

Typical Features

- ◆ Wide input voltage range: 85-265VAC/120-380VDC
- ◆ No load power consumption ≤ 0.45W
- ◆ Transfer efficiency (typ. 84%)
- ◆ Switching Frequency: 65KHz
- ◆ Protections: Short Circuit, over current
- ◆ Isolation 3000Vac
- ◆ Meet IEC62368/UL62368/EN62368 Standard
- ◆ 6 side shield plastic case, meet UL94 V-0
- ◆ Conform to CE/RoHS standard
- ◆ PCB mounting



Application Field

FA10-220SXXC2N3 Series----- a compact size, high efficient, meet CE standard power converter offered by Aipu. It features universal input voltage, DC and AC dual-use, low ripple, low temperature rise, low power consumption, high efficiency, high reliability, safer isolation, good EMC performance, meet EN55032, IEC/EN61000 standard. It widely used in power, industrial, instrument and smart home applications. For harsh EMC environment, the application circuit in the datasheet is strongly recommended.

Typical Product List

Certificate	Model	Output Specification					Max. Capacitive Load	Ripple & Noise 20MHz (TYP.)	Efficiency@ Full Load, 220Vac(TYP.)
		Power	Voltage 1	Current 1	Voltage 2	Current 2			
		(W)	Vo1(V)	Io1(m A)	Vo2(V)	Io2(m A)			
-	FA10-220S05C2N3	10	5	2000	-	-	3000	150	77
-	FA10-220S12C2N3	10	12	833	-	-	1000	120	82
-	*FA10-220S15C2N3	10	15	666	-	-	800	120	83
-	FA10-220S24C2N3	10.8	24	450	-	-	500	150	84

Note 1: "*" indicates a model under development;

Note 2: The typical value of output efficiency is based on the product being aged at full load for half an hour;

Note 3: The full load efficiency (% , TYP) in the table fluctuates by ±2%, and the full load efficiency is the total output power divided by the input power of the module;

Note 4: Due to limited space, the above is only a partial list of products. If you need products outside the list, please contact our sales department.

Note 5: The test method for ripple and noise adopts the twisted pair test method. For specific test methods and matching, please see the following (Ripple & Noise Test Instructions).

Input Specification

Item	Operating Condition	Min.	Typ.	Max.	Unit
Input Voltage Range	AC Input	85	220	265	VAC
	DC Input	120	310	380	VDC
Input Frequency Range	-	47	50	63	Hz

Input Current	115VAC	/	/	0.25	A
	220VAC	/	/	0.15	
Surge Current	115VAC	/	/	10	
	220VAC	/	/	20	
Leakage Current	-	0.5mA TYP/230VAC/50Hz			
External fuse recommended value	-	2A-3.15A/250VAC slow-fusing (necessary)			
Hot plug	-	Unavailable			
Remote control terminal	-	Unavailable			

Output Specification

Item	Operating Condition		Min.	Typ.	Max.	Unit
Voltage Accuracy	Full input voltage range Any load	Vo1	-	±1.0	±2.0	%
		Vo2	-	-	-	%
Line Regulation	Nominal Load	Vo1	-	-	±0.5	%
		Vo2	-	-	-	%
Load Regulation	Nominal input voltage 20%~100% load	Vo1	-	-	±1.0	%
		Vo2	-	-	-	%
No load power consumption	Input 115VAC		-	-	0.45	W
	Input 220VAC		-	-		
Minimum load	Single Output		0	-	-	%
Turn-on Delay Time	Input 115VAC (full load)		-	150	-	mS
	Input 220VAC (full load)					
Power-off Holding Time	Input 115VAC (full load)		-	10	-	
	Input 220VAC (full load)					
Output Dynamic Response	Overshoot range	25%~50%~25% 50%~75%~50%	-5.0	-	+5.0	%
	Recovery time		-5.0	-	+5.0	mS
Output Overshooting	Full input voltage range		≤10%Vo			%
Short Circuit Protection			Continuous, Self-recovery			Hiccup
Drift Coefficient	-		-	±0.03%	-	%/°C
Over Current Protection	Input 220VAC		≥130% Io, Self-recovery			Hiccup

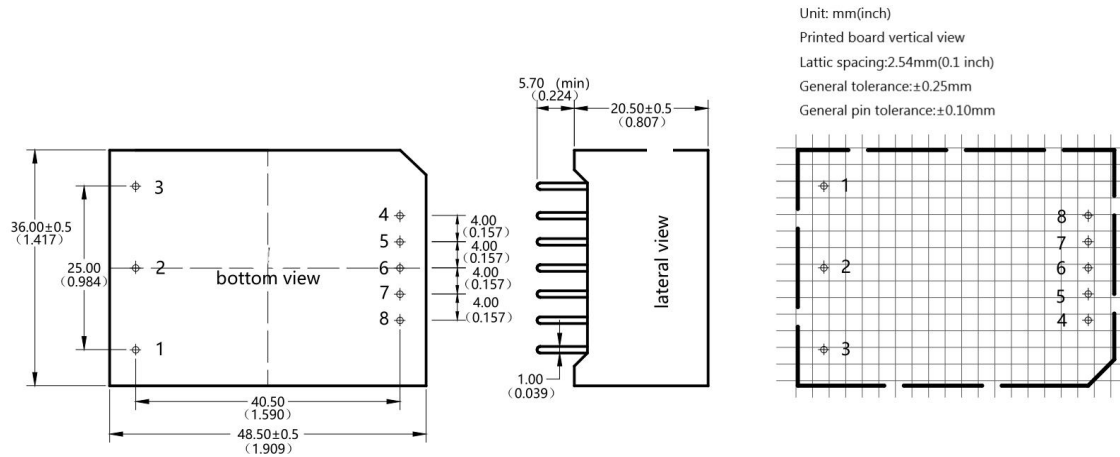
General Specifications

Item	Operating Condition	Min.	Typ.	Max.	Unit
Switching Frequency	-	-	65	-	KHz
Operating Temperature	-	-40	-	+75	°C
Storage Temperature	-	-40	-	+85	
Soldering Temperature	Wave-soldering	260±4°C, timing 5-10S			
	Manual-soldering	360±8°C, timing 4-7S			
Relative Humidity	-	10	-	90	%RH
Isolation Voltage	Input-Output Test 1min, leakage current≤5mA	3000	-	-	VAC
Insulation Resistance	Input-Output@DC500V	100	-	-	MΩ
Safety Standard	-	EN60950、IEC60950			
Vibration	-	10-55Hz,10G,30Min,alongX,Y,Z			
Class of Case Material	-	UL94 V-0			
MTBF	-	MIL-HDBK-217F@25°C > 300,000H			

EMC Characteristics

Total Item	Sub Item	Test Standard	Class	
EMC	EMI	CE	CISPR22/EN55032 CLASS B (Recommended Circuit 1)	
		RE	CISPR22/EN55032 CLASS B (Recommended Circuit 1)	
	EMS	RS	IEC/EN61000-4-3	10V/m Perf.Criteria B (Recommended Circuit 1)
		CS	IEC/EN61000-4-6	3Vr.m.s Perf.Criteria B (Recommended Circuit 1)
		ESD	IEC/EN61000-4-2	Contact ±6KV / Air ±8KV Perf.Criteria B
		Surge	IEC/EN61000-4-5	±1KV Perf.Criteria B
		EFT	IEC/EN61000-4-4	±2KV Perf.Criteria B
		Voltage dips, short interruptions and voltage variations immunity	IEC/EN61000-4-11	0%~70% Perf.Criteria B

Packing Dimension



Packing Code	L x W x H	
C2	48.5 x 36.0 x 20.5 mm	1.909 × 1.417 × 0.807inch

Pin Definition

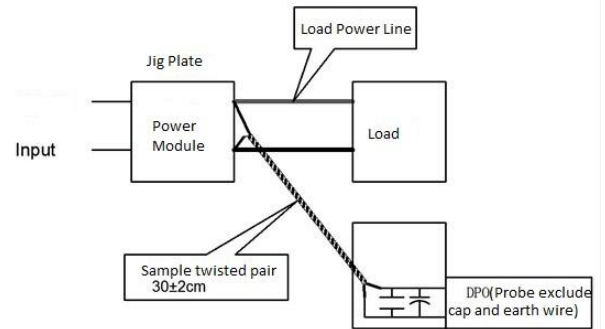
Pin-out	1	2	3	4	8
Single(S)	FG	AC(N)	AC(L)	+Vo	-Vo

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

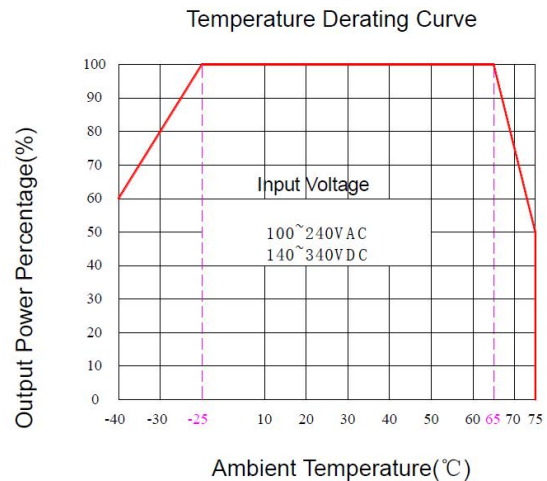
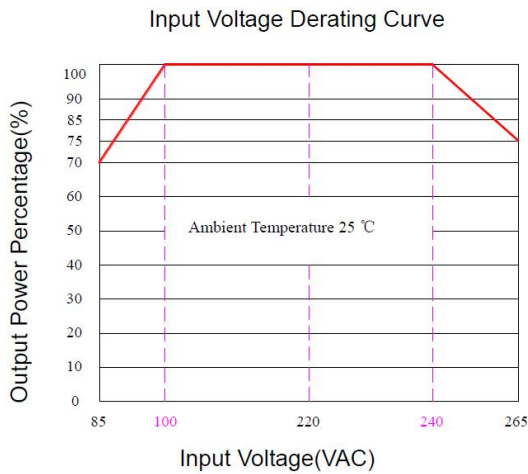
Test Method:

(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.



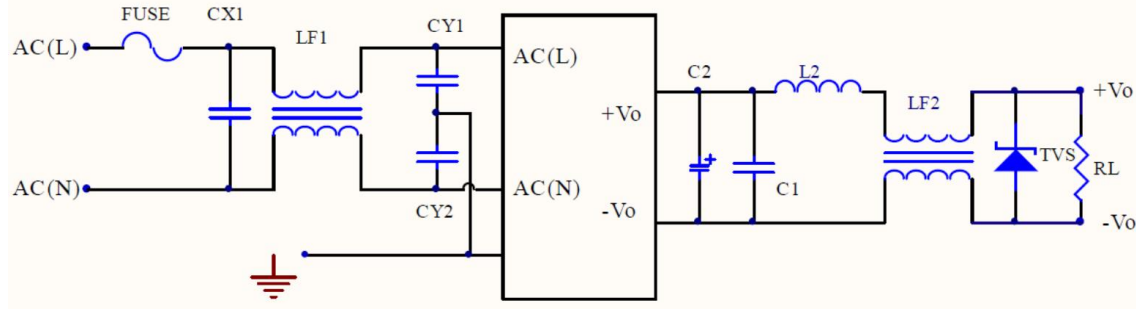
Product Characteristic Curve



Note 1: Input Voltage should be derated base on Input Voltage Derating Curve when it is 85~100VAC/ 240~265VAC/ 120~140VDC/ 340~380VDC.

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

Typical EMC Circuit and Recommended Specification



Recommended Circuit 1

External Circuit recommended Value:

Components	Components Name	Device type	Recommended Value
FUSE	Fuse	2A/250VAC	2A/250Vac, slow fusing, necessary
CX1	X capacitor	0.33uF/275V AC	0.33uF/275Vac
CY1/CY2	Y capacitor	102M/400VA C	102M/400Vac
L2	DM inductor	6.8uH/2A	6.8uH/2A
LF1	CM inductor	UU9.8 10mH/0.5A	10mH/0.5A
LF2	CM inductor	25~50uH/2A	25~50uH/2A

Note 1:

1. C1 choose high frequency low impedance electrolytic capacitor, the capacitance lower than capacitive load, withstand voltage value is above 1.5 times more than output voltage;
2. C2 choose 0.1uF ceramic chip capacitor, withstand voltage value is above 1.5 times more than output voltage;
3. TVS1 is TVS tube: 5V output recommended: SMBJ7.0A, 9V output recommended: SMBJ12.0A, 12V output recommended: SMBJ20A, 15V output recommended: SMBJ20.0A, 24V output recommended: SMBJ30.0A, 48V output recommended: SMBJ64A.

Note 2:

1. The product should be used within the specification range, otherwise it will cause permanent damage to the product;
2. The product input terminal must be connected to a fuse;
3. If the product works below the minimum required load, it cannot be guaranteed that the product performance meets all the performance indicators in this manual;
4. If the product works beyond the product load range, it cannot be guaranteed that the product performance meets all the performance indicators in this manual;
5. Unless otherwise specified, the above data are measured at Ta=25°C, humidity<75%, input nominal voltage and output rated load (pure resistance load);
6. All the above index test methods are based on our company's standards;
7. The above are the performance indicators of the product models listed in this manual. Some indicators of non-standard model products will exceed the above requirements. For specific circumstances, please contact our technical personnel directly;
8. Our company can provide product customization;
9. Product specifications are subject to change without prior notice. Please pay attention to the latest manual published on our official website.