

Typical Features

- ◆ Wide input voltage range 90~265VAC/120~375VDC
- ◆ Transfer efficiency 85% (TYP)
- ◆ Switching frequency: 65KHz (TYP)
- ◆ Protections: over current, short circuit, over temperature, self-recovery
- ◆ Input- output high isolation
- ◆ PCB Mounting
- ◆ Metal case


Application Field

UA12-220SXXD3A Series-----a compact size, high power density, high efficiency converter offered by Aipu.

It features universal input voltage range, taking both DC and AC input, low ripple, low temperature rise, low power consumption, high efficiency, high reliability, safer isolation performance.

It is widely used in power, industrial, office, smart home, etc.

Please refer to this datasheet when module being used in a bad EMC environment.

Product Named Method

Part No.	Input Voltage Range	Output Specification				Max. Capacitive Load	Ripple & Noise 20MHz	Efficiency @full load 220Vac (TYP)
		Voltage 1	Current 1	Voltage 2	Current 2			
		+Vo (V)	Io1 (mA)	-Vo (V)	Io2 (mA)			
UA12-220S05D3A	90~265VAC 120~375VDC	+5	2000			2000	80	79%
UA12-220S12D3A	90~265VAC 120~375VDC	+12	1000			1000	80	83%
UA12-220S15D3A	90~265VAC 120~375VDC	+15	800			680	80	83%
UA12-220S24D3A	90~265VAC 120~375VDC	+24	500			470	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: The typical value of output efficiency is based on product is full loaded and burned-in after half an hour.

Note 3: Fluctuation range of full load efficiency (% , TYP) is $\pm 2\%$. Full load efficiency=Total output power / module's Input power.

Test Condition: Unless otherwise specified, data in the datasheet should be tested under the conditions of inputting nominal voltage, pure resistance rated load and Ta=25°C.

Input Specifications	MIN (Vac)	Nom (Vac)	MAX (Vac)	Notes
Input Voltage	90 (120Vdc)	220	265 (380Vdc)	

Input Frequency Range	47	50	63
Standby Power Consumption	0.1 W(MAX)		
Short Circuit Consumption	1.0W(TYP)		
Input Current	440mA (MAX) @Vin=110Vac		280mA (MAX) @Vin=220Vac
Surge Current	15A (MAX) @Vin=110Vac		30A (MAX) @Vin=220Vac

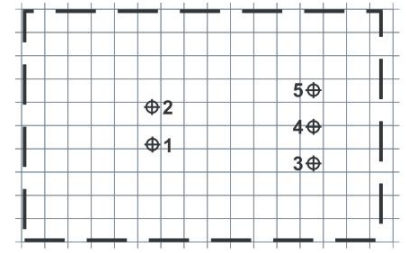
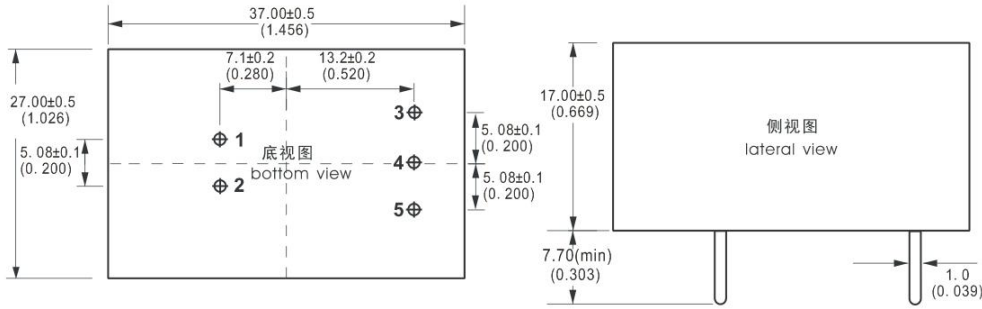
Output Specifications

Voltage Accuracy	±2% MAX		
Line Regulation	Nominal load, full voltage range	Vo1	±0.2%
Load Regulation	20% ~ 100% rated load	Vo1	±0.5%
Minimum Load	Balanced load output		0
Ripple & Noise	20MHz BM full load		
	Vo≤5.0V, ≤80mVp-p	Vo≥48V, ≤180mVp-p	Other≤120 mVp-p
Turn-on delay time	Nominal input voltage, full load	≤2000mS	
Power-off Holding Time	Nominal input voltage, full load	20ms(typ)	
Output Overshoot	-	≤10%Vo	
Dynamic Response	25%~50%~25% 50%~75%~50%	Overshoot range (%): ≤±5%; Recovery time(mS) ≤5.0mS:	
Over load /Over current Protection	>120%Po/Io	Output turn-off	Hiccup

General Specifications

Switching Frequency	-	-	65KHz(TYP)
Operating Temperature	Nominal input voltage, full load	-	-25℃ ~ +65℃
Temperature Drift	Nominal input voltage, full load	-	0.03%/℃
Storage Temperature	-	-	-40℃ ~ +85℃
Max. Case Temperature	Nominal input voltage, full load	-	+95℃
Relative Humidity	-	-	10%~90%
Class of Case Material	-	-	Metal Case
Isolation Voltage	Input-output 2500Vac ≤ 5.0mA/1min;		
MTBF	>300,000H @25℃		
Class of Case Material	UL94V-0		

Dimension



单位(Unit): mm
 印刷板俯视图(Printed board vertical view)
 栅格间距(Lattice spacing): 2.54mm(0.1inch)
 未标注尺寸公差±0.25mm
 未注明针脚直径公差±0.1mm

Packing Code

L x W x H

D3A

37.0X27.0X17.0 mm

1.456X1.026X0.669inch

Pin Definition

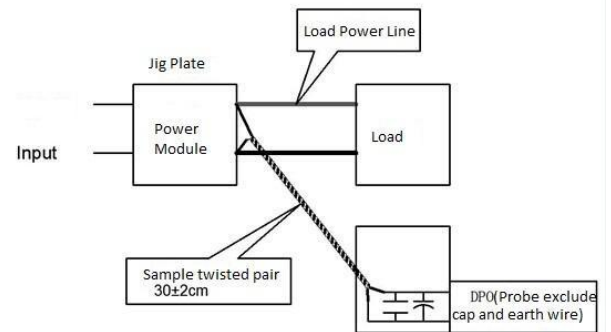
Pin-out	1	2	3	5
Single (S)	AC (L)	AC (N)	-Vo	+Vo

Note: If the definition of pin is not in accordance with the model selection manual, please refer to the label on actual item.

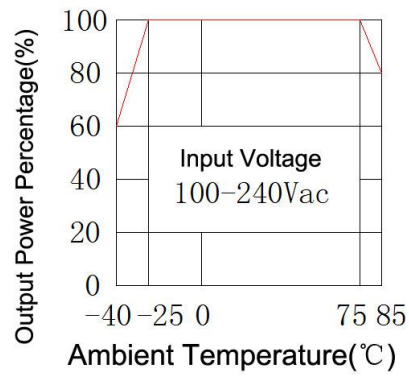
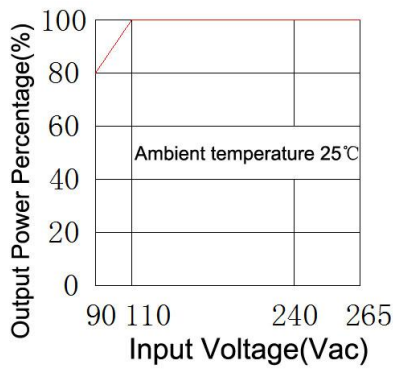
Ripple & Noise Test: (Twisted Pair Method 20MHZ bandwidth)

(1) 12# twisted pair to connect, Oscilloscope bandwidth set as 20MHz, 100M bandwidth probe, terminated with 0.1uF polypropylene capacitor and 47uF 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

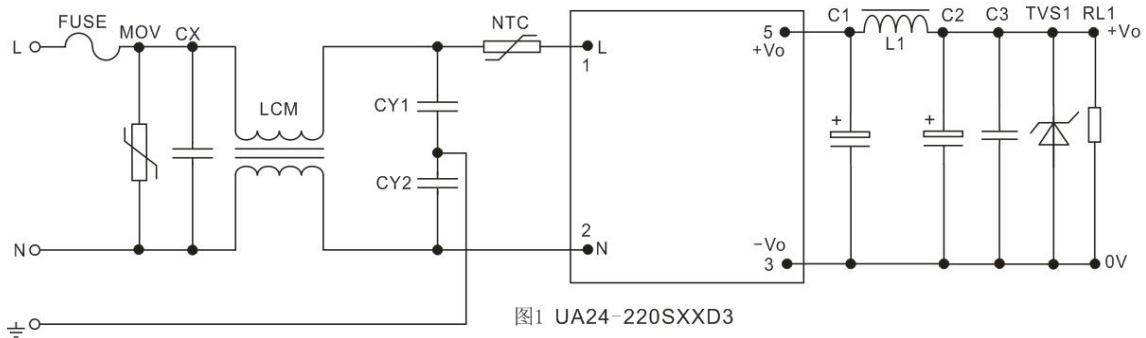


Note

- 1: Input Voltage should be derated base on Input Voltage Derating Curve when it is 90 ~100VAC/240~265VAC/120~140VDC/340~375VDC.
- 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 Recommend EMC Parameter

1. Typical Application Circuit



FUSE	Recommended 2A , 250Vac (Necessary)	NTC	10D-11	C1, C2	5V:1000uF/10V
MOV	14D471K	CY1, CY2	1nF/400VAC	C1, C2	12V:680uF/16V
CX	0.1uF/275Vac	C3	0.1uF/50V	C1, C2	15V:470uF/25V
LCM	10mH-20mH	L1	2.2uH	C1, C2	24V:330uF/35V

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 $T_a=25^{\circ}\text{C}$, 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.