

Typical Features	
◆	Wide input voltage range:85-265VAC/120-380VDC
◆	No-load power consumption $\leq\leq$ 0.25W
◆	Transfer efficiency (typ. 82%)
◆	Switching frequency: 65KHz
◆	Protection: Short Circuit, Over Current
◆	Isolation voltage: 3800Vac
◆	Meet IEC62368/UL62368/EN62368 Test Standard
◆	Plastic case, UL94 V-0 Class
◆	PCB mounting



Application Field

FA15-220SXXE2D4 Series----- a compact size, high efficient, conform to CE certificate 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, with good EMC performance. EMC and Safety standard meet international EN55032,IEC/EN61000. It widely used in power, industrial, instrument, smart home applications. For harsh EMC environment, the application circuit in the datasheet is strongly recommended.

Typical Product List

Certificate	Part No.	Output Specification			Max. Capacitive Load	Ripple& Noise 20MHz (Max)	Efficiency@ Full Load 220Vac (Typical)
		Power	Voltage	Current			
		(W)	Vo(V)	Io(m A)			
/	FA15-220S05E2D4	15	5	3000	5000	100	75
	FA15-220S06E2D4	15	6	2500	5000	120	79
	*FA15-220S12E2D4	15	12	1250	2000	120	81
	*FA15-220S15E2D4	15	15	1000	800	120	81
	*FA15-220S24E2D4	15	24	625	330	120	82

- Note 1: For more items, please check with our sales team.
- 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 $\pm 2\%$, full load output efficiency= total output power/module's input power.

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	/	/	0.38	A
	220VAC	/	/	0.28	
Surge Current	115VAC	/	/	10	
	220VAC	/	/	20	
Leakage Current	-	0.5mA TYP/230VAC/50Hz			
External fuse recommended value	-	4.0A/250VAC slow-fusing			
Hot plug	-	Unavailable			
Remote control terminal	-	Unavailable			

Output Specification

Item	Operating Condition		Min.	Typ.	Max.	Unit
Voltage Accuracy	Full input voltage range	Vo	-	±1.0	±3.0	%
	Any load					
Line Regulation	Nominal Load	Vo	-	-	±1.0	%
Load Regulation	Nominal input Voltage	Vo	-	-	±1.5	%
	20%~100% load					
No load power consumption	Input 115VAC		-	-	0.25	W
	Input 220VAC		-	-		
Minimum load	Single Output		10%	-	-	% %
Turn-on Delay Time	Nominal input voltage, full load		-	800	-	mS
Power-off Holding Time	Input 115VAC (full load)		-	20	-	
	Input 220VAC (full load)		-	60	-	
Dynamic Response	25%~50%~25%		-5.0	-	+5.0	%
	50%~75%~50%		-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	Full input voltage range		≥130% Io, Self-recovery			Hiccup

General Specifications

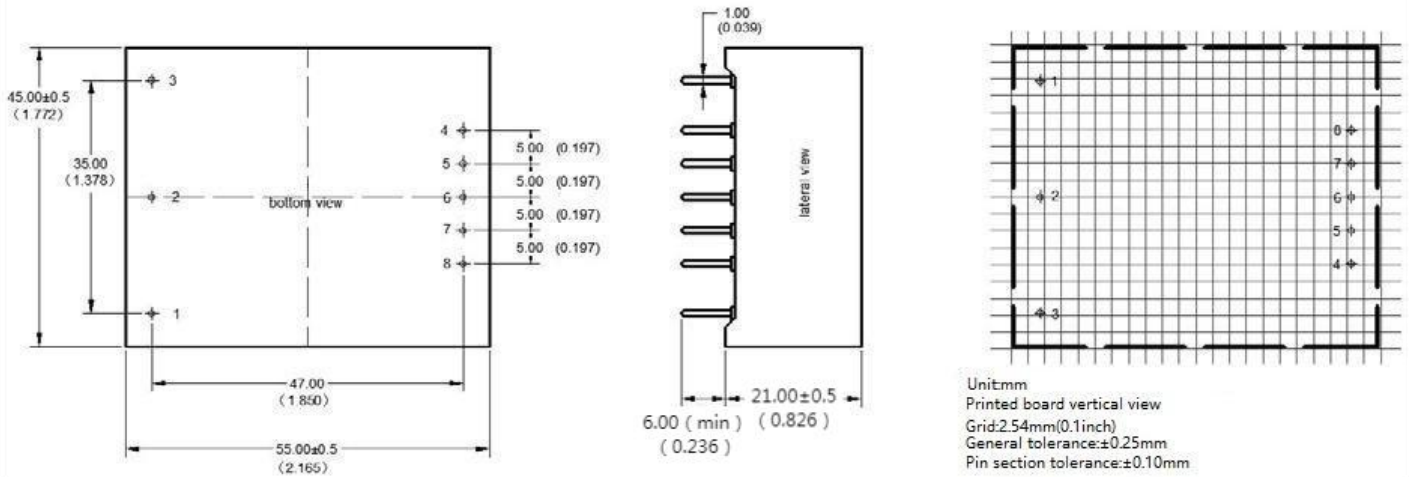
Item	Operating Condition		Min.	Typ.	Max.	Unit
Switching Frequency	-		-	65	-	KHz
Operating Temperature	-		-40	-	+75	°C
	Base on Temperature Derating Curve, details see Product Characteristic Curve at back.					

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	3800	-	-	VAC
Insulation Resistance	Input-Output@DC500V	100	-	-	MΩ
Safety Standard	-	EN60950、IEC60950			
Vibration	-	10-55Hz, 10G, 30Min, along X, Y, Z			
Safety Class	-	CLASS II			
Class of Case Material	-	UL94 V-0			
MTBF	-	MIL-HDBK-217F@25℃ > 300,000H			

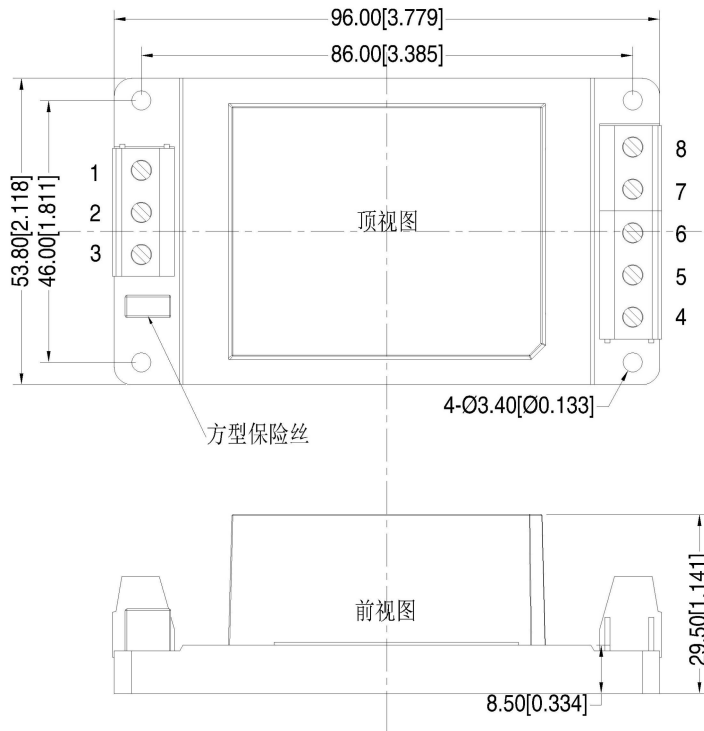
EMC Characteristics

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

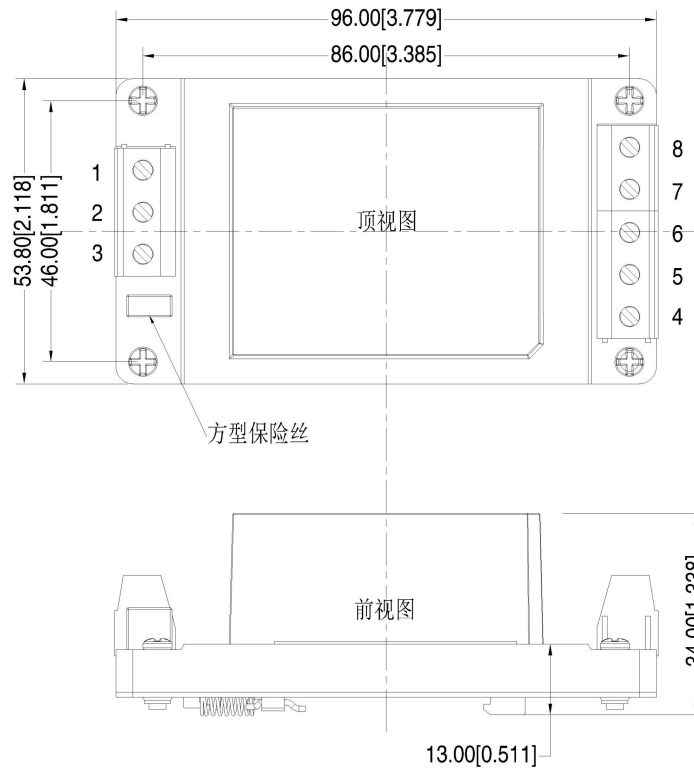
E2 package size



E2-T outer dimensions



E2-TS Outer dimensions



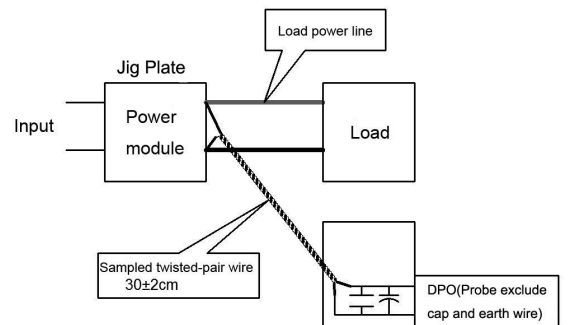
Pin Definition	L x W x H	
E2	55.0 x 45.0 x 20.5 mm	2.165 × 1.772 × 0.807inch
E2-T	96.0 x 53.8 x 29.5 mm	3.779 × 2.118 × 1.161inch
E2-TS	96.0 x 53.8 x 34.0 mm	3.779 × 2.118 × 1.338inch

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

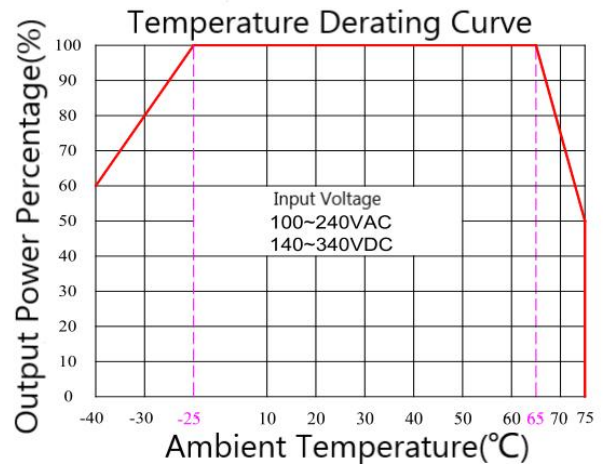
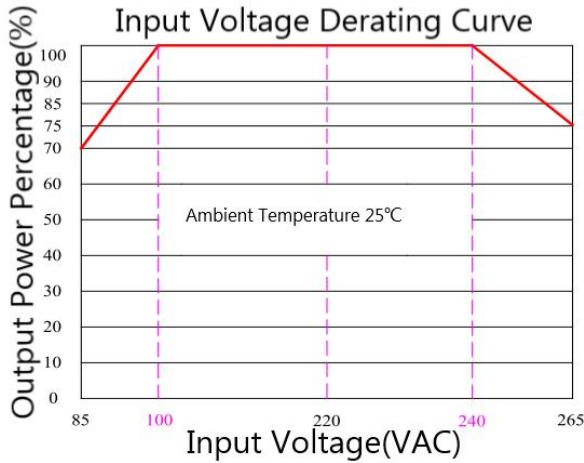
Ripple & Noise Test: (Twisted Pair Method 20MHZ bandwidth)

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 base on Input Voltage Derating Curve when it is 85~100VAC /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 EMC Circuit and Recommended Spec

1. Typical Application Circuit

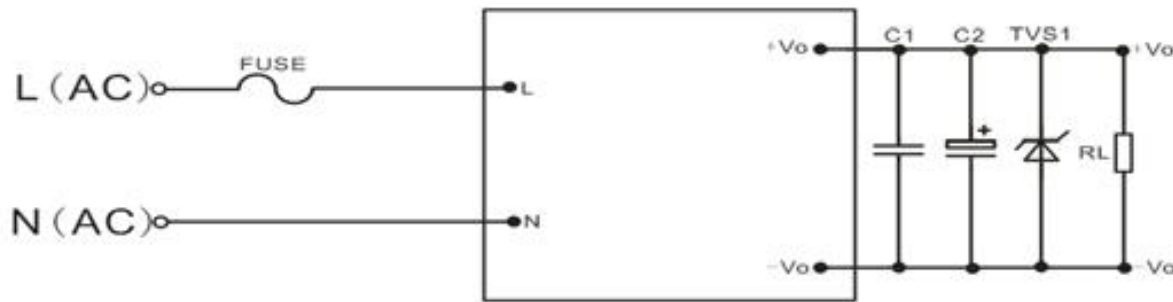


Photo 1: typical application circuit

Part no.	C2 (uF)	TVS1
FA15-220S05E2D4	470	SMBJ7.0A
FA15-220S06E2D4	470	SMBJ7.0A
FA15-220S12E2D4	330	SMBJ15A
FA15-220S15E2D4	220	SMBJ20A
FA15-220S24E2D4	100	SMBJ30A

Note:
The output filter capacitor C2 is electrolytic capacitor, recommended to use high-frequency and low-resistance one, please refer to the technical specifications provided by each manufacturer for capacity and current flow. C2 capacitor withstand voltage derating to 80% at least. C1 is a ceramic capacitor to remove high frequency noise, recommended to use 0.1uF/50V/1206. TVS1 tube protects the post circuit when the module is abnormal, and is necessary. Recommend external FUSE model: 4.0 A/250V, slow fusing.

2.EMC solution recommended circuit

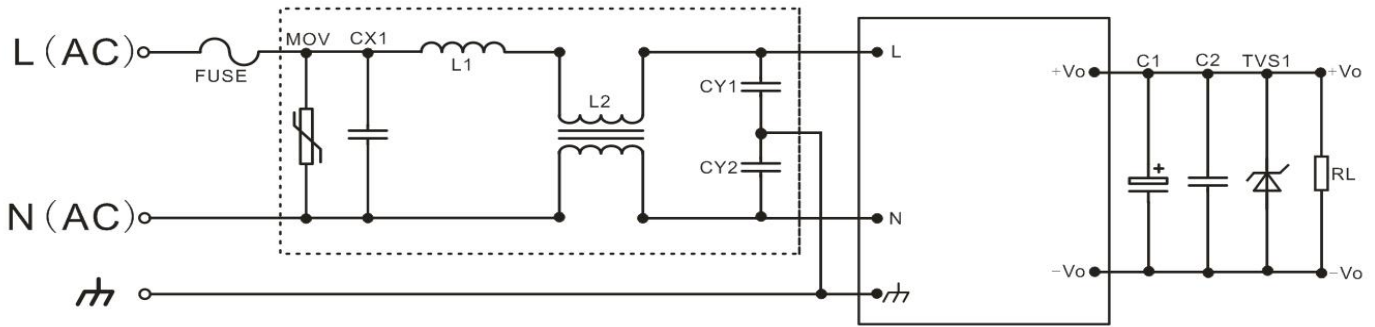


Photo 2: for EMC or higher request recommended circuit

Component	Name	Recommended Value
FUSE	Fuse	4.0A/250VAC, Slow fusing, necessary
MOV	Varistor	14D511K
CX1	X Capacitor	0.22uF/275VAC
L1	DM Inductor	6.8uH/2.5A I inductor
L2	CM Inductor	15mH/2.5A
CY1	Y Capacitor	102M-400VAC
CY2		

- 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°C**, **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.

Guangzhou Aipu Electron Technology Co., Ltd

Address: Building 4, HEDY Park, No.63, Punan Road, Huangpu Dist, Guangzhou, China.
 Tel: 86-20-84206763 Fax: 86-20-84206762 HOTLINE: 400-889-8821
 E-mail: sales@aipu-elec.com Website: <https://www.aipupower.com>