



Typical Features

- ◆ 6:1 wide input voltage range: 250-1500VDC
- ◆ Input Anti-reverse connection, under voltage protection
- ◆ Output over current, over voltage, short circuit protection.
- ◆ Input-Output Isolation voltage: 4000VAC
- ◆ High efficiency, high reliability, low ripple and noise
- ◆ Apply for PV power generation and high voltage frequency conversion
- ◆ Working temperature: -40°C- +70°C
- ◆ Meet the altitude requirement of 5000m above sea level
- ◆ Industrial-grade technology design, international standard dimension



Application Field

BK150-800SXXGB1N6 series -- 250-1500VDC ultra-high voltage input high-efficiency and high-reliability DC-DC switching regulated power supply module, can be widely used in photovoltaic power generation and high voltage frequency conversion occasions to provide a stable working voltage for load equipment, and its own multiple protection functions can improve the safety performance of the power supply and its load in the case of abnormal operation of the module power supply. When the product is used in the environment with harsh electromagnetic compatibility, it must be implemented with reference to the application circuit.

Typical Product List

Part No	Output Power (W)	Output voltage/current		Output Efficiency %/TYP	Maxi. Capacitive Load (uF)
		Voltage (V)	Current (m A)		
		BK150-800S24GB1N6	150	24	6250
BK150-800S28GB1N6	28	5360		89	2000

Note 1: The typical output efficiency is based on that product is full loaded and burned-in after half an hour.

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

Input Specification

Item	Operating Condition	Min.	Typ.	Max.	Unit
Input Voltage Range	--	200	800	1500	VDC
		Relation for input voltage and load could refer to Input Voltage Derating Curve at back			
Input Current	250VDC @75% load	/	/	1000	mA
	800VDC @100% load	/	/	400	
	1500VDC @100% load	/	/	300	
Input under voltage Protection	Protection start	150	--	220	VDC
	Protection release	160	--	250	

Input no load current	output no load	--	--	--	mA
Recommended value of external fuse	4A/1500VDC slow fusing, necessary				

Output Specification

Item	Operating Condition	Min.	Typ.	Max.	Unit	
Voltage Accuracy	0%-100% load	--	±2.0	±3.0	%	
Minimum Load	Full input nominal voltage	10	--	--		
Line regulation		--	±1.0	±1.5		
Load regulation	20%-100% rated load	--	±2.0	±3.0		
Ripple & Noise	20MHz bandwidth (Peak-Peak)	--	--	300	mV	
Temperature Coefficient	--	--	±0.03	--	%	
Startup Delay Time	Normal temperature@ output full load		3000		mS	
Power off holding Time	Normal temperature@ output full load	800VDC I/P	--	50		--
		1500VDC I/P	--	50		--
Startup overshoot	0%~100% load	--	--	10	%	
Dynamic Response overshoot range	25%-50%-25%	--	±5.0	±6.0		
Dynamic Response recovery time	50%-75%-50%	--	--	500		mS
O/P Protection	Over current	≥110% Io Hiccup, self recovery				
	Over voltage	Full input voltage range Feedback clamp limit				
	Short circuit	Continuous short circuit protection @hiccup mode				

General Specification

Item	Operating Condition	Min.	Typ.	Max.	Unit
Isolation Voltage	I/P-O/P Test 1min, leakage currents≤5.0mA	4000	-	-	VAC
Insulation resistance	I/P-O/P 500VDC	--	100	-	MΩ
Operating Temperature	--	-40	--	+70	°C
	Derating according to "Derating curve" at back				
Storage Temperature	--	-40	--	+85	
Temperature rise of Case	Ta=30°C @ output 100% load	--	54	--	
Relative humidity	-	--	-	95	%RH

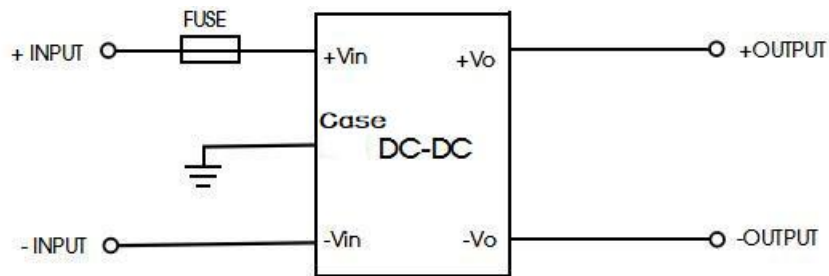
Guangzhou Aipu Electron Technology Co., Ltd

Soldering Temperature	Wave-soldering	260±5℃, time: 5-10S			
	Manual-welding	400±10℃, time: 4-10S			
Switching Frequency	-	-	65	-	KHz
Altitude	--	--	--	2000	m
MTBF	--	SR-332@25℃ > 250000H			

Physical Specifications

Case Material		Metal+ Plastic case			
Dimension	Horizontal package	168.0X111.2X42.5mm			
Weight		945g			
Cooling Method		Free air convection			

EMC Recommended Circuit Design Reference



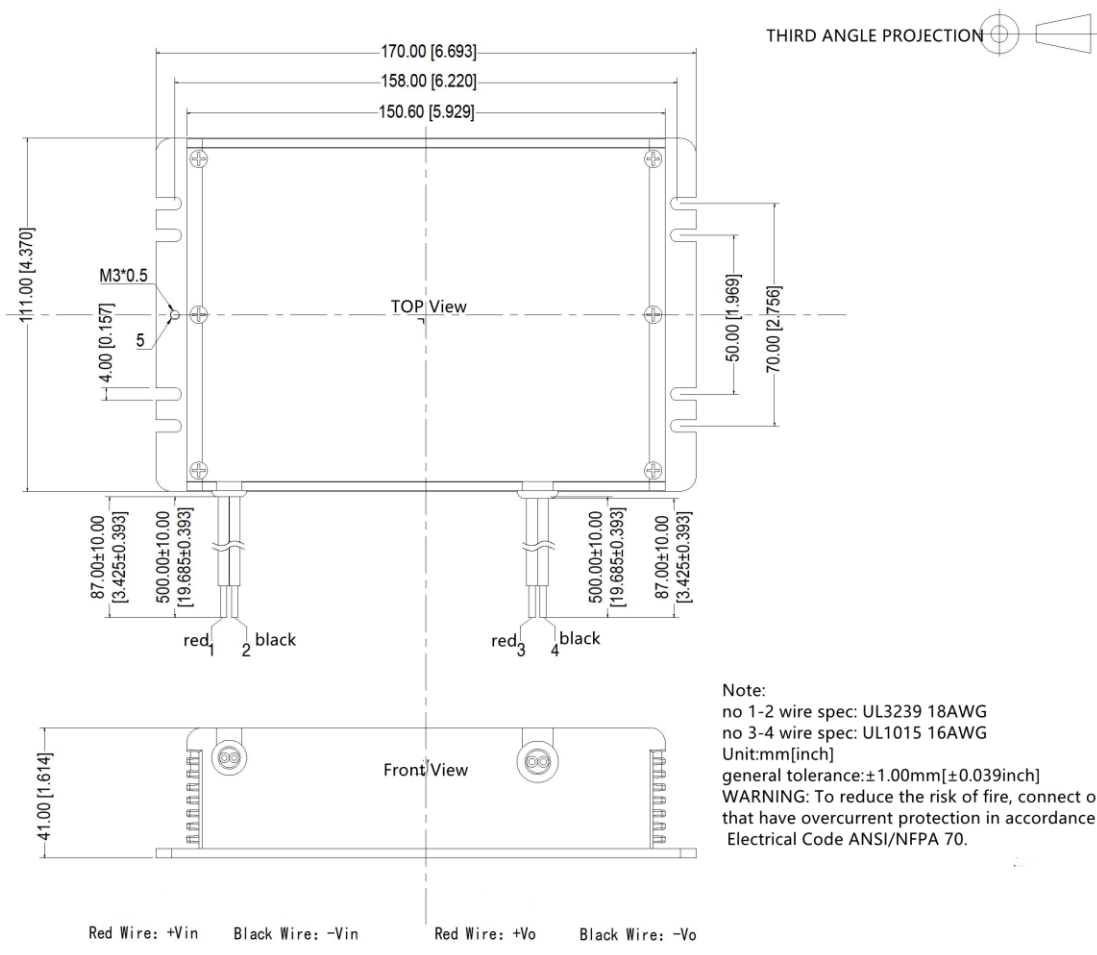
Output Voltage	FUSE
28V	4A/1500VDC
24V	necessary

Components	USE	Recommended Value	Note
FUSE	Fusing when converter is abnormal, cut off protection	According to customer's choose for actual input current	Necessary

EMC Characteristics

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

Dimension and Pin-Function



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

Dimension

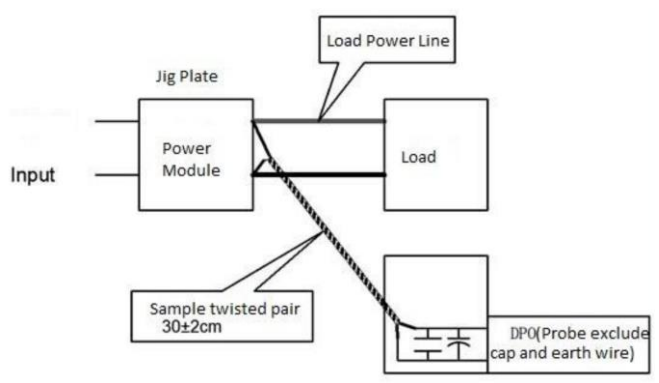
Packing code	L x W x H	
GB1N6	168.0X111.2X42.5mm	6.614X4.378X1.673inch

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

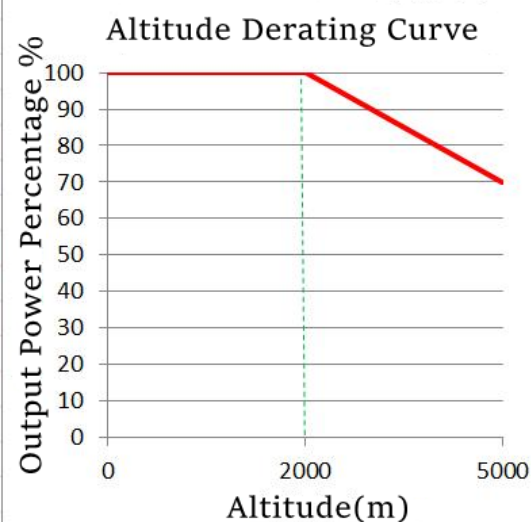
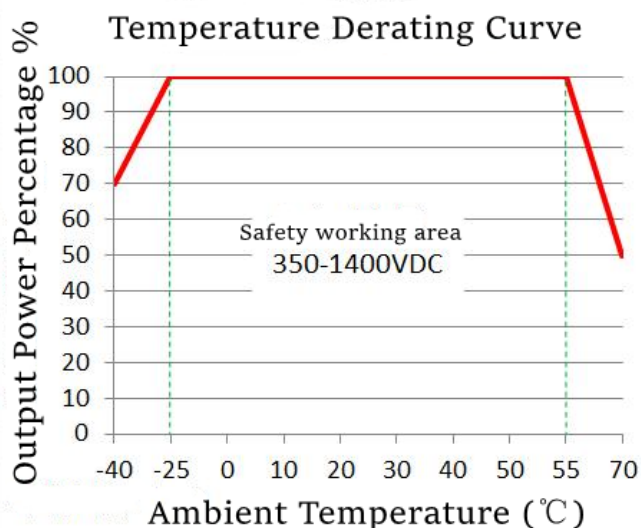
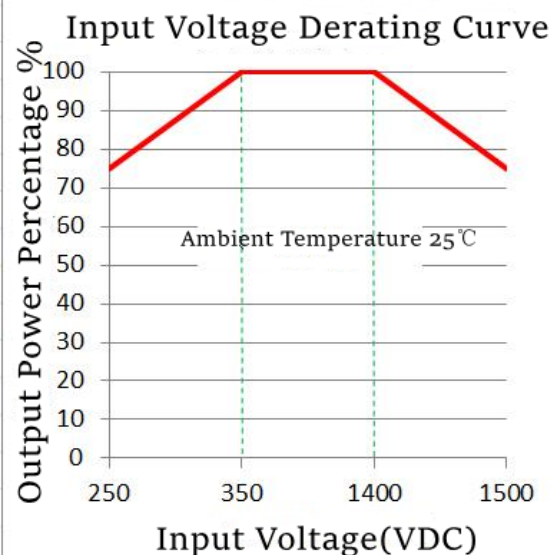
Test Method:

(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



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°C**, **humidity<75%** when inputting nominal voltage and outputting rated load(pure resistance load);