Typical Features

- ◆Wide Input Voltage Range: 85-265VAC/120-380VDC
- ◆No load power consumption≤0.3W
- ◆Transfer Efficiency: 83% (typ.)
- ◆Switching Frequency: 65KHz
- ◆Protections: Short-circuit, Over-current, Over-temperature
- ◆Isolation voltage: 3000Vac
- ◆Meet IEC60950/UL60950/EN60950 test standard
- ◆Plastic Case , meet UL94 V-0
- ◆PCB Mounting

Application Field

DA15-220E1205F2N3 *---- a compact size, high efficient , meet CE standard 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, ect.
The application circuit in the datasheet is strongly recommended for harsh EMC environment.

Typical Product List

Certificate	Part No	Output Specification					Max. Capacitive Load	Ripple& Noise 20MHz (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)	u F	mVp-p	%
/	DA15-220E1205F2N3	14	12	1000	5	400	3000/220	100/100	83

Note 1: The fluctuation range of full load efficiency(%,TYP) is ±2%, full load output efficiency= total output power/module's input power.
Note 2: Vo2 could load 400mA, under the condition that Vo1 load 500mA at least.
Note 3: Ripple & noise is tested by twisted pair method, for details please check " Ripple & Noise Test" at back.

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	/	/	0.30	A
	220VAC	/	/	0.15	
Surge Current	115VAC	-	-	10	
	220VAC	-	/	20	

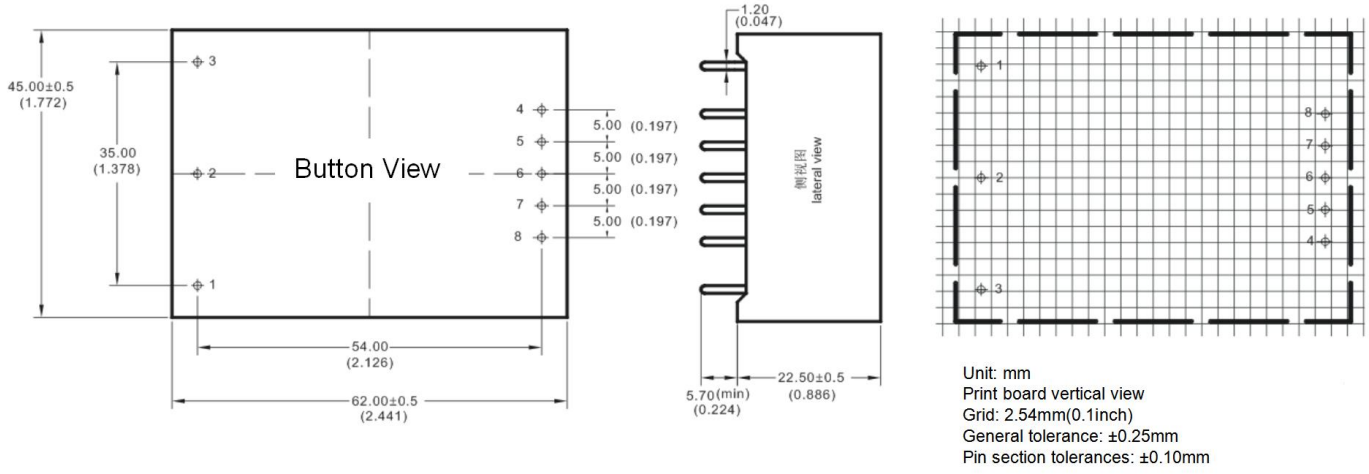
Leakage Current	-		0.5mA TYP/230VAC/50Hz			
External Fuse Recommend Value	-		1A-2A/250VAC slow-fusing			
Hot Plug	-		Unavailable			
Remote Control Terminal	-		Unavailable			
Output Specifications						
Item	**Operating Condition**		**Min.**	**Typ.**	**Max.**	**Unit**
Voltage Accuracy	Full input voltage range, Any load	Vo1	-	±2.0	±3.0	%
		Vo2		±4.0	±6.0	%
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		-	-	0.3	W
	Input 220VAC					
Minimum Load	Dual Output Isolated		10	-	-	%
Turn-on Delay Time	Nominal input voltage (full load)		-	1000	-	mS
Power-off Holding Time	Input 115Vac (full load)		-	80	-	mS
	Input 220Vac (full load)		-	100	-	
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	Input 220VAC		≥150% Io Self-recovery			Hiccup
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	3000	-		VAC
Insulation Resistance	Input-Output@DC 500V	100	-		MΩ
Safety Standard	-	EN60950, IEC60950			
Vibration	-	10-55Hz,10G,30Min,alongX,Y,Z			
Safety Class	-	CLASS Ⅱ			
Class of Case Material	-	UL94 V-0			
MTBF	-	MIL-HDBK-217F@25℃＞300,000H			

EMC Characteristics

Total Item		Sub Item	Test Standard	Class
EMC	EMI	CE	CISPR22/EN55032	CLASS B (see recommended circuit Photo 1)
		RE	CISPR22/EN55032	CLASS B (see recommended circuit Photo 1)
	EMS	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	
F2	62.0 X 45.0 X 22.5 mm	2.441 × 1.772 × 0.885inch

Pin Definition

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

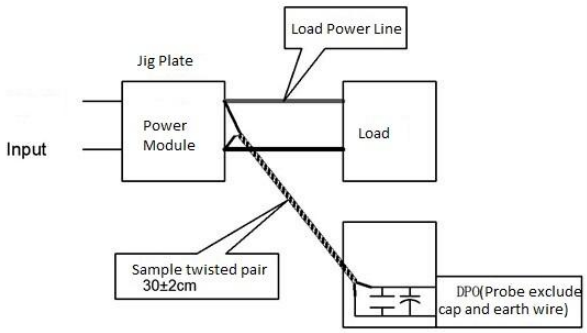
Note: If the definition of pin is not in accordance with the model selection manual, please refer to the label on actual item.

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

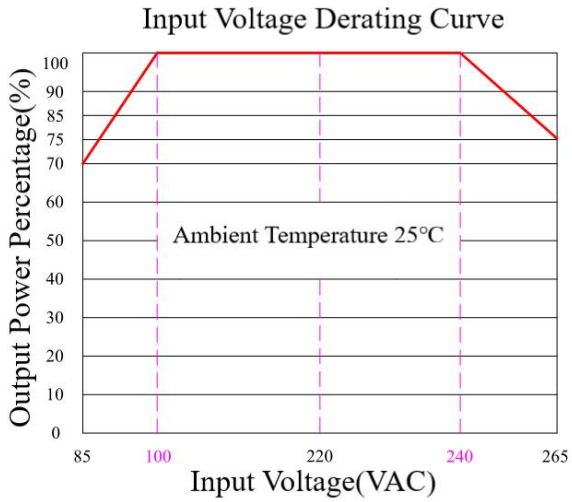
Test Method:

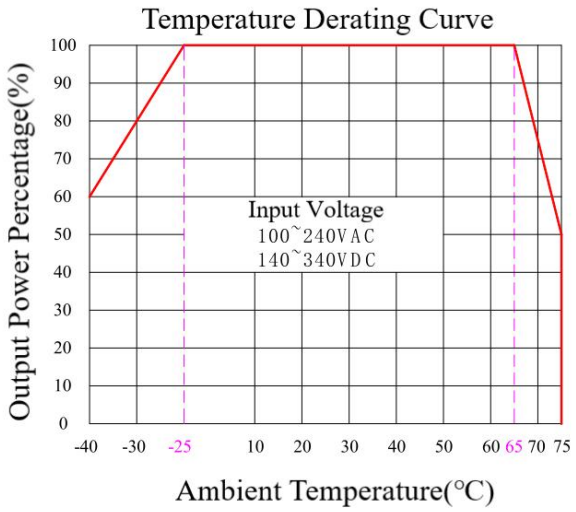
(1) 12# twisted pair to connect, Oscilloscope bandwidth set as 20MHz, 100M bandwidth probe, terminated with 0.1uF polypropylene capacitor and 10uF high frequency low resistance electrolytic capacitor in parallel, oscilloscope set as Sample pattern.

(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





Note1: 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 Recommended Application Circuit

1. Recommended Circuit:

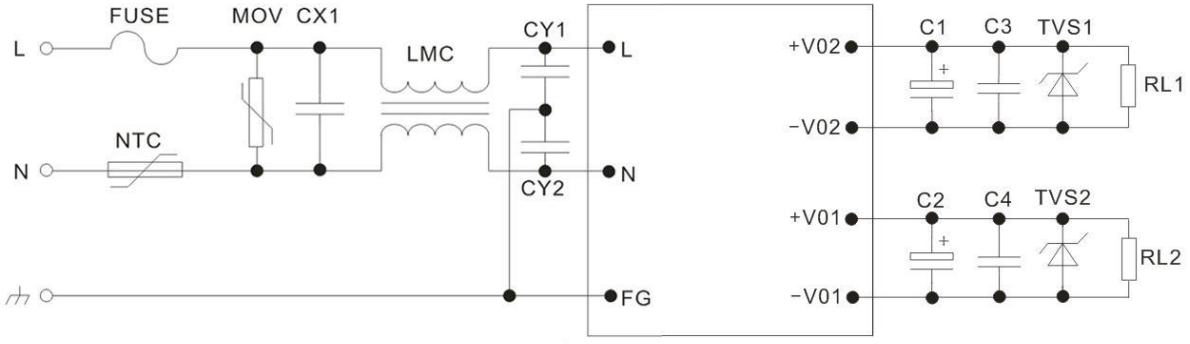


Photo 1

Note:

1. FUSE: suggest 2A~250Vac, slow fusing, block form;
2. MOV is voltage dependent resistor, recommend model: 14D561K;
3. NTC is thermistor, recommend model:10D-9;
4.CX1 is X capacitor, recommend model:0.1uF/275VAC;
5.LMC is common mode inductor, recommend value above 25mH;
6.CY1, CY2 are Y capacitors, recommend model 102M/400V;
7. C1,C2 are high frequency low impedance electrolytic capacitor whose capacitance value less than capacitive load, withstand voltage is above 1.5 times or more of output voltage.
8. C3, C4 are 0.1uF ceramic chip capacitors, withstand voltage is 1.5 times more than output voltage.
9. TVS1, TVS2 are TVS tubes:

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 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 is not worked under the load range(below the minimum load or beyond the load range), we cannot ensure that the performance of product is in accordance with all the indexes in this manual;
4.Unless otherwise specified, data in this datasheet are tested under conditions of **Ta=25℃**, **humidity<75%** when inputting nominal voltage and outputting rated load(pure resistance load);
5.All index testing methods in this datasheet are based on our Company's corporate standards
6.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;
7.We can provide customized product service;
8.The product specification may be changed at any time without prior notice.

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