AIPULNION[®]

New Energy DC/DC Converter BK40-600SXXW2N4

Typical Features

- Ultra-wide input voltage range 200-1200VDC(6:1)
- Input anti-reverse, under voltage protection
- Output short circuit, over-current, over-voltage protection
- Input/Output Isolation Voltage 4000VDC
- High efficiency, high reliability, low ripple
- Applied for Photovoltaic, high-voltage DC Conversions
- Operating Temperature: -30°C~+70°C
- Industrial grade design, international standard size



CE RoHS

Application Field

BK40-600SXXW2N4 Series is regulated DC-DC converters with an ultra-wide DC input of 200-1200VDC. The products feature high efficiency, high reliability. This type of power supply is widely used in renewable energy industries such as photovoltaic, power generation, energy storage, inverters and high-voltage DC conversions. The converters provide stable operating voltage to the equipment and improve the power and the load's safety performance with multiple protection when working under abnormal conditions.

Typica	Product	lict
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	Power	Output Volt	age/Current	Output Efficiency	Max. Capacitive Load	
Part No		Voltage	Current	(Input 600VDC)	(uF)	
	(W)	(V)	(mA)	%/TYP		
BK40-600S12W2N4		12	3333	83	1200	
BK40-600S15W2N4	40	15	2667	84	1000	
BK40-600S24W2N4		24	1667	85	800	

Note

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

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

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

Input Specifications							
ltem	Operating Condition	Min.	Тур.	Max.	Unit		
Input Voltage Denge		200	600	1200	VDC		
Input Voltage Range		Please refer to Input Voltage Dearting Curve at Back					
	200VDC@100% Load			250			
Input Current	600VDC@100% Load			82	mA		
	1200VDC@100% Load			43			

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Input Under-Voltage		Start	point	175		185	VDC				
Prot	ection	Releas	se point	187		197					
Input no-le	oad Current	Output	no load			0.6	mA				
External Fus	e Recommend	-	-	4A/	4A/1500VDC Slow fusing, necessary						
Output Sp	ecification										
lt	em	Operating	Condition	Min.	Тур.	Max.	Unit				
Voltage	Accuracy	0%~100% Load			±2.0	±3.0					
Minimum Load				10			1				
Line R	egulation	- Full Input voltage range			±1.0	±1.5	- %				
Load R	egulation	20%~100%	nominal load		±2.0	±3.0					
Ripple	& Noise	Full Input voltage range 20%~100% nominal load 20MHz bandwidth (peak peak value) (peak peak value) Image: Normal temperature @ output full load Normal temperature @ output full load 1000VDC Input temperature @ output full load 0%~100% Load 25%-50%-25% 50%-75%-50%			100	250	mV				
Temperatu	re Coefficient	urrent Output no load pmmend $4A/150VVDC$ Slow fur ation ation Operating Condition Min. Typ. acy 0%-100% Load ± 2.0 ad Full Input voltage range 10 on 20%-100% nominal load ± 2.0 ad (peak peak value) ± 1.0 on 20%-100% nominal load ± 2.0 ad (peak peak value) ± 0.03 ficient ± 0.03 ficient ± 0.03 ficient ± 0.03 filtemperature @ output full 2000 optime foovDC Input 10 noot 0%-10% Load optime 50%-75%-50% recurrent Full input voltage range $Eedback date courge Full input voltage range Eedback date<$			%						
Turn On	Delay Time	-			2000						
Power off	holding time		500VDC Input 6				mS				
	-	-	1000VDC Input		10						
Turn on	overshoot	0%~100)% Load			10					
-	Response oot Range	25%-50%-25%			±5.0	±6.0	%				
-	Response very time	50%-75	5%-50%			500	mS				
	over-current			≥110%Io, Burp, Self recovery							
Output Protection	over-voltage	Full input vo	oltage range		Feedback clamp limit						
	Short-circuit				Continuous @ Burp						
General S	pecification										
lt	em	Operating	Condition	Min.	Тур.	Max.	Unit				
Isolation Voltage	Input-	test 1min, leakag	je current ≤5mA	4000			VDC				
Insulation Resistance	Output	500VDC			100		MΩ				
Operating Tomporature				-30		70					
Operating Temperature		Refer to Temper		ature Derating Curve at back			°C				
Storage Temperature				-40		85					
Case Temp	perature Rise	Ta=30℃@ Output 100% load			54						
Storage	Humidity					95	%RH				
Soldering	Temperature	Wave-s	oldering		260±5℃, tim	e: 5-10S					

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New Energy DC/DC Converter CE ROHS **BK40-600SXXW2N4**



SMBJ30A

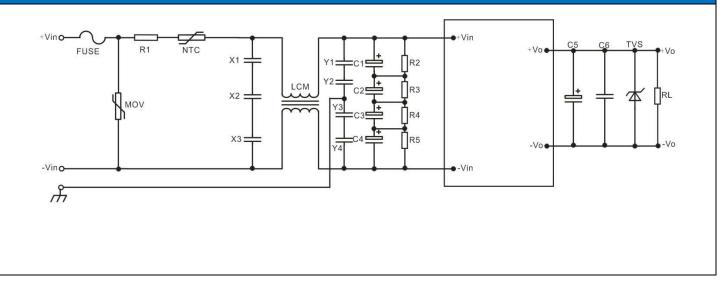
Manual-welding 400±10°C,time: 4-10S Switching Frequency --65 ---KHz ---2000 Altitude m ---MTBF SR-332@25°C>250000H ---**Physical Specification** Case Material Plastic Case Package Dimensions 89.0X63.5X25.0mm Horizontal package Product Weight 236g(TYP) Cooling method Free air convection **Typical Application Circuit** R1 FUSE NTC C5 C₆ TVS +Vin **o** +Vin +Vo +Vo RL MOV 不 -Vino ●-Vin -Vo Vc **Output Voltage** FUSE C5 TVS MOV NTC **C6** 12V 470uF/25V SMBJ18A 4A/1500DC 1uF/50V 15V 20D162K 10D-20 330uF/50V SMBJ20A necessary 1206

Note: The output filer capacitor C5 is electrolytic capacitor, recommended high frequency and low resistance electrolytic one. For capacitance and current of capacitor please refer to the manufacture's datasheet. The capacitance withstand voltage value should be higher 80%. C6 is ceramic capacitor, to remove high frequency noise. TVS is a recommended component to protect post-circuits (if converter fails)

220uF/50V

EMC External Recommended Circuit

24V



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New Energy DC/DC Converter CE ROHS ()

		<u></u>	BK4	40-600S)	XXW2	2N4		
Componen	t	Name		R	ecomr	nended Valu	Je	Note
FUSE		Fuse		Accore	ding to	actual input	current	
R1	Cu	rent limit resi	stor	6.80	2/10W I	metal film re	sistor	Necessary
NTC		Thermistor		10D-20				
MOV		Varistor			20	D162K		
N/4/0/0				ι	Jse 3pc	s:1.0µF/450	V	
X1/2/3		CBB Capacito	br		capaci	tors in series	5	Add according t
LCM	Comm	ion mode con	nductor		10	mH/0.8A		actual
Y1/Y2/Y3/Y4	1	Y capacitor		Use 4pcs 2	2.2nF/4	00V capacito	ors in series	application
C1/C2/C3/C	4 ele	ctrolytic capad	citor		100)uF/400V		
R2/R3/R4/R	5	Chip resistor			1	MΩ/1W		
enson						IRD ANGLE P		_
63.50 [2.500]	_ Bottom View	4 + 1000 	0±0.8[0.314]	ateral view ateral view - 25.00 [0.984] -		Unit:mm Printed board Grid:2.54mm General toler Pin tolerance	ance:±0.5mm	
Pin-Out	1	2	3	4	L	5	6	7
Single(S)	-Vin	+Vin	NP	N	Р	-Vo	NP	+Vo
Code						LXWXH		
W2N4		89.00X63.50X25.0mm 3.504X2				500X0.984inch		
ole& Noise Test:	(Twisted Tes	t Method 2	0MHz b	andwidth)			
Method: 12# twisted pair to co lwidth probe, termina frequency low resista s Sample pattern.	ited with 0.1uF	oolypropylene	e capacito	r and 10uF		Input —	Jig Plate	Load Power Line

(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.

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Sample twisted pair 30±2cm

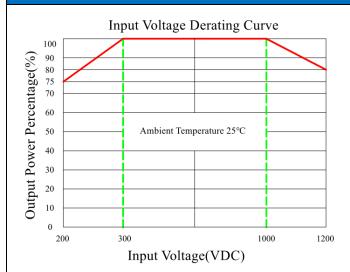
DPO(Probe exclude ap and earth wire)

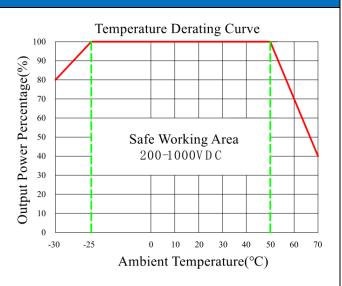
二十

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Product Characteristic Curve





Note:

1. The product should be used under the specification range, otherwise it will cause permanent damage to it.

2. Fuse is required at Input terminal.

3. If the product worked beyond the load range or below the minimum load, we cannot ensure that the performance of product is in accordance with all the indexes in this manual;

4. Unless otherwise specified, data in this datasheet should be tested under conditions of Ta=25°C, humidity<75% when inputting nominal voltage and outputting rated load(pure resistance load);

5. All index testing methods in this datasheet are based on our Company's corporate standards

6. 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, and please directly contact our technician for specific information;

7. We can provide customized product service;

8. The product specification may be changed at any time without prior notice.

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