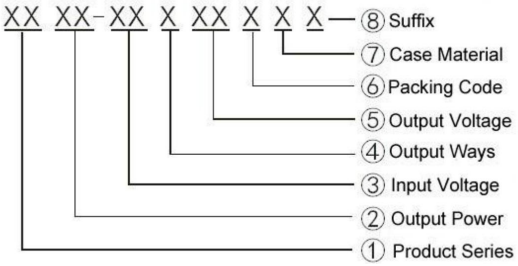
Typical Features

- ◆ Wide Input Voltage Range : 85-265VAC/120-380VDC
- ◆ No load power consumption ≤0.1W
- ◆ Transfer Efficiency: 84%（typ.）
- ◆ Switching Frequency: 65KHz
- ◆ Protections: Short-circuit, Over-current, Over-voltage, Over temperature
- ◆ Isolation voltage: 4000Vac
- ◆ Meet IEC60950/UL60950/EN60950 test standard
- ◆ Conform to CE、RoHS
- ◆ 6 Side shielding plastic case , meet UL94V-0
- ◆ PCB Mounting

Application Field

FA25-220E05XXH2 *Series*-----*a compact size, high efficient power converter offered by Aipu.*
It features universal input voltage range, AC and DC dual-use, low ripple, low temperature rise, low power consumption, high efficiency,high reliability, safer isolation, with good EMC performance, meet EN55032, IEC/EN61000 standard. The series widely used for power, industry, instrument , smart home application, etc.
The application circuit in the datasheet is strongly recommended for harsh EMC environment.

Product Named Method



Typical Product List

Certificate	Part No	Output Specification					Max. Capacitive Load（MAX）	Ripple& noise 20MHz（MAX）	Efficiency@ Full Load，220Vac（Typ）
		Power	Voltage 1	Current 1	Voltage 2	Current 2			
		（W）	Vo1（V）	Io1（mA）	Vo2（V）	Io2（mA）	uF	mVp-p	%
Applying	FA25-220E0505H2	25	5	4000	5	1000	15000/3000	80	80
	FA25-220E0512H2	25	5	4000	12	400	12000/1800	80	82
	FA25-220E0515H2	25	5	3800	15	400	10000/1500	80	83
	FA25-220E0524H2	25	5	4000	24	200	10000/800	80	84

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:."*" is model under developing.
Note 3: The typical output efficiency is based on that product is full loaded and burned-in after half an hour.
Note 4: The fluctuation range of full load efficiency(%,TYP) is ±2%, full load output efficiency= total output power/module's input power.

Input Specifications

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	/	/	0.54	A
	220VAC	/	/	0.28	
Surge Current	115VAC	/	/	10	
	220VAC	/	/	20	
Leakage Current	-	0.5mA TYP/230VAC/50Hz			
External Fuse Recommend Value	-	1A-2A/250VAC slow-fusing			
Hot Plug	-	Unavailable			
Remote Control Terminal	-	Unavailable			

Output Specifications

Item	Operating Condition		Min.	Typ.	Max.	Unit
Voltage Accuracy	Full input voltage range, Any load	Vo1	-	±1.0	±2.0	%
		Vo2	-	±3.0	±5.0	%
Line Regulation	Nominal Load	Vo1	-	-	±0.5	%
		Vo2	-	-	±1.5	%
Load Regulation	Nominal input voltage,20% ~100% load	Vo1	-	-	±1.0	%
		Vo2	-	-	±3.0	%
No Load Power Consumption	Input 115VAC		-	-	0.1	W
	Input 220VAC		-	-		
Minimum Load	Single Output		0	-	-	%
	Dual output common ground		-	-	10	%
	Dual output isolated		-	-	10	

Turn-on Delay Time	Input Nominal Voltage（full load）	-	100	-	mS
Power-off Holding Time	Input 115VAC（full load）	-	10	-	mS
	Input 220VAC（full load）	-	60	-	
Dynamic Response	25%~50%~25% 50%~75%~50%	Overshoot range（%）：≤±5.0			%
		Recovery time（mS）：≤5.0			mS
Output Over-shoot	Full input voltage range	≤10%Vo			%
Short circuit protection		Continuous, Self-recovery			Hiccup
Drift Coefficient	-	-	±0.03%	-	%/℃
Over Current Protection	Full input voltage range	≥150% Io Self-recovery			Hiccup
Over Voltage Protection	Output 5.0VDC	≤7.5			VDC
	Output 12VDC	≤18			
	Output 15VDC	≤20			
	Output 24VDC	≤30			
Ripple & Noise	-	-	50	100	mV
	Note: Ripple& Noise is tested by Twisted Pair Method, details please see Ripple& Noise Test at back.				

General Specifications

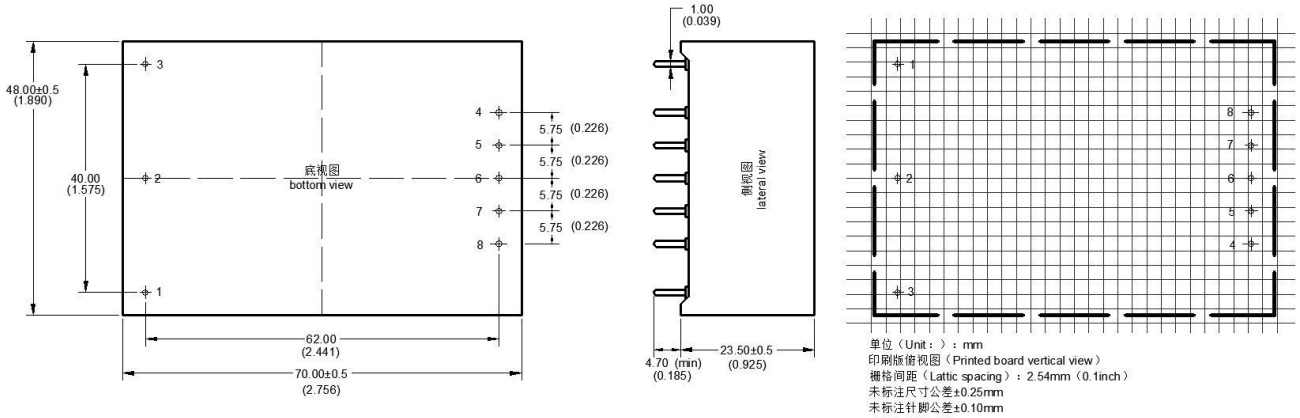
Items	Operating Conditions	Min.	Typ.	Max.	Unit
Switching Frequency	-	-	65	-	KHz
Operating Temperature	-	-40	-	+75	℃
Storage Temperature	-	-40	-	+85	
Soldering Temperature	Wave-soldering	260±4℃，timing 5-10S			
	Manual-soldering	360±8℃，timing 4-7S			
Relative Humidity	-	10	-	90	%RH
Isolation Voltage	Input-Output Test 1min, leakage current≤5mA	4000	-	-	VAC
Insulation Resistance	Input-Output@DC500V	100	-	-	MΩ
Safety Standard	-	EN60950、IEC60950			
Vibration	-	10-55Hz,10G,30Min,alongX,Y,Z			
Safety Class	-	CLASS Ⅱ			

Class of Case Material	-	UL94V-0 Class
MTBF	-	MIL-HDBK-217F@25℃＞300,000H

EMC Characteristics

Total Item		Sub Item	Test Standard	Class
EMC	EMI	CE	CISPR22/EN55032	CLASS B
		RE	CISPR22/EN55032	CLASS B
	EMS	RS	IEC/EN61000-4-3	10V/m Perf.Criteria B (see recommended circuit Photo 1)
		CS	IEC/EN61000-4-6	3Vr.m.s Perf.Criteria B (see recommended circuit Photo 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	
H2	70.0X48.0X23.5 mm	2.756X1.890X0.925inch

Pin Definition

Pin-out	1	2	3	4	5	7	8	1
Single（S）	FG	AC（N）	AC（L）	+Vo2	-Vo2	+Vo1	-Vo1	FG

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

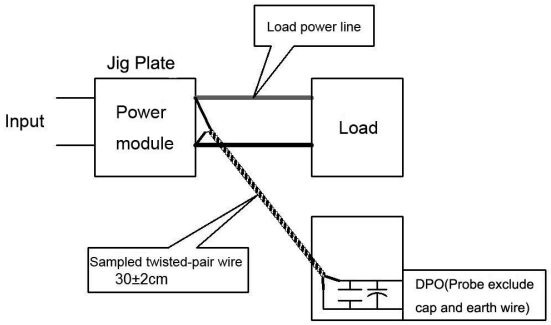
Ripple& Noise Test: (Twisted Pair Method 20MHZ bandwidth)

Test Method:

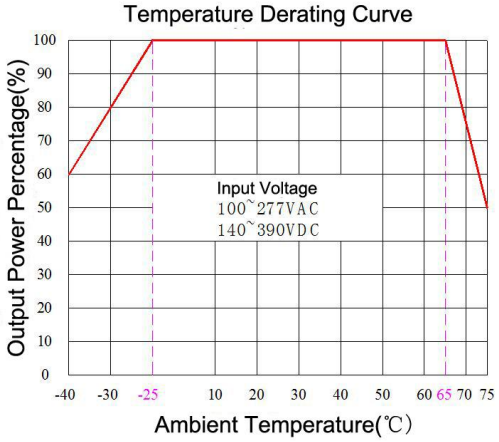
(1) 12# twisted pair to connect, Oscilloscope bandwidth set as 20MHz, 100M bandwidth probe, terminated with 0.1uF polypropylene capacitor and 10uF high frequency low resistance electrolytic capacitor in parallel, oscilloscope set as Sample pattern.

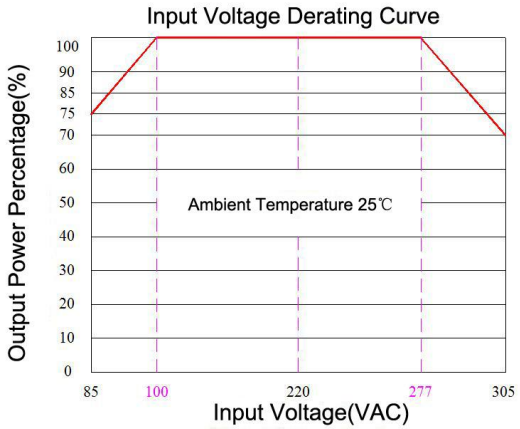
(2)Output Ripple&Noise Test Method:

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/ 277~305VAC/ 120~140VDC/ 390~430VDC.

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

Typical EMC Application and Recommended Parameter

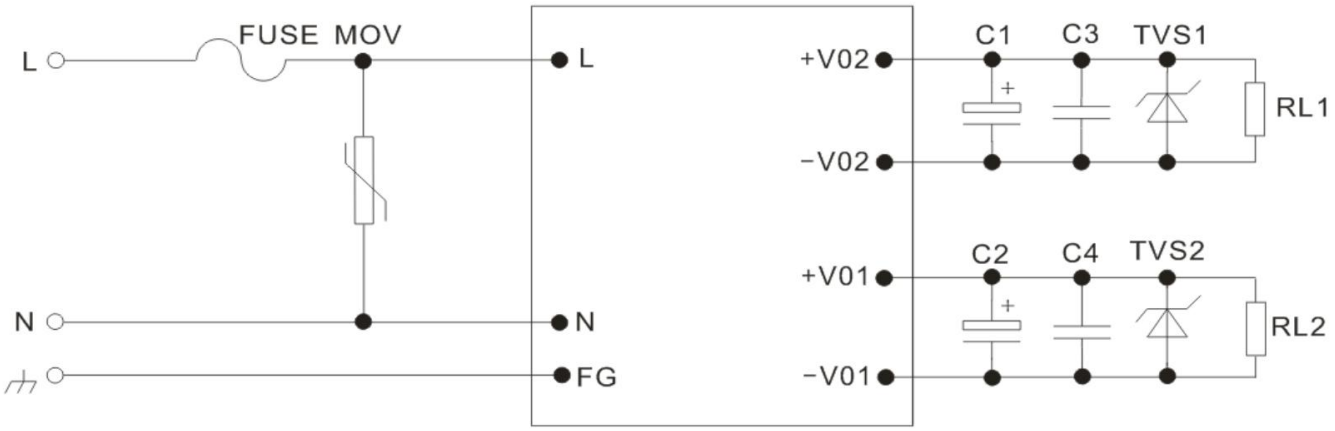


Photo 1

Note:

1. FUSE: necessary, suggest 2A~250Vac, slow fusing,block form;
2. MOV is piezoresistance,suggest model: 10D561K;
3. C1,C2 choose high frequency low impedance electrolytic capacitor, the capacitance value less than capacitive load. Withstand voltage is 1.5 times more than output voltage;
4. C3,C4 choose the ceramic chip capacitor, withstand voltage is 1.5 times more than output voltage;
5. TVS1, TVS2 is TVS Tube,

5V output recommend: SMBJ7.0A，9V output recommend:SMBJ12.0A, 12V output recommend:SMBJ20A,15V output recommend :SMBJ20.0A, 24V output recommend:SMBJ30.0A, 48V output recommend: SMBJ64A.

Note:

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 operated under the minimum load range, 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℃, 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.