to connect, Oscilloscope bandwidth set as 20MHz, 100M bandwidth probe, terminated with 0.1uF polypropylene capacitor and 10uF high frequency low resistance electrolytic capacitor in parallel, oscilloscope set as Sample pattern.

2. Output Ripple & Noise Test Method:

Input terminal connect to power supply, output terminal connect to electronic load through jig plate, Use 30cm±2 cm sampling line, Power line selected from corresponding diameter wire with insulation according to the flow of output current.



Product Characteristic Curve



Note 1: If the input voltage ranges from 300 to 400VDC / 1400 to 1500VDC, perform voltage derating based on the input voltage Derating curve

Note 2: This product is suitable to be used in natural air cooling environment. If it is used in a closed environment, please contact us for inquiry.



Design Reference

1、 Typical Application Circuit

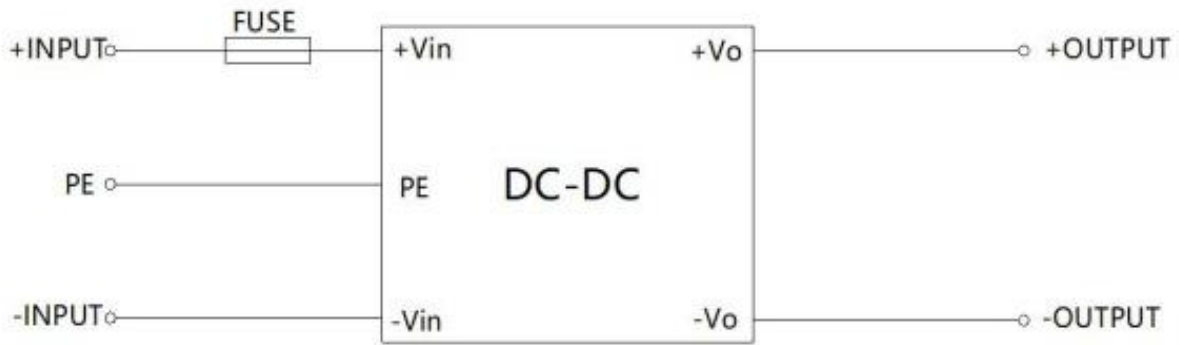


图 1

Model	FUSE
BK350-800S24G1N6	6A /1500VDC Necessary

Note:

- 1、 The product should be used within the specifications,otherwise it will cause permanent damage to the product;
- 2、 If the product works below the minimum required load,it cannot be guaranteed that the product meets all performance specifications in this manual;
- 3、 If the product is operating below the minimum required load, the performance of the product cannot be guaranteed to meet all performance indicators in this manual;
- 4、 If the product works outside the load range of the product,the performance of the product cannot be guaranteed to meet all performance specifications in this manual;
- 5、 The above data,unless otherwise specified,, are measured at Ta=25℃ , humidity<75%, input nominal voltage and output rated load (pure resistance load) ;
- 6、 All the above index test methods are based on the company's standards;
- 7、 The above are the performance indicators of the product models listed in this manual,some indicators of non-standard models of products will exceed the above requirements,the specific situation can directly contact the technical personnel of the division.
- 8、 The company can provide customized products;
- 9、 Product specifications are subject to change without prior notice,please pay attention to our company's latest manual.