DC/DC Converter
BK40-850SXXG2N6

Typical Features

- ◆ Wide range input: 200-1500VDC
- ◆ No-load power consumption ≤0.15W
- ◆ Conversion efficiency (typically 81%)
- ◆ Switching frequency: 65KHz
- ◆ Protections: Short circuit, over current, over voltage protection
- ◆ Isolation voltage: 4000VAC
- ◆ Comply with CE and RoHS certification standards

Application Field

BK40-850SXXG2N6 *series -- It is a special high-voltage power supply designed and developed by Aipu for customers specifically for coal mine electrical customers, with regard to equipment power supply safety, convenient installation, reliable application, technological innovation and other development requirements. This series of power supplies have the advantages of global input voltage range, low ripple, low temperature rise, low power consumption, high efficiency, high reliability, and high safety isolation.*

Typical Product List

Certificate	Part No	Output Specs			Max. Capacitive Load	Ripple and noise 20MHz	Efficient @800VDC (TYP.)
		Power	Voltage	Current			
		(W)	Vo (V)	Io (mA)	uF	mVp-p	%
-	BK40-850S12G2N6	40	12	3333	2000	100	77
	BK40-850S24G2N6	40	24	1667	1000	100	81
	BK40-850S28G2N6	40	28	1428	800	100	82
	*BK40-850S35G2N6	40	35	1150	600	100	84
	*BK40-850S37G2N6	40	37	1081	400	100	85

Note 1: Due to space limitations, above is only a part of our product list, please contact our sales team for more items.

Note 2:."*" is model under developing.

Note 3: The typical output efficiency is based on that product is full loaded and burned-in after half an hour.

Note 4: The fluctuation range of full load efficiency(%,TYP) is ±2%, full load output efficiency= total output power/module's input power.

Note 5:The test method of ripple and noise adopts twisted pair test method. Please refer to the following for specific test method and configuration (instructions of ripple & noise test).

Input Specification

Item	Operating Condition	Min.	Typ.	Max.	Unit
Input Voltage Range	AC input	-	-	-	VAC
	DC input	200	800	1500	VDC
Input Current	200VDC	-	-	0.30	A
	800VDC	-	-	0.08	
Inrush current	200VDC	-	-	180	

	800VDC	-	-		
Hot swap	-	not support			
Remote	-	No remote control terminal			
Recommended value of external fuse	-	2A/1000VAC, must be connected			

Output Specification

Item		Operating Condition	Min.	Typ.	Max.	Unit
Output Voltage Accuracy		Input full voltage range for any load	--	±2.0	±3.0	%
Linear adjustment rate		Nominal load	--	--	±0.5	
Load regulation rate		Input nominal voltage 10%~100% load	--	--	±1.0	
No-load power consumption		Input 200VDC	--	--	0.15	W
		Input 1500VDC	--	--		
Minimum load		Single output	0	--	--	%
Turn-on delay time		Input nominal voltage (full load)	--	1000	--	mS
Power off Holding time		200VDC (full load)	--	100	--	mS
		1500VDC (full load)	--	150	--	
Dynamic Response	Overshoot range	25%-50%-25% 50%-75%-50%	- 5.0	--	+ 5.0	%
	Recovery time		- 5.0	--	+ 5.0	mS
Output overshoot		Input full voltage range	≤10%Vo			%
Short circuit protection			Self-recovery after the short circuit is removed			Hiccup
Drift coefficient		--	--	±0.03%	--	%/℃
Over current protection		Input 800VDC	≥150% Io self-recovery			Hiccup
Over voltage protection		Input 12VDC	≤18			VDC
		Input 24VDC	≤30			VDC
		Input 28VDC	≤35			VDC
		Input 35VDC	≤45			VDC
		Input 37VDC	≤45			VDC

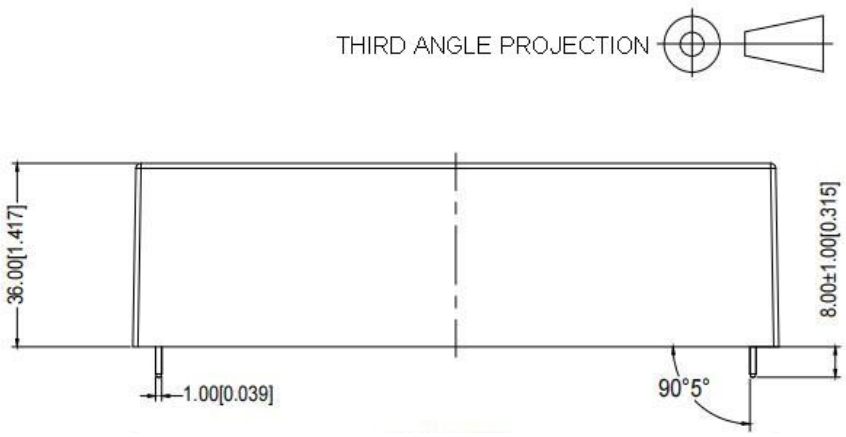
General Specification

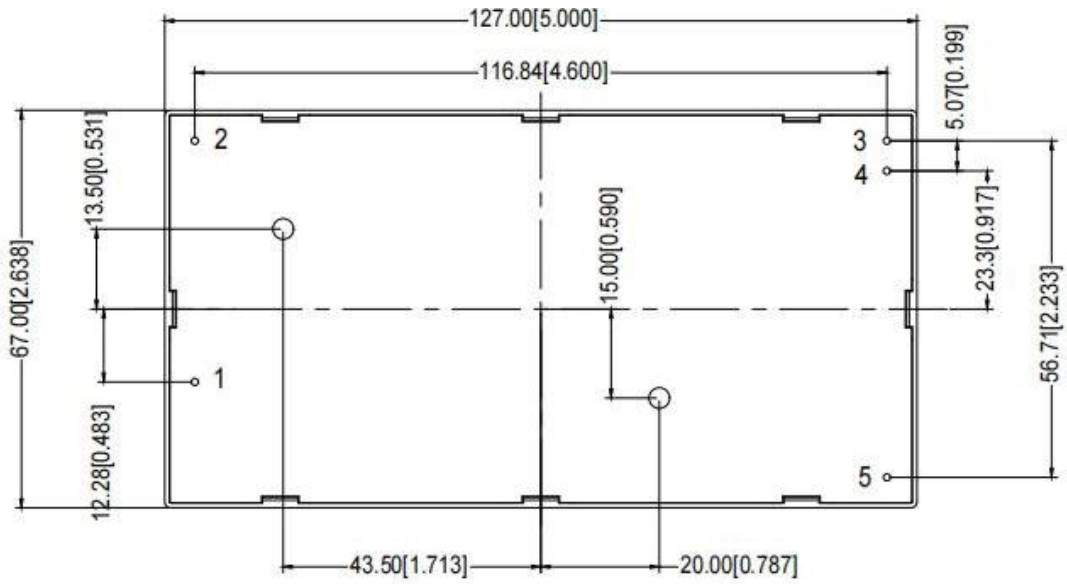
Item		Operating Condition	Min.	Typ.	Max.	Unit
Switching Frequency		--	--	65	--	KHz
Operating Temperature		--	-40	--	+70	℃
Storage Temperature		--	-40	--	+85	
Soldering Temperature		Wave-soldering	260±4℃,time: 5~10S			
		Manual-welding	360±8℃,time: 4~7S			
Relative humidity		--	10	--	90	%RH
Isolation Voltage	Input to output	≤5.0mA/1Min	4000	--	--	VAC
Insulation resistance	Input to output	500VDC	50	--	--	MΩ
Vibrate		--	10-55Hz,10G,30Min,alongX,Y,Z			
Security level		--	CLASSI			
Trouble-free time		--	MIL-HDBK-217F@25℃＞300,000H			

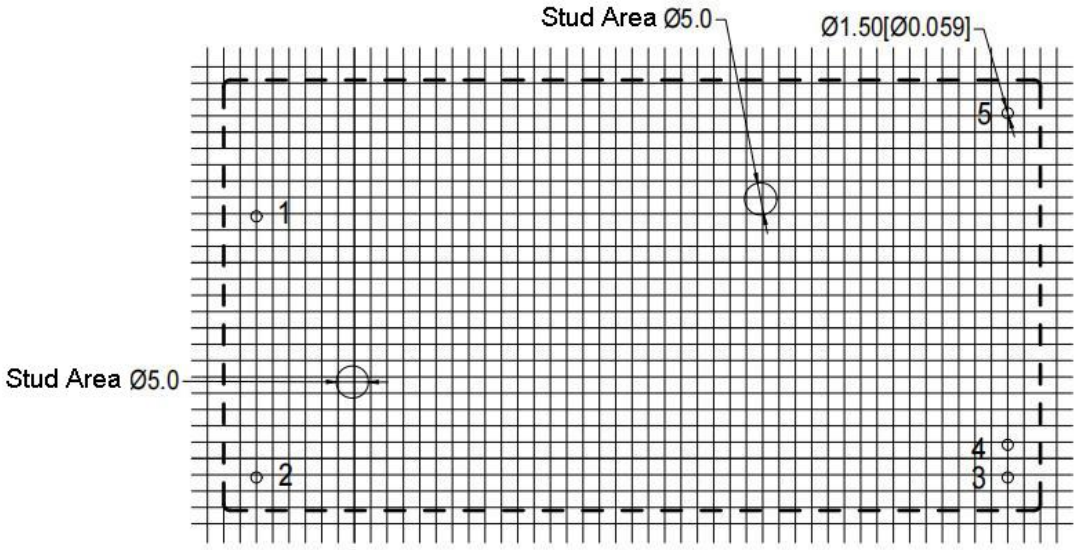
Physical Specifications

Total project	Sub project	Testing standard	Class
EMS	Electrostatic discharge	IEC/EN61000-4-2	Contact ±6KV Perf.Criteria B
	Radiation immunity	IEC/EN61000-4-3	10V/m Perf.Criteria A
	Surge immunity	IEC/EN61000-4-5	±2KV Perf.Criteria B
	Pulse group immunity	IEC/EN61000-4-4	±4KV Perf.Criteria B
	Conducted disturbance immunity	IEC/EN61000-4-	10Vr.m.s Perf.Criteria A

Dimension and Pin out Specifications







Note:
Grid distance 2.54 * 2.54mm
Size unit: mm[inch]
Terminal diameter tolerance: ±0.10mm [±0.004inch]
Unmarked tolerance: ±1.00mm [±0.039inch]
The product must be fixed with M3 screws in the harsh vibration environment
Refer to the dimensions of the fixed holes

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

.417]

Dimension

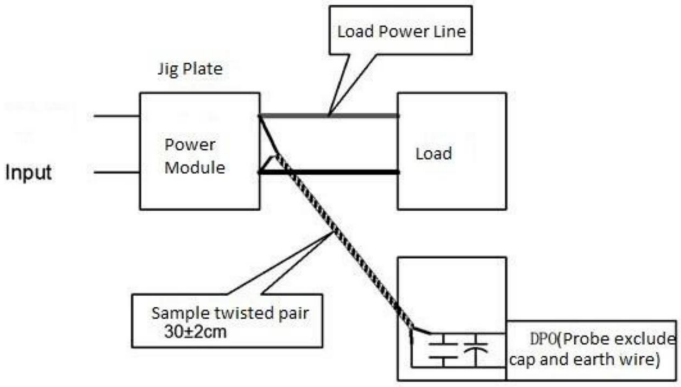
Packing code	L x W x H	
-	127.0X67.0X36.0mm	5.000X2.638X1.417inch

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

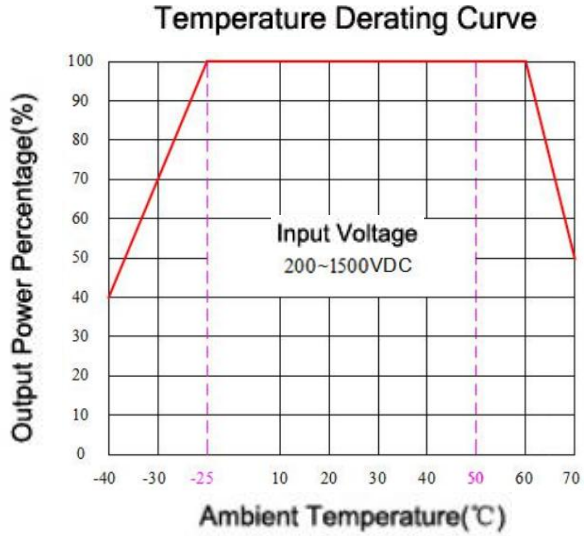
Test Method:

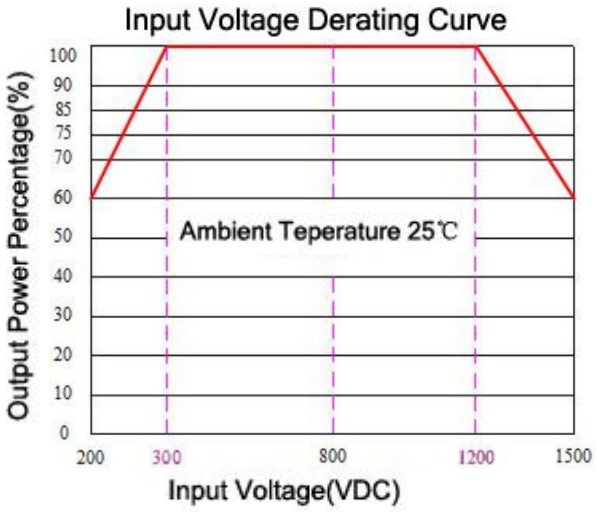
(1) 12# twisted pair to connect, Oscilloscope bandwidth set as 20MHz, 100M bandwidth probe, terminated with 0.1uF polypropylene capacitor and 10uF high frequency low resistance electrolytic capacitor in parallel, oscilloscope set as Sample pattern.

(2) 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

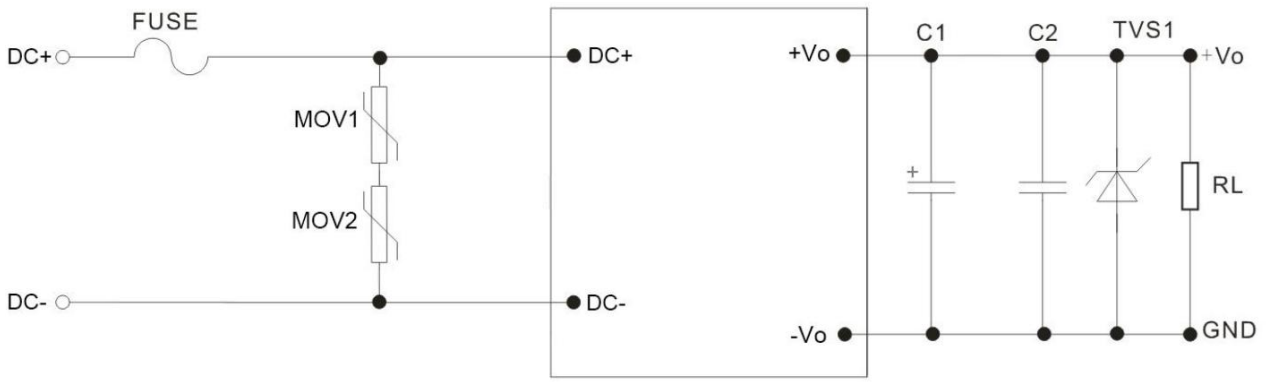




1: The input voltage is 200~300VDC/1200~1500VDC, and it needs to be used for voltage derating on the basis of the input voltage derating curve.

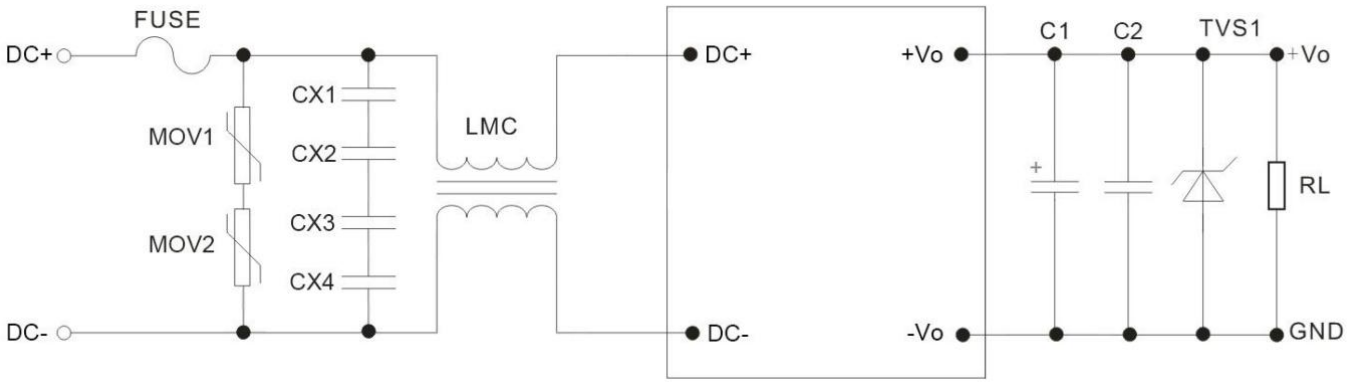
2. This product is suitable for use in a natural air cooling environment. If it is used in a closed environment, please contact our company.

Typical Application Circuit



Device Tag	Device name	Recommended device value
FUSE	Fuse	2A/1000VAC, must be connected
MOV1,MOV2	Varistor	14D152K
C1	High frequency electrolytic capacitor	10uF/50V
C2	Ceramic capacitors	1uF/50V

EMC External Recommended Circuit



Device Tag	Device name	Recommended device value
FUSE	Fuse	2A/1000VAC, must be connected
MOV1,MOV2	Varistor	14D152K
C1	High frequency electrolytic capacitor	10uF/50V
C2	Ceramic capacitors	1uF/50V
CX1,CX2,CX3,CX4	X capacitors	104K/275VAC
LMC	Common-mode inductor	7mH/1A

Note:

1.The product should be used under the specification range, otherwise it will cause permanent damage to it.
2.Product's input terminal should connect to fuse;
3.If the product operated below the minimum load request, we cannot ensure that the performance of product is in accordance with all the indexes in this manual;
4.If the product worked beyond the load range, we cannot ensure that the performance of product is in accordance with all the indexes in this manual;
5.Unless otherwise specified, data in this datasheet are tested under conditions of Ta=25℃, humidity<75% when inputting nominal voltage and outputting rated load(pure resistance load);
6.All index testing methods in this datasheet are based on our Company's corporate standards.
7.The performance indexes of the product models listed in this manual are as above, but some indexes of non-standard model products will exceed the above-mentioned requirements, please directly contact our technician for specific information;
8.We can provide customized product service;
9.The product specification may be changed at any time without prior notice.

Guangzhou Aipu Electron Technology Co., Ltd
Address: Building 4, HEDY Park, No.63, Punan Road, Huangpu Dist, Guangzhou, China.
Tel: 86-20-84206763 Fax: 86-20-84206762 HOTLINE: 400-889-8821
E-mail: sales@aipu-elec.com Website: https://www.aipupower.com

