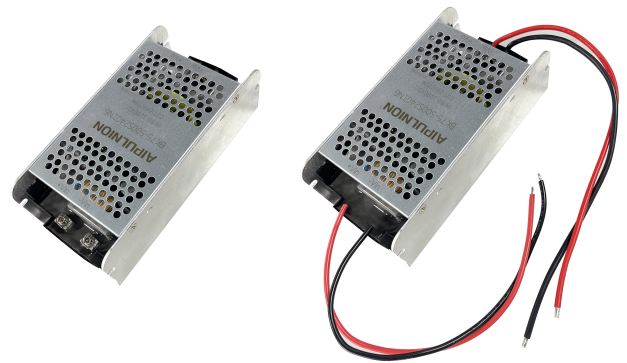


### Typical Features

- ◆ Wide input voltage range 80-1000VDC
- ◆ No load power consumption  $\leq 1W$
- ◆ Efficiency 87% (Typ.)
- ◆ Input Anti-reverse connection protection
- ◆ Output over-voltage, over-current, short circuit protections
- ◆ Operating temperature from  $-40^{\circ}C$  to  $+85^{\circ}C$
- ◆ Isolation voltage 4000VAC
- ◆ Transient output power 120W (3S)
- ◆ Input voltage 1100VDC Max (transient, duration 3S)
- ◆ OVC II
- ◆ Pollution degree 2
- ◆ Altitude during operation 3000m Max
- ◆ Compliant with IEC/EN62477-1



Please read the datasheet before using the converter

### Application Field

**BK75-500SXXG(A)1N6 Series** ----- Small size, high efficiency safety isolated DC/DC power supplies with ultra-high input voltage and wide range of 80-1000VDC, high efficiency, high reliability and compliance with IEC/EN62477-1. This series of products can be widely used in the fields of electricity power, instrumentation, solar & home energy storage, etc. The multiple protection functions can upgrade the safety performance and protect the load when the input power supply operates under abnormal condition.

### Typical Product List

Certificate	Part No.	Output Specifications			Max Capacitive Load	Ripple & Noise 20MHz	Efficiency @500VDC (Typ.)
		Power	Voltage	Current			
		(W)	Vo (V)	Io (mA)			
TUV&CE	BK75-500S12G(A)1N6	75	12	6250	3000	300	87
TUV&CE	BK75-500S15G(A)1N6	75	15	5000	3000	300	87
TUV&CE	BK75-500S24G(A)1N6	75	24	3125	3000	300	89
TUV&CE	BK75-500S28G(A)1N6	75	28	2679	2000	300	89
TUV&CE	BK75-500S32G(A)1N6	75	32	2344	1500	350	89
TUV&CE	BK75-500S35G(A)1N6	75	35	2143	1500	350	89

Note - All parts have a derivative model, series No. BK75-500SXXGA1N6, which input and output include lead wires, all the other performances are the same as BK75-500SXXG1N6.

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 (% Typ.) 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 and noise are tested by the twisted pair method. For details understood, please refer to the following Ripple & Noise Test Instructions.

Input Specifications						
Item	Operating Condition		Min.	Typ.	Max.	Unit
Input Voltage Range	DC Input		80	500	1000	VDC
Input Current	150VDC		-	-	0.70	A
	750VDC		-	-	0.15	
Surge Current	1000VDC		-	-	150	
Input under-voltage Protection	Start protection		20	-	70	VDC
	Recovery		30	-	80	
Hot Plug	-		N/A			
Remote Control	-		N/A			
Recommended value of external fuse	-		4A/Rated voltage >Max input Volt. (Necessary)			

Output Specifications						
Item	Operating Condition		Min.	Typ.	Max.	Unit
Voltage Accuracy	Full input voltage range, any load	Vo	-	±2.0	-	%
Line regulation	Rated load	Vo	-	±1.0	-	
Load regulation	Nominal input voltage, 0%-100% load	Vo	-	±2.0	-	
Minimum Load	Single Output		0	-	-	%
Turn-on Delay Time	Nominal input voltage (full load)		-	2000	-	mS
Holding Up Time	Input 150VDC (full load)		-	5	-	
	Input 750VDC (full load)		-	20	-	
Dynamic Response	Overshoot range	25%~50%~25%	-5.0	-	+5.0	%
	Recovery time	50%~75%~50%	-5.0	-	+5.0	mS
Output Overshoot	Full input voltage range		≤10%Vo			%
Short Circuit Protection			Self-recovery after short circuit is removed			Hiccup
Drift Coefficient	-		-	±0.02%	-	%/°C
Ripple & Noise	20MHz bandwidth (Peak-Peak)		-	-	350	mV
Over Current Protection	Nominal input voltage		≥110% Io, self-recovery			Hiccup
Over Voltage Protection	Output 12VDC		≤20			VDC
	Output 15VDC		≤23			
	Output 24VDC		≤32			
	Output 28VDC		≤35			
	Output 32VDC		≤40			
	Output 35VDC		≤45			

Over Temperature Protection	Start protection	60	-	75	°C
	Recovery	55	-	70	

**General Specifications**

Item	Operating Condition	Min.	Typ.	Max.	Unit	
Switching Frequency	-	-	65	-	KHz	
Operating Temperature	Refer to the temperature derating curve	-40	--	+85	°C	
Storage Temperature	-	-40	--	+85	°C	
Soldering Temperature	Wave soldering	260±4°C, time 5-10S				
	Manual soldering	360±8°C, time 4-7S				
Storage Humidity	-	-	-	95	%RH	
Isolation Voltage	I/P-O/P	Leakage current ≤10.0mA/1Min		4000	-	VAC
	Input-PE	Leakage current ≤10.0mA/1Min		4000	-	
	Output-PE	Leakage current ≤5.0mA/1Min		2000	-	
Insulation resistance	I/P-O/P	@500VDC		100	-	MΩ
	Input-PE			100	-	
	Output-PE			100	-	
Vibration	-	10-55Hz, 10G, 30Min, along X, Y, Z				
Safety Standard	-	IEC/EN62477-1				
MTBF	MIL-HDBK-217F @ 25°C	> 300,000 Hours				

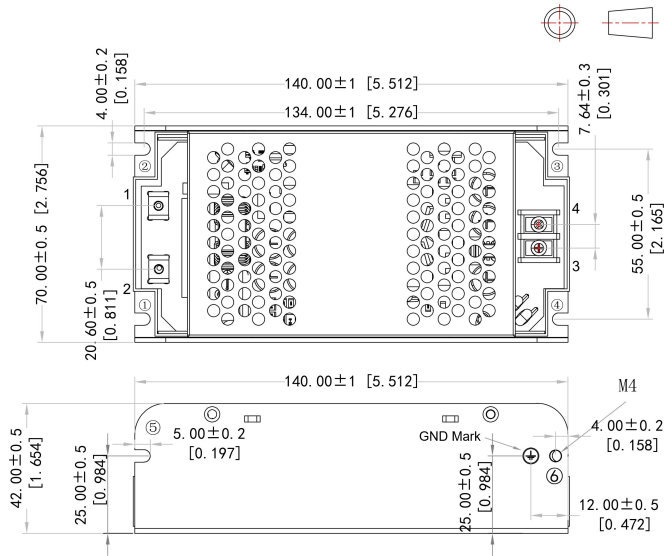
**Physical Characteristics**

Case Material		Metal
Dimensions	-	140.0X70.0X42.0 mm
Weight		450g (TYP)
Cooling Method		Nature air

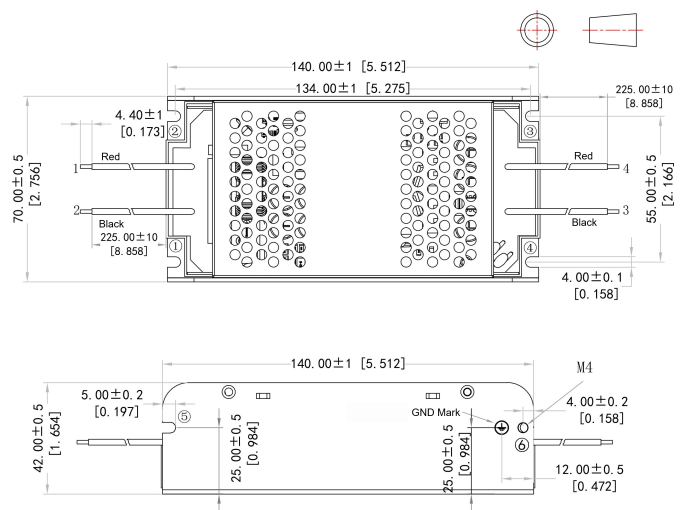
**EMC Performances**

Total Item	Sub Item	Test Standard	Performance/Class
EMC	EMI	CE	CISPR32/EN55032 CLASS A @100% load CLASS B @60% load
		RE	CISPR32/EN55032 CLASS A @100% load CLASS B @60% load
	EMS	ESD	IEC/EN61000-4-2 Contact ±6KV, Air ±8KV Perf. Criteria A
		RS	IEC/EN61000-4-3 10V/m Perf. Criteria A
		Surge	IEC/EN61000-4-5 Line to line ±1KV, line to PE ±2KV Perf. Criteria B
		EFT	IEC/EN61000-4-4 ±4KV Perf. Criteria B
		CS	IEC/EN61000-4-6 10V r.m.s Perf. Criteria A

**Mechanical Dimensions**



**BK75-500SXXG1N6**

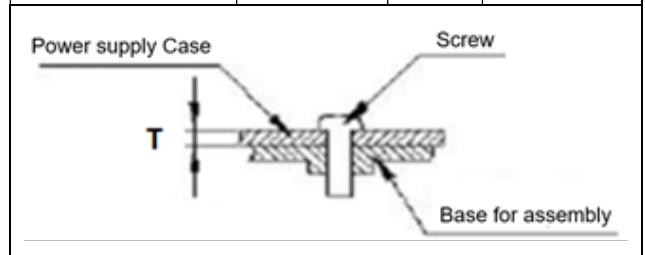


**BK75-500SXXGA1N6**

**Note:**

- Unit: mm
- Input lead wire 18AWG Min, Temperature grade  $\geq 200^{\circ}\text{C}$  (BK75-500SXXGA1N6)
- Output lead wire 14AWG Min, Temperature grade  $\geq 105^{\circ}\text{C}$  (BK75-500SXXGA1N6)
- Screwing torque 0.4N.m Max (①-⑤), 1.2N.m Max (⑥)
- All the screwing holes can be connected to PE (⊕)

Screwing location	Screw size	T	Torque(max)
①~⑤	M3	1.5mm	0.4N·m
⑥	M4	1.5mm	1.2N·m



Packaging code	Dimensions L x W x H	
G	140.0X70.0X42.0 mm	5.512X2.756X1.654 inch

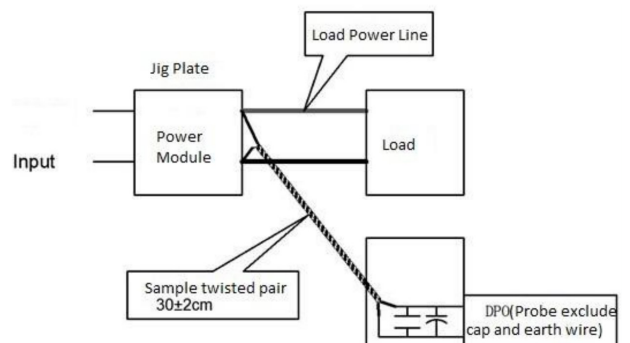
**Terminals Definition**

No.(Color)	1 (RED)	2 (BLACK)	3 (BLACK)	4 (RED)	Mounting Hole①-⑥
Single(S)	+Vin	-Vin	-Vout	+Vout	PE(Ground) ⊕

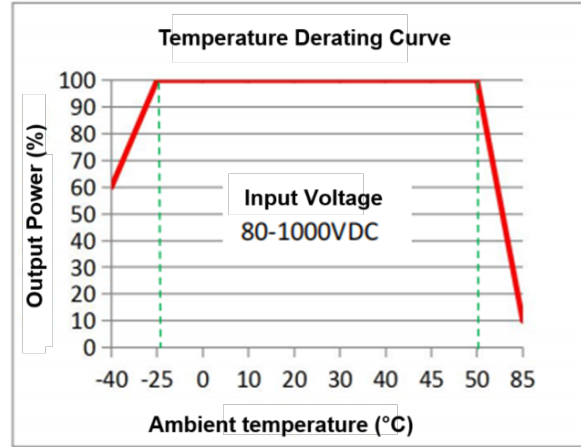
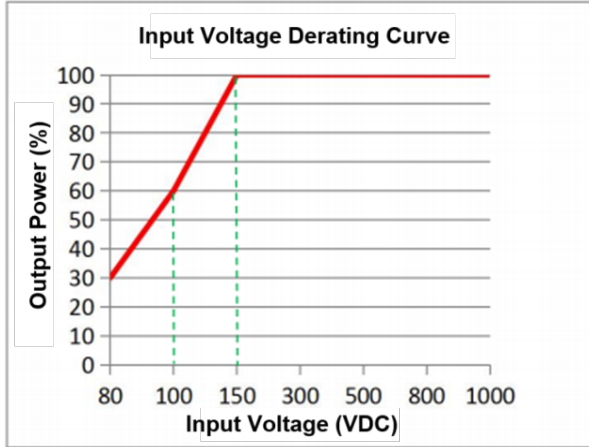
**Ripple & Noise Test Instruction (Twisted Pair Method, 20MHz bandwidth)**

1) The Ripple & noise test need 12# twisted pair cables, an oscilloscope which bandwidth should be set to 20MHz, 0.1uF polypropylene capacitor and 10uF high-frequency low-resistance electrolytic capacitor are connected in parallel with the probes (100M bandwidth). The oscilloscope should be set at the Sample Mode.

2) Please refer to the test diagram on the right. The power supply output connects to the electronic load by the jig with cables which size should be defined according to the output current value. The twisted pair (length 30cm±2 cm) should be connected in parallel with the load, the location is as close as possible to the output pins or terminals. The test can be started after input power on.



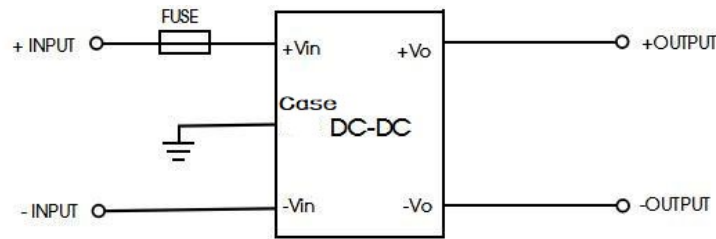
**Product Performance Curves**



Note 1- The output power should be derated based on the input voltage derating curve at 80~150VDC.

Note 2 - This product should operate at a natural air condition, please contact us if it need be used at a closed space.

**Typical Application Circuit**



Component Code	Component	Recommended Value
FUSE	Time-delay fuse	4A/Rated voltage >Max input Volt. (Necessary)

**Warning & Notice**

- The products should be used according to the specifications in this datasheet, otherwise it could be permanently damaged.
- Please don't repair the failed converter.
- The converter must be connected to GND before using with power on, grounding safety standard should be met.
- The converter case is not insulated, electric shock proof should be done at customer system.
- The housing inside which the converter will be fixed should be flameproof for fire risk.
- A fuse should be connected at input.
- The product performance in this datasheet cannot be guaranteed if it works under over-load condition.
- Unless otherwise specified, all values or indicators in this datasheet are tested at Ta=25°C, humidity<75%RH, rated input voltage and rated load.
- All values or indicators in this datasheet had been tested based on Aipupower test specifications.
- The specifications are specially for the parts listed in this datasheet, any other non-standard model performances could be out of the specifications. Please contact our technician for specific requirements.
- Aipupower can provide customization service.

**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