

Typical Features	
◆ Wide input voltage range: 90-528VAC/127-746VDC	
◆ No load power consumption ≤ 0.3W(230VAC)	
◆ Transfer Efficiency 81%(TYP.) (230VAC)	
◆ Switching Frequency: 65KHz	
◆ Protections: short circuit, over current	
◆ Isolation voltage: 4000Vac	
◆ Meet IEC62368/UL62368/EN62368 test standard	
◆ PCB mounting	

Application Field

DA10-300SXXG9N4 Series----- a compact size, high efficient power module offered by Aipu. It features ultra wide input voltage range, AC and DC dual-use, low ripple, low temperature rise, low power consumption, high efficiency, high reliability, safer isolation, good EMC performance. EMC and Safety standard meet international IEC62368, UL62368, EN62368. These series have important application for power, industry, instrument and smart home field. For harsh EMC environment, the application circuit in the datasheet is strongly recommended.

Typical Product List

Certificate	Part No.	Output Specifications			Max. Capacitive Load	Ripple & Noise 20MHz (Max)	Efficiency@ Full Load, 220Vac (Typical)
		Power	Voltage	Current			
		(W)	Vo(V)	Io(mA)			
-	DA10-300S05G9N4	10	5	2000	4000	80	77
-	DA10-300S12G9N4	10	12	833	2000	100	81
-	DA10-300S24G9N4	10	24	417	1000	200	82

Note 1: The ripple & noise test need to carry out with external circuit.

Note 2: The typical value of output efficiency is based on module is full loaded and burned-in after half an hour.

Note 3: "*" are models being developing.

Note 4: Due to the instrument error of the test equipment, the minimum efficiency is defined as -2% of the typical value

Note 5: Ripple & Noise is tested by twisted pair method, details please refer to Ripple & Noise test at back.

Input Specifications

Item	Operating Condition	Min	Typ.	Max	Unit
Input Voltage Range	AC input	90	230	528	VAC
	DC input	127	325	746	VDC
Input Frequency range	-	47	50	63	Hz
Input Current	115VAC	/	/	0.30	A
	230VAC	/	/	0.20	

Surge Current	115VAC	/	/	10	
	230VAC	/	/	17	
No Load Power Consumption	Input 230VAC	-	-	0.3	W
	Input 480VAC	-	-	0.5	
Leakage Current	-	0.25mA TYP/230VAC/50Hz			
Recommended External Input Fuse	-	2.0A/500VAC slow fusing(necessary)			
Hot Plug	-	Unavailable			
Remote Control Terminal	-	Unavailable			

Output Specifications

Item	Operating Condition	Min	Typ.	Max	Unit	
Voltage Accuracy	Full input voltage range, any load	-	±1.0	±2.0	%	
Line Regulation	Nominal load	-		±0.5	%	
Load Regulation	Nominal input voltage, 20%~100% load	-	-	±1.0	%	
Minimum Load	Single Output	0	-	-	%	
Start up Delay Time	Input 230VAC (full load)	-	500	-	mS	
Power-off Holding Time	Input 400VAC (full load)	-	100	-	mS	
Dynamic Response	Overshoot range	25%~50%~25%	-5.0	-	+5.0	%
	Recovery time	50%~75%~50%	-	-	+5.0	mS
Output Overshoot	Full input voltage range	≤10%Vo			%	
Short circuit Protection		Continuous, self-recovery			Hiccup	
Temperature Drift	-	-	±0.03%	-	%/°C	
Over Current Protection	Full input voltage range	≥130% Io, self-recovery			Hiccup	

General Specifications

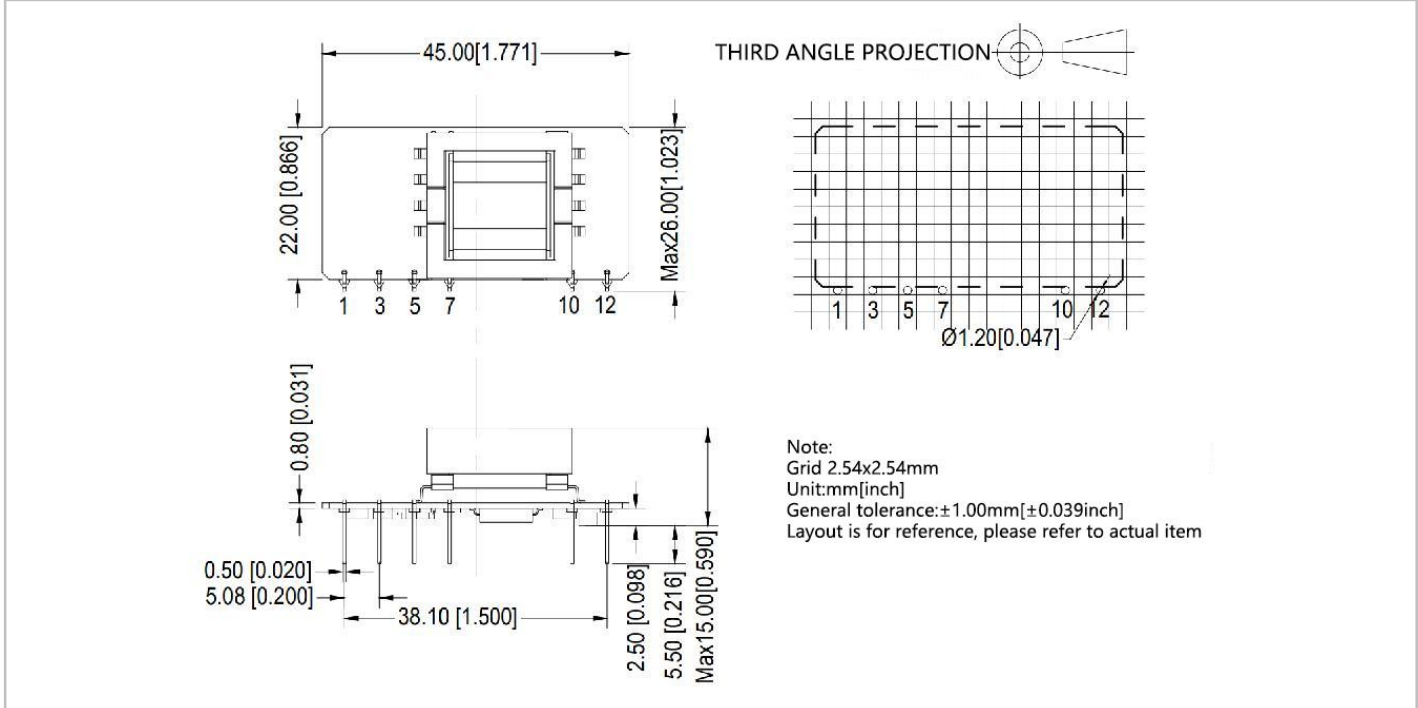
Item	Operating Condition	Min	Typ.	Max	Unit
Switching Frequency	-	60	65	70	KHz
Operating Temperature	-	-40	-	+85	°C
	Derating according to Temperature Derating Curve(Product Characteristic Curve)				
Storage Temperature	-	-40	-	+105	
Soldering Temperature	Wave soldering	260±4°C, time 5-10S			
	Manual soldering	360±8°C, time 4-7S			
Relative Humidity	-	10	-	90	%RH
Isolation Voltage	Input-Output Test 1min, leakage current≤5mA	4000	-	-	VAC

Insulation Resistance	Input-Output	@ DC500V	100	-	-	MΩ
Vibration		-	10-55Hz, 10G, 30Min, along X, Y, Z			
MTBF		-	MIL-HDBK-217F@25°C > 300,000H			

EMC Characteristics

Total Item	Sub Item	Test Standard	Class	
EMC	EMI	CE	CISPR22/EN55032 CLASS B (See Recommended Circuit on photo 3)	
		RE	CISPR22/EN55032 CLASS B (See Recommended Circuit on photo 3)	
	EMS	ESD	IEC/EN61000-4-2	±4KV / ±8KV Perf.Criteria B(See Recommended Circuit on photo 2)
		RS	IEC/EN61000-4-3	10V/m Perf.Criteria B (See Recommended Circuit on photo 3)
			IEC/EN61000-4-4	±2KV Perf.Criteria B (See Recommended Circuit on photo 2)
		EFT	IEC/EN61000-4-4	±4KV Perf.Criteria B (See Recommended Circuit on photo 3)
			IEC/EN61000-4-5	±1KV Perf.Criteria B (See Recommended Circuit on photo 2)
		Surge	IEC/EN61000-4-5	±2KV ±4KV Perf.Criteria B (See Recommended Circuit on photo 3)
			CS	IEC/EN61000-4-6

Dimension



Packing Code	L x W x H	
-	45.0X22.0X16.0mm	1.771X0.866X0.6299inch

Pin Specification

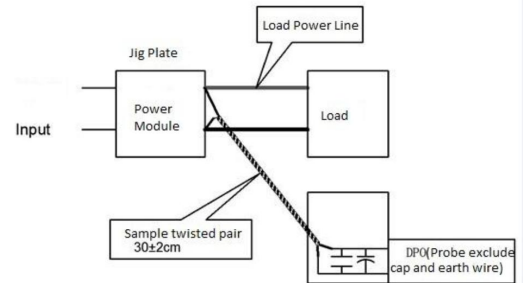
Pin	1	2	3	4	5	6
Single(S)	AC(N)	AC(L)	+V(CAP)	-V(CAP)	-Vo	+Vo

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

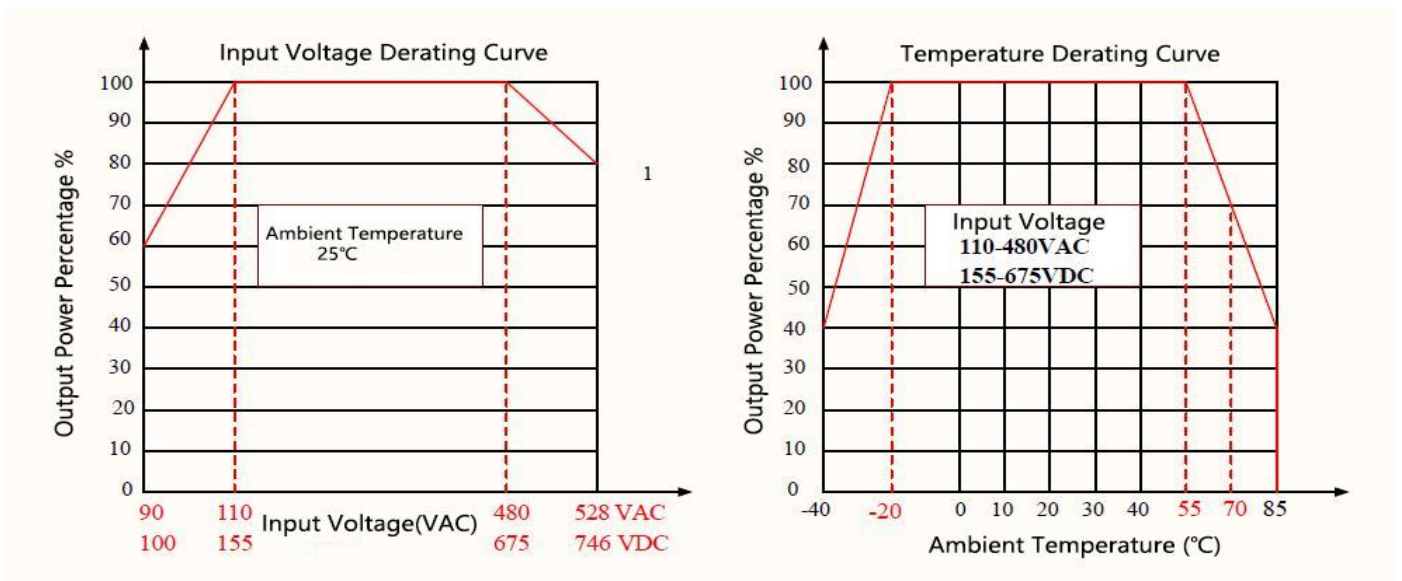
Test Method:

(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: Input Voltage should be derated based on Input voltage derating curve when it is 90~110VAC/480~528VAC/100~155VDC/675~746VDC.

Note 2: Our product is suitable to use under natural air cooling environment, if use it under closed condition, please contact with us.

Typical Application Circuit and EMC Recommended Circuit

1. Typical Application Circuit

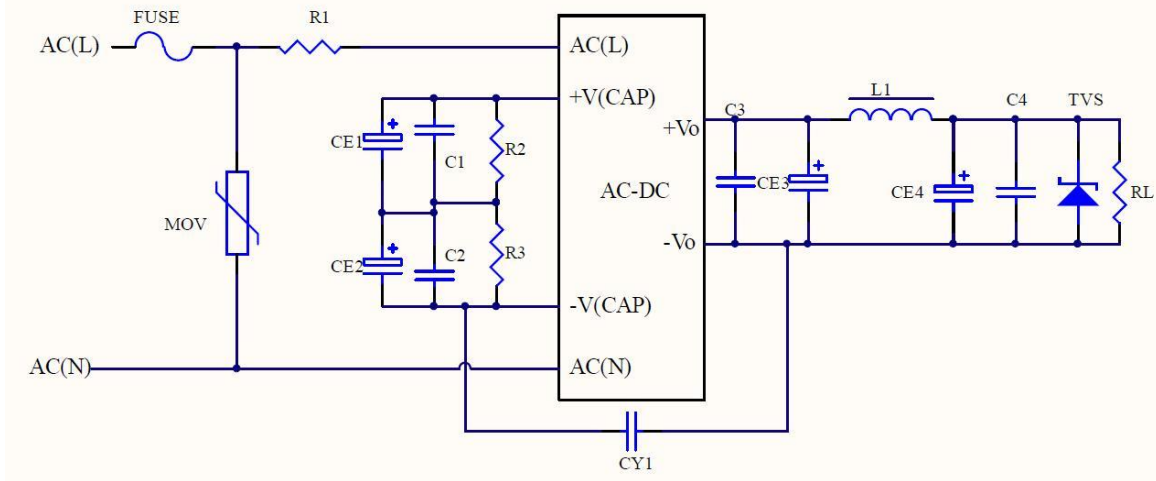


Photo 2

Recommended Specs:

Products Number	CE3,CE4(necessary)	C1, C2	C3,C4	L1(necessary)	TVS1
DA10-300S05G9N4	1000uF/10V	0.1uF/630V	0.1uF/50V	2.2uF/5A	SMBJ7.0A
DA10-300S12G9N4	470uF/16V			5.6uF/3A	SMBJ20A
*DA10-300S24G9N4	330uF/35V			5.6uF/3A	SMBJ30A

Note:

- 1) FUSE, recommended specification is 2A/500Vac, slow break (necessary).
- 2) MOV is a varistor, 14D102K (necessary).
- 3) R1 is a metal sheath/cement resistor, 20Ω/1W (required).
- 4) CE1 and CE2 are electrolytic capacitors, 47uF/450V (required).
- 5) R1 and R2 are discharge resistors, 3M/1206. (required)
- 6) CY1 is Y capacitor, 470pF/500V (necessary).

2. EMC recommended circuit

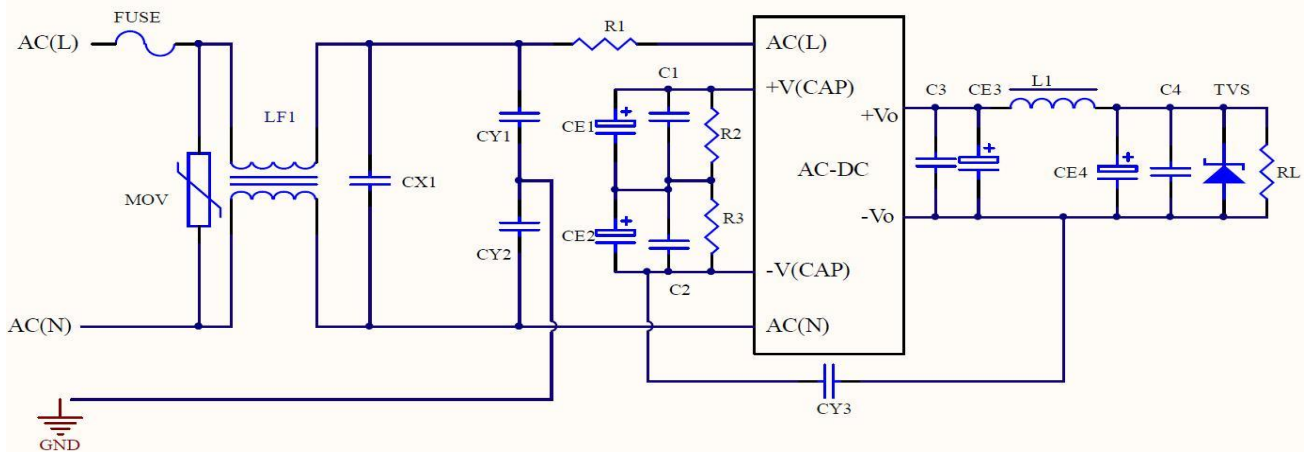


Photo 3

Recommended parameters:

- 1) FUSE, recommended specification is 2A/500Vac, slow break (required).
- 2) MOV is a varistor, 14D102K (required).
- 3) R1 is a metal sheath/cement resistor, 20Ω/1W (required).
- 4) CY1, CY2, and CY3 are Y capacitors, 470pF/500VAC (required).
- 5) CX1 is X capacitor, 0.33uF/530VAC (required).
- 6) LF1 is a common mode inductor, 15mH/0.5A (must be connected).

Note: The recommended values of other components refer to the typical application circuit according to the actual application.

Note 1:

1. The product should be used within the specification range, or it will cause permanent damage to it;
2. The input terminal should connect to fuse;
3. If the product is worked under the minimum requested load, the product performance cannot be guaranteed to comply with all parameters in the datasheet;
4. If the product is not operated within the required load range, the product performance cannot be guaranteed to comply with all parameters in the datasheet;
5. Unless otherwise specified, parameters in this datasheet were measured under the conditions of **Ta=25°C**, **humidity<75%** with nominal input voltage and rated output 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 product customization service,
9. Specifications are subject to change without prior notice, please follow up with our website for newest manual.

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: www.aipupower.com