

Typical Features

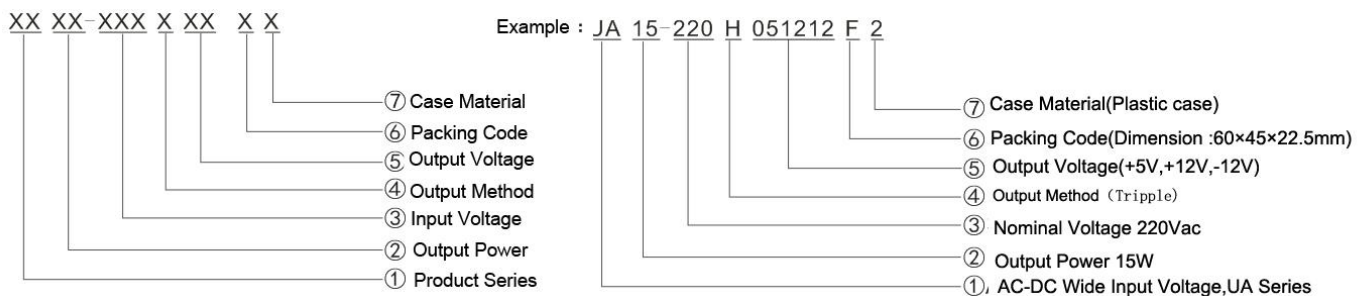
- ◆ Wide Input Voltage Range: 85-265VAC/100-380VDC
- ◆ No-load power consumption ≤ 0.15W
- ◆ Transfer Efficiency 82% (Typical)
- ◆ Switching Frequency: 65KHz
- ◆ Protections: short circuit, over current circuit, over temperature
- ◆ Isolation Voltage: 3000Vac
- ◆ Conform to IEC60950/UL60950/EN60950
- ◆ Meet CE, RoHS standard
- ◆ Plastic Case, meet UL94V-0 Class
- ◆ PCB mounting



Application Field

UA15-220H05XXXXF2 Series-----a compact size, high efficient, conform to CE power converter offered by Aipu. It features universal input voltage, taking both DC and AC input, low ripple, low temperature rise, low power consumption, high efficiency, high reliability, safer isolation, good EMC performance. EMC and Safety standard meet international EN55032, IEC/EN61000 standard. It is widely used in electricity, industrial, instruments and smart home applications. For harsh EMC environment, the application circuit in the datasheet is strongly recommended.

Product Named Method



Typical Product List

Certificate	Item	Output					Max. Capacitive Load	Ripple & Noise 20MH z (Max)	Efficiency @ full load, 220Vac (Typical)
		Power	Voltage 1	Current 1	Voltage 2	Current 2			
		(W)	Vo1(V)	Io1(m A)	Vo2(V)	Io2(m A)			
Meet CE	*UA15-220H051212F2A	15	5	2000	±12	200	15000/2000	80	78
	UA15-220H051515F2	15	5	1800	±15	200	5000/370/370	80	80
	*UA15-220H052424F2	15	5	2000	±24	100	1500/130/130	80	82

Note :

1. Due to space limitations, above is only a part of our product list, please contact our sales team for more items.
2. "*" are models under developing.
3. The typical value of output efficiency is based on product is full loaded and burned-in after half an hour.
4. The fluctuation range of full load efficiency at the table(%, TYP) is ±2%, full load efficiency = total output power / module's input power.



Input Specifications

Item	Operating Condition	Min.	Typ.	Max.	Unit
Input Voltage(Vac)	AC input	85	220	265	VAC
	DC input	100	310	380	VDC
Input Frequency Range(Hz)	-	47	50	63	Hz
Input Current	115VAC	/	/	0.39	A
	220VAC	/	/	0.24	
Surge current	115VAC	/	10	-	
	220VAC	/	20	-	
Leak current	-	0.3mA TYP/230VAC/50Hz			
External fuse recommended value	-	1A-2A/250VAC slow-fusing			
Hot plug	-	Unavailable			
Remote control Terminal	-	Unavailable			

Output Specifications

Item	Operating Condition		Min.	Typ.	Max.	Unit
Output 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	Input nominal voltage 20%~100%	Vo1	-	-	±3.0	%
		Vo2	-	-	±5.0	%
No Load Consumption	Input 115VAC		-	-	0.15	W
	Input 220VAC		-	-		
Minimum load	Single output		0	-	-	%
	Dual output common ground		10	-	-	%
	Dual output isolated		10	-	-	
Turn-on Delay Time	Nominal input voltage(full load)		-	100	-	mS
Power-off Holding Time	Input 115VAC(full load)		-	15	-	mS

	Input 220VAC(full load)	-	80	-	
Dynamic Response	25%~50%~25%	Overshoot range(%): $\leq\pm 10$			%
	50%~75%~50%	Recovery time(Ms): ≤ 5.0			mS
Output Overshoot	Full input voltage range	$\leq 10\%V_o$			%
Short Circuit Protection		Continuous, Self-recovery			Hiccup
Drift Coefficient	-	-	$\pm 0.03\%$	-	%/°C
Over Current Protection	Full input voltage range	$\geq 150\% I_o$ Self-recovery			Hiccup
Over Voltage Protection	Output 5.0VDC	≤ 7.5			VDC
	Output 12VDC	≤ 18			
	Output 15VDC	≤ 20			
	Output 24VDC	≤ 30			
Ripple& Noise	-	-	50	80	mV
	Note: ripple and noise is tested by twisted-pair method, for details please see at back.				

General Specifications

Item	Operating Condition	Min.	Typ.	Max.	Unit
Switching Frequency	-	-	65	-	KHz
Operating Temperature	-	-40	-	+75	°C
Storage Temperature	-	-40	-	+85	
Soldering Temp.	Waver soldering	$260\pm 4^\circ\text{C}$, timing 5-10S			
	Manual soldering	$360\pm 8^\circ\text{C}$, timing 4-7S			
Relative Humidity	-	10	-	90	%RH
Isolation Voltage	Input-Output Test 1min,leakage current $\leq 5\text{mA}$	3000	-	-	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
MTBF	-	MIL-HDBK-217F@25°C > 300,000H

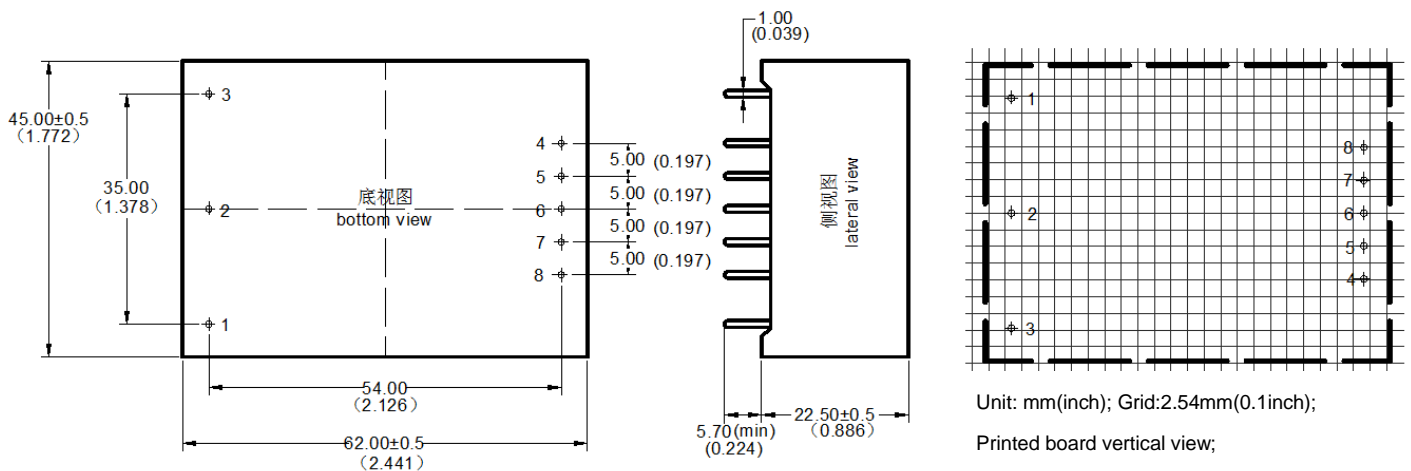
Material Features

Case material	Black frame-retardant heat-resistant plastic(UL94V-0)	
Packing Dimension	Typical Packing	62.0X45.0X22.5mm
Weight		110g(TYP)
Cooling Method	Free air convection	

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

Dimension



Unit: mm(inch); Grid:2.54mm(0.1inch);
 Printed board vertical view;
 General tolerances: ±0.25mm;
 General Pin tolerances: ±0.10mm

Code	L x W x H	
F2	62.0X45.0X22.5 mm	2.441X1.772X0.885inch

Pin Definition

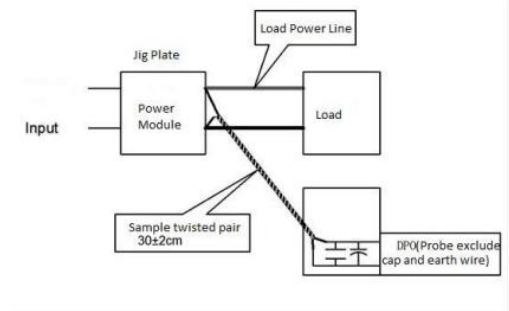
Pin	1	2	3	4	5	6	7	8
Single (S)	FG	AC(N)	AC(L)	+Vo2	COM	-Vo2	+Vo1	-Vo1

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

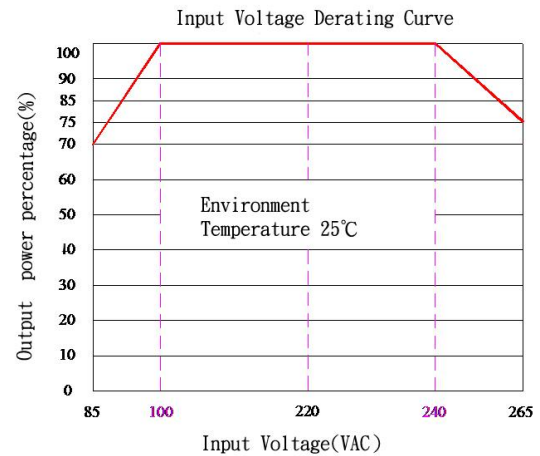
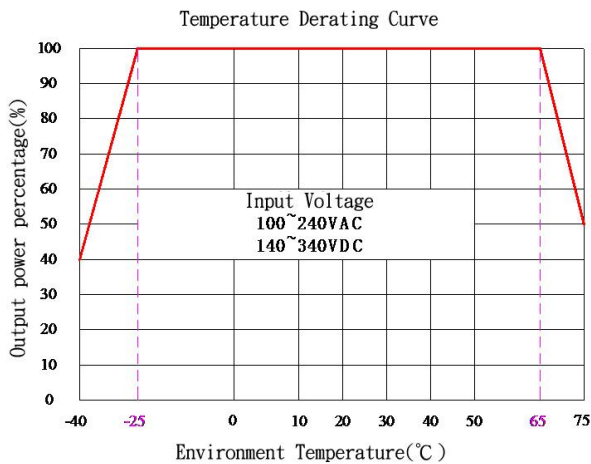
Ripple & Noise Test: (Twisted Pair Method 20MHZ bandwidth)

Test Method:

- 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.
- 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 85~100VAC/240~265VAC/100~120VDC/340~380VDC.
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 parameters

1. Typical Application Circuit

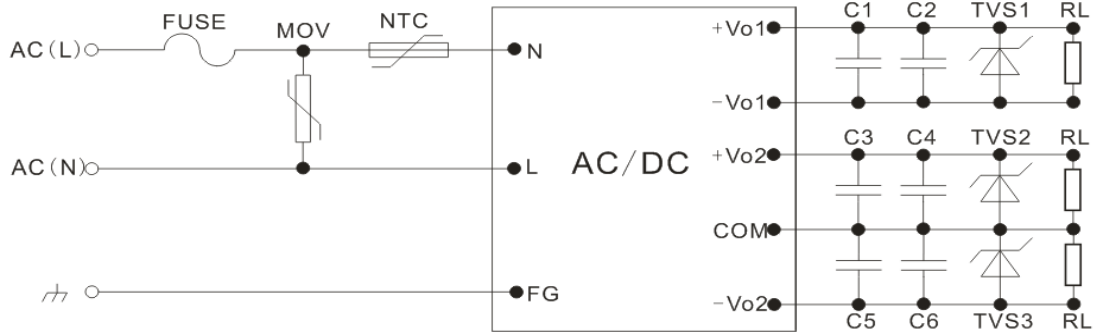


Photo 1

Output voltage	5V	9V	12V	15V	24V	48V
TVS tube recommended value	SMBJ7.0A	SMBJ12A	SMBJ20A	SMBJ20A	SMBJ30A	SMBJ64A

Note: Output filter capacitors C1,C3,C5 are electrolytic capacitors, recommend to use high frequency low resistance ones, capacitance and the running current please refer to the specification of each supplier. C2,C4,C6 are ceramic capacitors, filters high frequency noise. TVS is a recommended component to protect post circuit if converter fails. Recommend to use external FUSE, model: 2A/250V slow fusing. Recommend to connect external NTC thermistors, model:5D-9. Recommend external to connect MOV voltage dependent resistor, model:14D511K.

2.EMC recommended Circuit

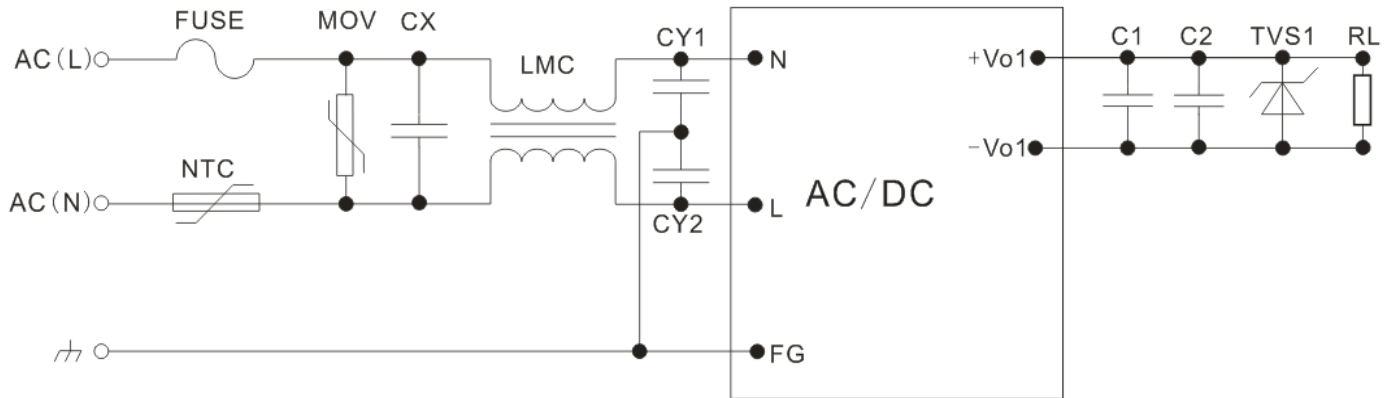


Photo 2

Component	Recommended Value	Component	Recommended Value
MOV	14D511K	NTC	5D-9
CX	0.1uF/275VAC	LMC	15mH, recommended to use our common-model inductor)
FUSE	2A/250V, slow fusing, necessary to external		
CY1,CY2	1000pF/400VAC		



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