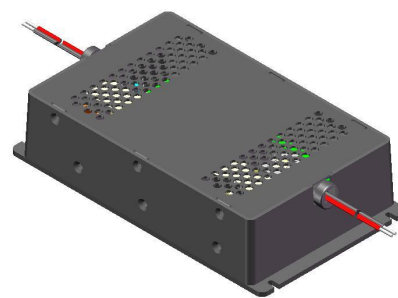


Typical Features

- ◆ Wide input voltage range 300-1500VDC
- ◆ Efficiency 92%(Typ.)
- ◆ Switching frequency 100KHz
- ◆ Input anti-reverse and under voltage protections
- ◆ Output over voltage, over current & short circuit protections
- ◆ Isolation voltage 4000VAC
- ◆ Operating temperature from -40°C to +85°C
- ◆ Compliant with UL1741/CSA-22.2 No.107.1-1
- ◆ Altitude during operation 5000m Max



Application Field

BK350-800SXXG1N6 Series ---- Compact size & high efficiency DC-DC modular power supplies with compliance to UL1741/CSA-22.2 No.107.1-1 & IEC/EN62109, wide input voltage range, low ripple, low temperature rise, low standby power consumption, high efficiency, high reliability, safety isolated and good EMC performance. This series of products can be widely used in the fields of Solar power generation, Energy storage and Industrial control, etc. The multiple protection functions can keep the power supply and the load safe under abnormal conditions.

Typical Product List

Certification	Part No.	Input Voltage Range		Output Specifications			Input current (mA) Typ. @800VDC		Capacitive Load (Max) @800VDC	Efficiency @Full Load 800VDC	
		Nominal	Range	Power	Voltage	Current				Min	Typ.
		(VDC)	(VDC)	P(W)	Vo (VDC)	Io (mA)	Full load	No load	(uF)	(%)	(%)
-	BK350-800S24G1N6	800	300	350	24	14600	500	25	2200	90	92
-	BK350-800S28G1N6		-		28	12500	500	25	1500	90	92
-	BK350-800S32G1N6		1500		32	10938	500	25	1500	90	92

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 $\pm 2\%$ 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 & noise is tested by the Parallel-line method, please refer to the following Test Instruction.

Note 4: Please contact Aipu sales for other output voltages requirements of this series but not listed in this table.

Input Specifications

Item	Test 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	-	-	100	A
No load power consumption	1500VDC	-	-	3	W

Under voltage protection	Start protection	240	-	295	VDC
	Recovery	265	-	305	
Recommended external fuse	-	6A/1500VDC (Necessary)			
Input Anti-inverse connection	-	Available			
Hot plug	-	Unavailable			

Output Specifications

Item	Test Condition		Min.	Typ.	Max.	Unit
Voltage accuracy	Full input voltage range, rated load		-	±2.0	±3.0	%
Line regulation	Full input voltage range, rated load		-	±1.0	±1.5	
Load regulation	Nominal input voltage, 0%-100% load		-	±2.0	±2.5	
Ripple & Noise	5%-100% load, 20MHz bandwidth		-	-	300	mVp-p
Dynamic response time	25% load	Full input voltage range	-	-	+5.0	mS
Dynamic response deviation	step change	Nominal input voltage	-5.0	-	+5.0	%
Minimum load	Single output		0	-	-	%
Temperature drift coefficient	-		-	±0.02	-	%/°C
Turn-on delay time	Input 800VDC		-	-	5000	mS
Power-off hold-up time	Input 800VDC		10	-	-	mS
Output overshoot	Full input voltage range		≤10			%Vo
Short circuit protection			Continuous, self-recovery			Hiccup
Over current protection			110%Io	-	200%Io	Hiccup
Over voltage protection	Output 24VDC		≤35			VDC
	Output 28VDC		≤40			
	Output 32VDC		≤45			

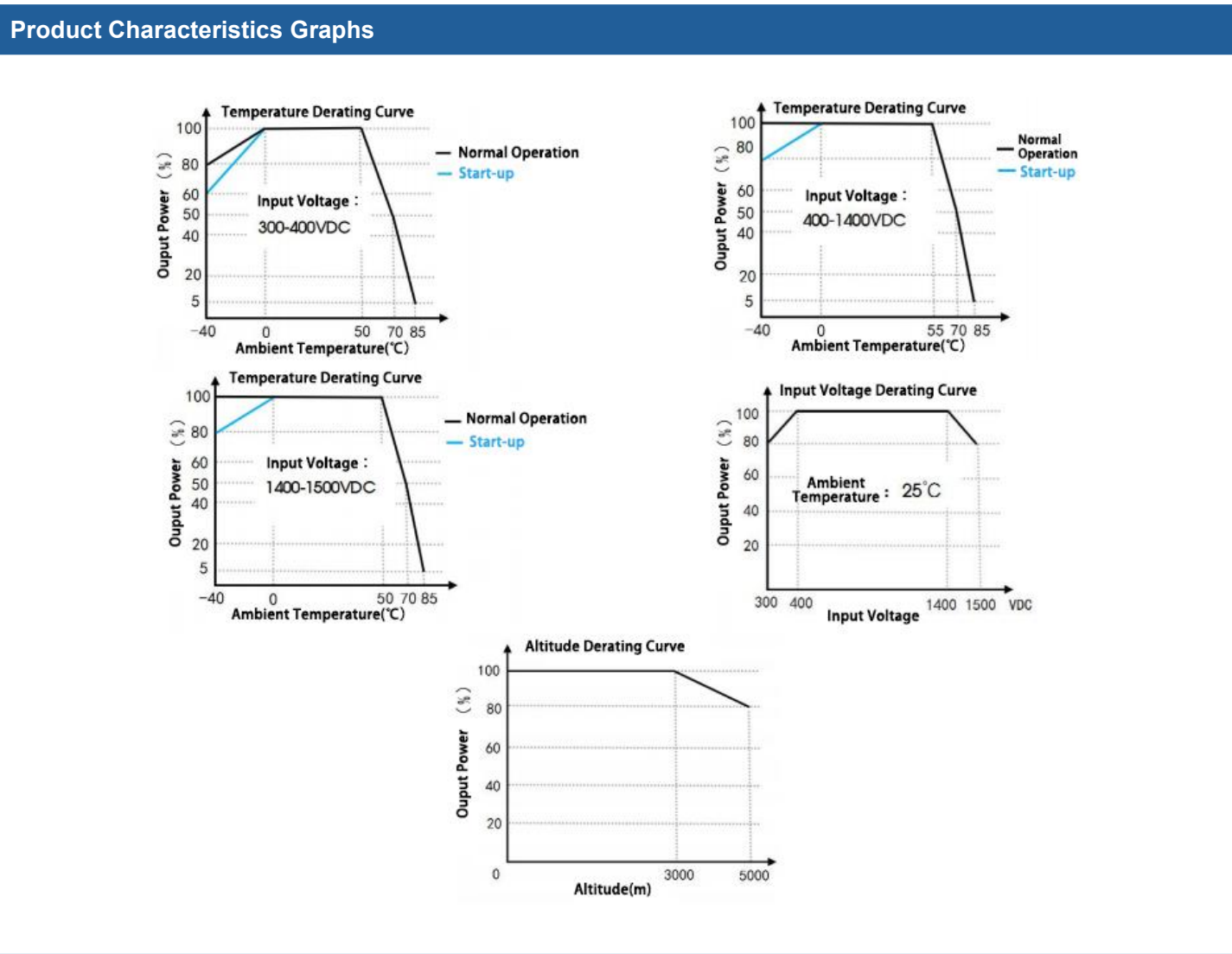
Note: Ripple & noise is tested by the Parallel-line method, please refer to the following Test Instruction.

General Specifications

Item	Test Condition	Min.	Typ.	Max.	Unit
Switching frequency	-	-	100	-	KHz
Operating temperature	Refer to the temperature derating graph	-40	-	+85	℃
Storage temperature	-	-40	-	+105	
Soldering temperature	Wave soldering	260±4℃，time 5-10S			
	Manual soldering	360±8℃，time 4-7S			
Storage humidity	No condensation	-	-	95	%RH
Isolation voltage	I/P-O/P, Test 1 Min., Leak current ≤10mA	4000	-	-	VAC
	I/P-PE, Test 1 Min., Leak current ≤10mA	4000	-	-	
	O/P-PE, Test 1 Min., Leak current ≤10mA	4000	-	-	
Insulation resistance	I/P-O/P, @ 500VDC	50	-	-	MΩ
MTBF	MIL-HDBK-217F@ 25℃	300	-	-	K Hours
Cooling method	-	Nature air			

Vibration	-		10-55Hz, 10G, 30 Min, along X, Y, Z	
Case Material	-		Metal	
Weight & Dimensions	Part Number	Weight (Typ.)	Dimensions L x W x H	
	BK350-800SXXG1N6	1500g	215.00x125.00x50.00 mm	8.465x4.921x1.969 inch

EMC Performances				
Item			Test 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	±4KV Perf. Criteria B

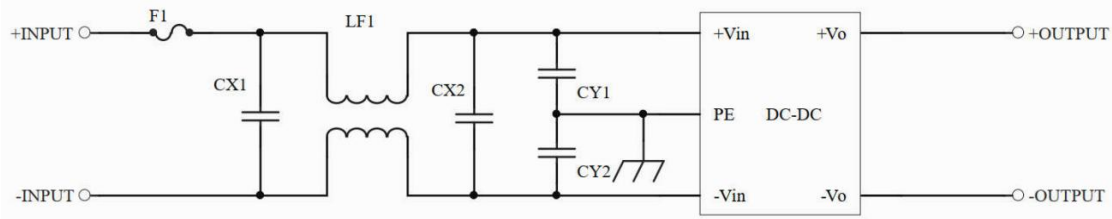


Note 1: The output power should be derated based on the input voltage derating curves at input 300-400VDC & 1400-1500VDC.

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

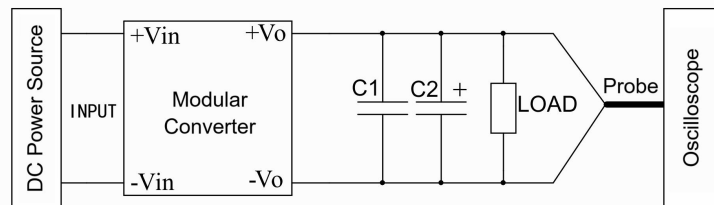
Recommended Circuit for Application

Typical circuit diagram for application



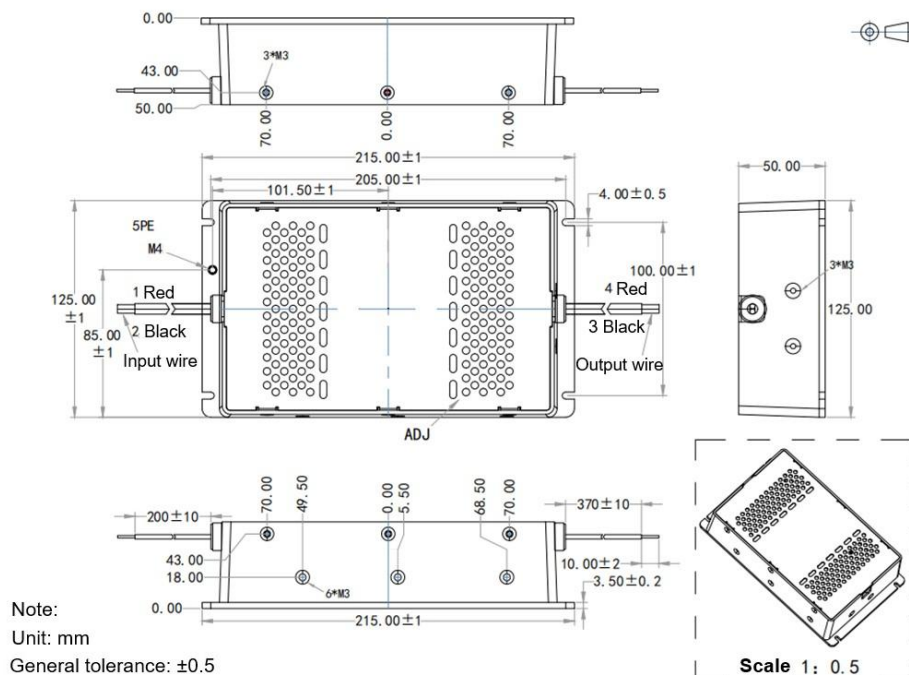
Component	Parameters
F1	FUSE, 6A/1500VDC, Necessary
CX1, CX2	X1/224M/1500VDC
LF1	30mH/2.5A
CY1, CY2	Y1/222M/1500VDC

Ripple & Noise Test Instruction (Parallel-line Method, 20MHZ bandwidth)



1. The Ripple & Noise test needs the cables in parallel, an oscilloscope that should be set at the Sample Mode, bandwidth 20MHz. 100M bandwidth probe with cap and ground removed. One polypropylene capacitor C1(0.1uF) and one high-frequency low-resistance electrolytic capacitor C2(10uF) are connected in parallel with the probe.
2. Refer to the test diagram, 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 test can start at the converter output terminals after the input power on.

Mechanical dimensions



Terminal Function Description					
Terminal No.	1 (Red)	2 (Black)	3 (Black)	4 (Red)	5 (Case)
Single (S)	Vin+	Vin-	Vo-	Vo+	PE

Application Notice

- 1.The product should be used according to the specifications, otherwise it could be permanently damaged.
2. The product performance cannot be guaranteed if it works at a lower load than the minimum load defined.
3. The product performance cannot be guaranteed if it works under over-load condition.
4. Unless otherwise specified, all values or indicators on this datasheet are tested at Ta=25°C, humidity<75%RH, nominal input voltage and rated load (pure resistance load).
5. All values or indicators on this datasheet have been tested based on Aipupower test specifications.
- 6.The specifications are specially for the parts listed on this datasheet, any other non-standard model performances could be out of the specifications. Please contact our technician for specific requirements.
7. Aipupower can provide customization service.

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