Typical Features

- ◆ Wide input voltage range: 90-528VAC/100-745VDC
- ◆ No load power consumption ≤ 0.4W
- ◆ Transfer Efficiency (TYP. 75%)
- ◆ Switching Frequency: 65KHz
- ◆ Protections: short circuit, over current
- ◆ Isolation voltage: 3000Vac
- ◆ Safety Class: Class II
- ◆Meet IEC62368/UL62368/EN62368 test standard

Application Field

FA3-220SXXY2N3 Series----- *a compact size, high efficient, power module 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, good EMC performance. EMC and safey standard could meet international EN55032, IEC/EN61000 standard, This series have important application for power, industry, instrument and civil field.*

Typical Product List

Certificate	Part No.	Output Specifications			Max. Capacitive Load	Ripple& Noise 20MHz (Max)	Efficiency@ Full Load, 220Vac (Typical)
		Power	Voltage1	Current1			
		(W)	Vo1(V)	Io1(m A)	u F	mVp-p	%
/	FA3-300S05Y2N3	3	5	600	5000	180 (external electrolytic capacitor needed)	70
	*FA3-300S12Y2N3	3	12	250	600	120	72
	FA3-300S15Y2N3	3	15	200	600	120	73
	*FA3-300S24Y2N3	3	24	125	300	150	75

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:"*" are models being developing.

Note 3: The typical value of output efficiency is based on module is full loaded and burned-in after half an hour.

Note 4: The fluctuation range of full load efficiency(%,TYP) in table is ±2%, full load efficiency= output power/module's input power.

Note 5: Ripple & Noise is tested by twisted pair method, for details please see(Ripple& Noise Test) at back. output capacitor per external circuit Photo 1 is needed.

Input Specifications

Item	Operating Condition	Min	Typ.	Max	Unit
Input Voltage Range	AC input	90	300	528	VAC
	DC input	100	424	745	VDC
Input Frequency range	-	47	50	63	Hz
Input Current	115VAC	/	/	0.08	A

	220VAC	/	/	0.04	
Surge Current	115VAC	/	/	10	
	220VAC	/	/	20	
Leakage Current	-	0.5mA TYP/230VAC/50Hz			
External Fuse Recommended	-	1A/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	-	±2.0	±3.0	%
Line Regulation		Nominal load	-	-	±0.5	%
Load Regulation		Nominal input voltage, 20%~100% load	-	-	±3.0	%
No Load Consumption		Input 115VAC	-	-	0.4	W
		Input 300VAC	-			
Minimum Load		Single Output	0	-	-	%
Start up Delay Time		Nominal input voltage (full load)	-	1000	-	mS
Power-off Holding Time		Input 115VAC (full load)	-	200	-	mS
		Input 300VAC (full load)	-	100	-	
Dynamic Response	Overshoot range	25%~50%~25% 50%~75%~50%	-5.0	-	+5.0	%
	Recovery time		-	-	+5.0	mS
Output Overshoot		Full input voltage range	≤10%Vo			%
Short circuit Protection			Continuous, self-recovery			Hiccup
Temperature Drift		-	-	±0.03%	-	%/℃
Over Current Protection		Input 300VAC	≥130% Io self-recovery			Hiccup

General Specifications

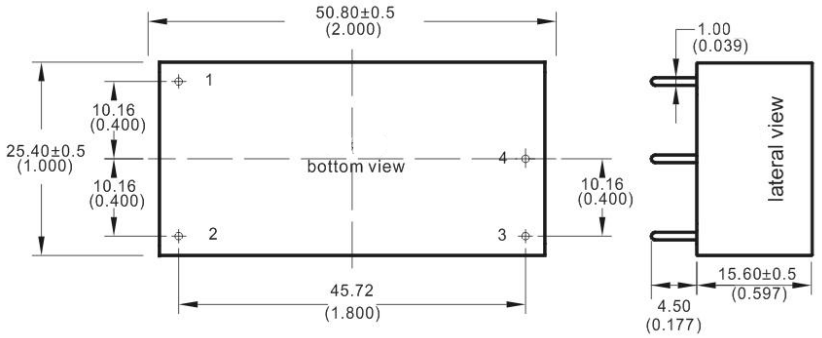
Item	Operating Condition	Min	Typ.	Max	Unit
Switching Frequency	-	-	65	-	KHz
Operating Temperature	-	-40	-	+75	℃
Storage Temperature	-	-40	-	+85	
Soldering Temperature	Wave soldering	260±4℃, time 5-10S			
	Manual soldering	360±8℃, time 4-7S			
Relative Humidity	-	10	-	90	%RH

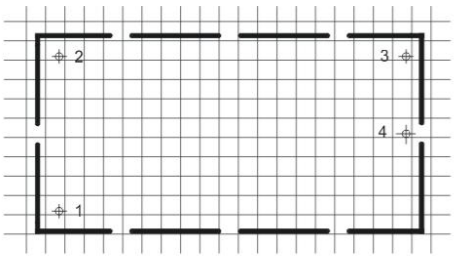
Isolation Voltage	Input-Output, Test 1min, leakage current≤5Ma	3000	-	-	VAC
Insulation Resistance	Input-Output@ DC500V	100	-	-	MΩ
Safety Standard	-	EN62368, IEC62368			
Vibration	-	10-55Hz,10G,30Min,alongX,Y,Z			
Safety Class	-	CLASS Ⅱ			
Class of Case Material	-	-			
MTBF	-	MIL-HDBK-217F@25℃＞300,000H			
Cooling Method	-	Free air convention			

EMC Characteristics

Total Item		Sub Item	Test Standard	Class
EMC	EMI	CE	CISPR22/EN55032	CLASS B (see recommended circuit Photo 2)
		RE	CISPR22/EN55032	CLASS B (see recommended circuit Photo 2)
	EMS	RS	IEC/EN61000-4-3	10V/m Perf.Criteria B (see recommended circuit Photo 2)
		CS	IEC/EN61000-4-6	3Vr.m.s Perf.Criteria B (see recommended circuit Photo 2)
		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

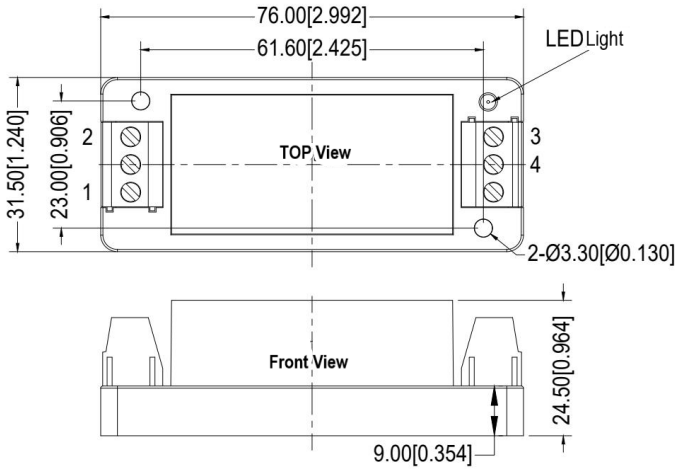
Y2 Dimension



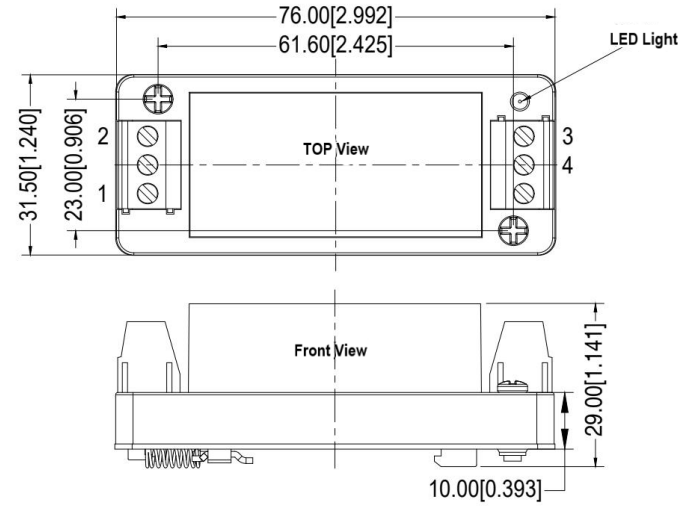


Unit:mm
Printed board vertical view
Grid:2.54(0.1inch)
General tolerance:±0.25mm
Pin tolerance:±0.10mm

Y2-T Dimension



Y2-TS Dimension



Packing Code	L x W x H	
Y2	50.8X25.4X15.6mm	2.000X1.000X0.614inch
Y2-T	76.0X31.5X24.5 mm	2.992X1.240X0.964inch
Y2-TS	76.0X31.5X29.0 mm	2.992X1.240X1.141inch

Pin Specification

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

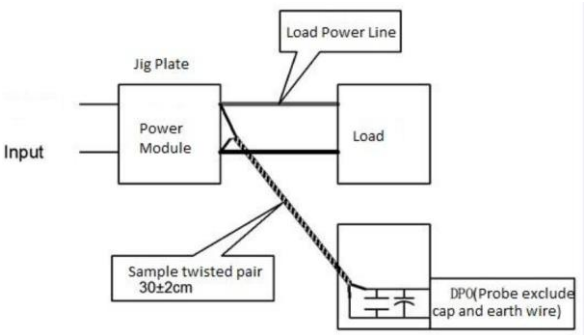
Note: If the definition of pin is not in accordance with the model selection manual, please refer to the label on actual item.

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

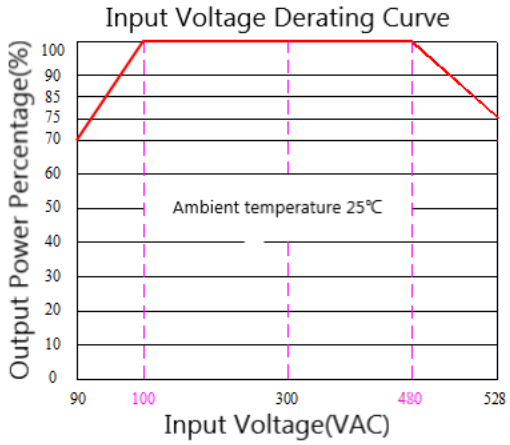
Test Method:

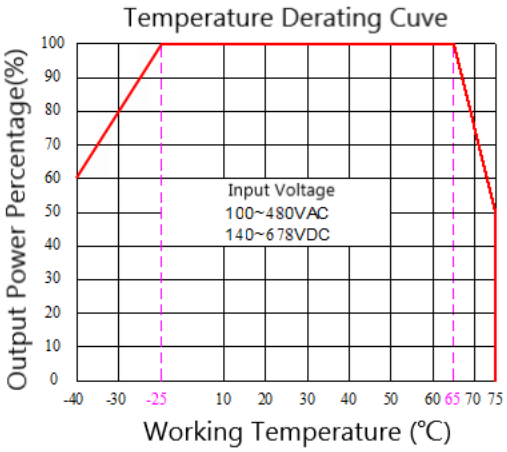
(1) 12# twisted pair to connect, Oscilloscope bandwidth set as 20MHz, 100M bandwidth probe, terminated with 0.1uF polypropylene capacitor and 10uF high frequency low resistance electrolytic capacitor in parallel, oscilloscope set as Sample pattern.

(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





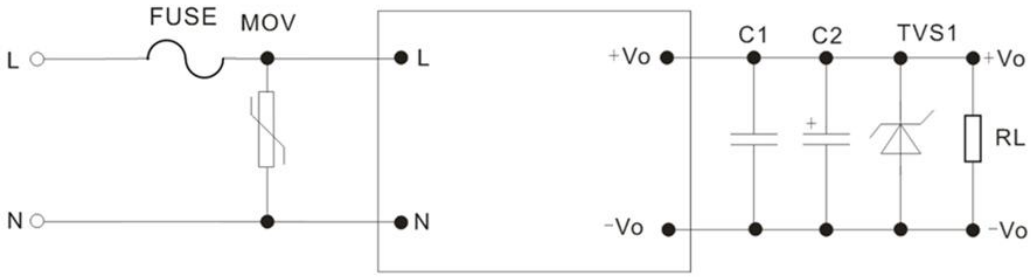
Note 1: Input Voltage should be derated based on Input voltage derating curve when it is 90~100VAC/480~528VAC/ 100~140VDC/678~745VDC.

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 Application Circuit

External Application Circuit:

Photo 1



Item	FUSE(necessary)	MOV	C1	C2	TVS tube
FA3-300S05Y2N3	1A/250V	10D951K	0.1uF/50V	47uF/16V(necessary)	SMBJ7.0A
FA3-300S12Y2N3				47uF/16V	SMBJ20A
FA3-300S15Y2N3				47uF/16V	SMBJ20A
FA3-300S24Y2N3				47uF/35V	SMBJ30A

EMC Application Circuit:

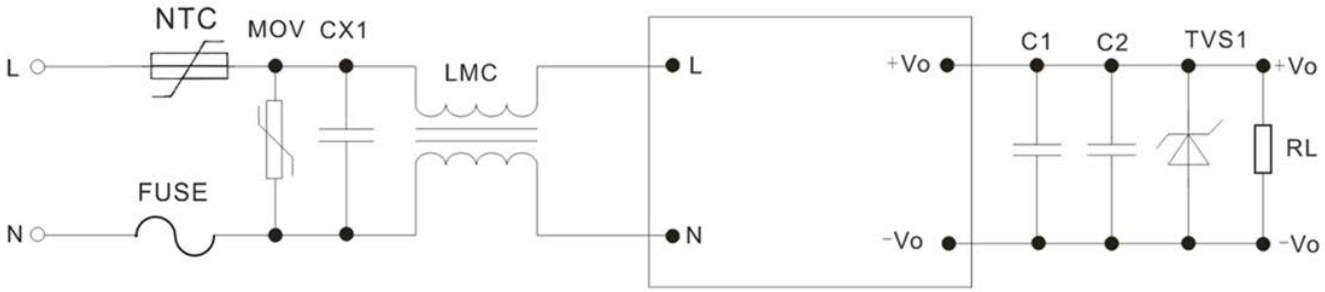


Photo 2

Note:

1) FUSE, recommended 2A~250Vac slow fusing, block shape;
2) MOV is piezorestitor, recommend 10D951K;
3) NTC is thermistor, recommend 10D-11, to protect post-circuit when lighting surging.
4) LMC is common mode inductor, recommend 30mH;
5) CX1 is X capacitor, recommend 0.22uF/275Vac;
6) C1 to choose high frequency low resistance electrolytic capacitors, capacitance lower than capacitive load, withstand voltage is 1.5 times above output voltage.
7) C2 choose 0.1uF ceramic chip capacitor, withstand voltage is 1.5 times above output voltage;

TVS1 is TVS tube, 5V output:SMBJ7.0A, 9V output:SMBJ12.0A, 12V output: SMBJ20A, 15V output: SMBJ20.0A, 24V output: SMBJ30.0A, 48V output: 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 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 **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, please follow up with our website for newest manual.