AM21-3W12V

100-250V to 12V 3W, AC-DC Power Supply Module



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1.Product introduction

1.1. Brief introduction

AM21-3W12V is series of low-power AC-DC step-down power supply module, module internal design strictly comply with UL60950 safety design specifications, and comply with FCC Part 15B:2016; EN55035:2017; EN61000-3-2:2014 EN 61000-3-3:2013, EN 55032:2015. Users do not need to add additional costs in the module peripherals, which greatly reduces the user design threshold. Wide voltage 100-250V input, maximum input up to 264V, all components from the regular procurement channels, users do not need to worry about stability, when in complex voltage environment ,it also can supply output steadily.



1.2. Characteristic

- Ultra-small volume: two installation modes (horizontal and vertical) are suitable for various applications.
- Over-current protection: The module can be automatically restored by preset constant current limitation internal Module.
- High-quality scheme: improving its work efficiency, the average efficiency of 80%.
- Over-temperature protection: Module internal preset maximum operating temperature, can be automatically restored.
- Short-circuit protection: the module is equipped with short-circuit protection measures, belching mode, automatic recovery after the elimination of fault status.
- Safety Specification: Module design conforms to UL60950, users do not need to add security authentication components in the module peripherals.

1.3. Application scenarios

- Intelligent home and Industrial sensors, etc.;
- Internal power supply system of security alarm;
- Industrial control;
- MCU motherboard, toys;
- Supply LED driving Lamp belt with Power;
- Intelligent street lamp;
- Intelligent switch, socket;

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2.Specification parameter

2.1. Limit parameter

No.	Main parameter	Minimum	Maximum	Remarks
1	Input voltage（Vac）	100	250	Work voltage should not exceed 250 Vac, otherwise it may be permanently damaged.
2	output power（W）	0	3	Load power should not exceed 100%. It is recommended that the load power should be less than 90%.
3	working temperature（℃）	-40	+80	Full load limit operating temperature is 60 ℃.

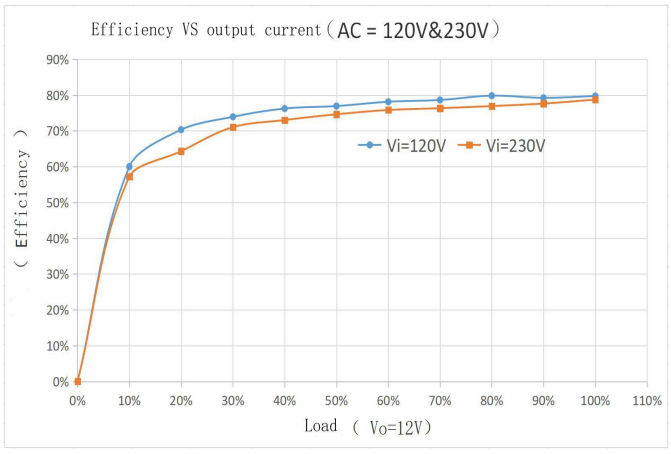
2.2. Work parameters

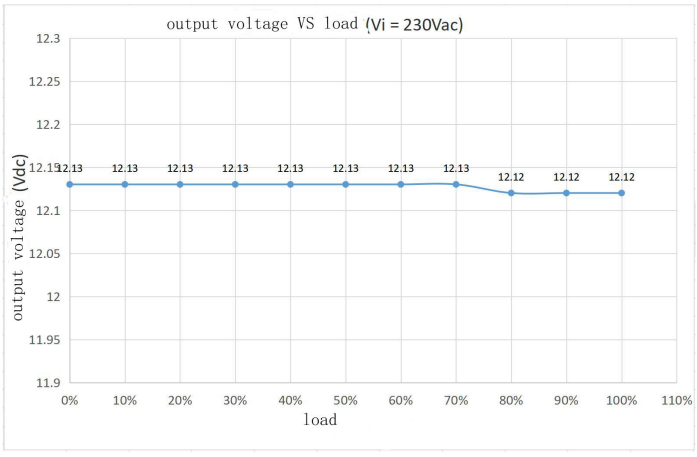
No.	Main parameter	Minimum	Typical value	Maximum	Remarks
1	Input voltage(Vac)	100	220	250	Recommended operating voltage : 110 ~ 250V
2	Work frequency(Hz)	-	50/60	-	Hz
3	Output power(W)	0	-	3	Maximum Continuous Output Power of 3 Watts
4	Work temperature (℃)	-40	+80	60	Full load operation
5	Power factor	0.4	-	0.55	>0.55 at 120Vac / >0.4 at 230Vac Full load
6	Surge current(Max)	-	-	10	10 A at 230 Vac
7	Static power (mA)	-	-	1.0	<=1 mA / 240Vac
8	Output voltage(Vdc)	11.9	12	12.2	V
9	Persistent current(A)	0	-	0.25	A
10	Ripple noise(mV)	12	-	30	mV

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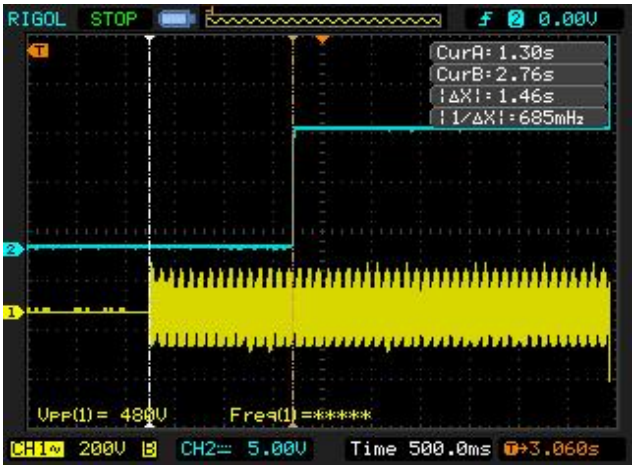
11	Average efficiency(n%)	-	80	-	%
12	Over current protection(%)	110	-	150	%
13	Short circuit protection	-	-	-	hiccup mode, automatic recovery after elimination of failure state
14	Work humidity (RH%)	20	-	90	non-condensing
15	Storage temperature (℃)	-40	+25	+80	Dry storage at normal temperature;
16	Storage humidity (RH%)	10	-	90	Dry storage at normal temperature;
17	Withstand voltage test	-	-	1500	I/P - O/P: 1500 KVAC
18	Insulation impedance	-	-	100	I/P - O/P: 100M ohms / 500VDC at 25 ℃

2.3. Work efficiency and load

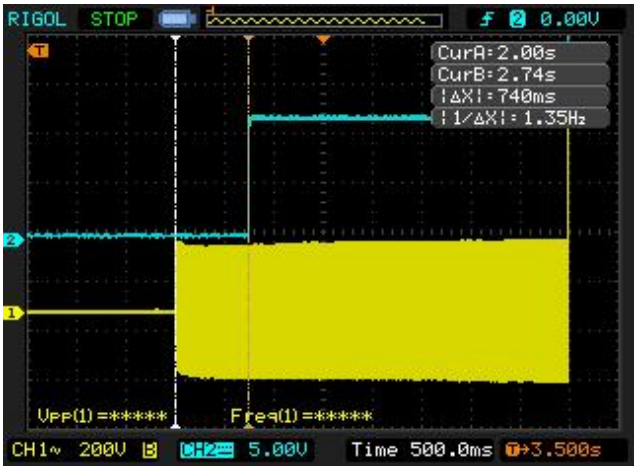




2.4. Boot time



INPUT:AC 120V OUTPUT:5V 0.6A

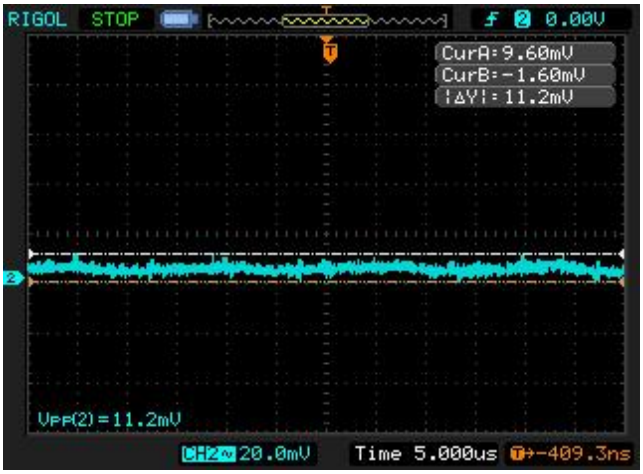


INPUT:AC 230V OUTPUT:5V 0.6A

2.5. Full-load ripple

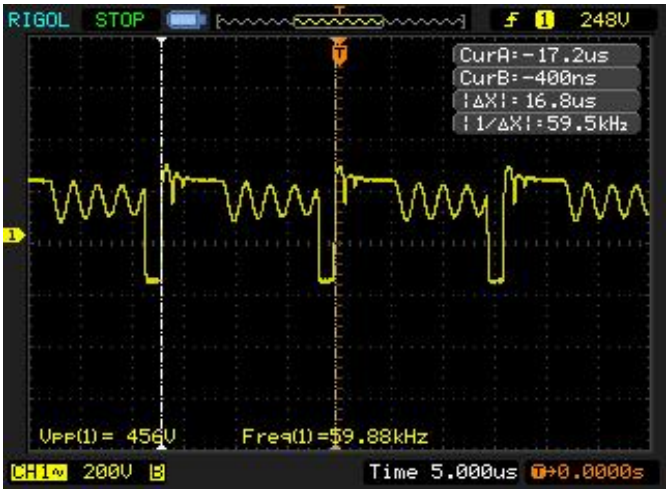


INPUT:AC 120V OUTPUT:5V 0.6A

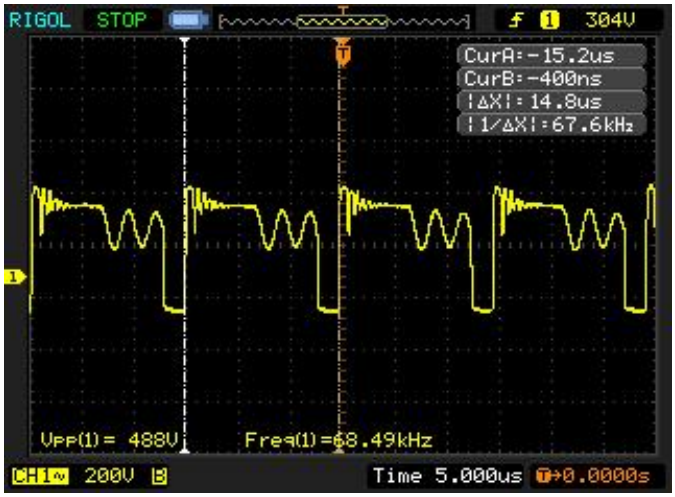


INPUT:AC 230V OUTPUT:5V 0.6A

2.6. Working frequency



INPUT:AC 120V OUTPUT:5V 0.6A



INPUT:AC 230V OUTPUT:5V 0.6A

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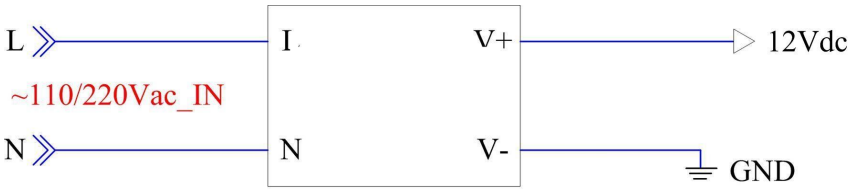
3.basic operation

3.1. Matters needing attention

- Operating this module requires certain professional skills, prohibit non-professionals operate on it!
- Before using it, you must study knowledge of safe use.
- Prohibit human body contact with L and N power lines after electrification to prevent accidents caused by electric shock.Recommend input front-end to Increase isolation.
- The maximum input voltage shall not exceed 250 Vac, otherwise may occur permanent damage .
- In daily maintenance, the input power should be disconnected to prevent from electric shock accidents.

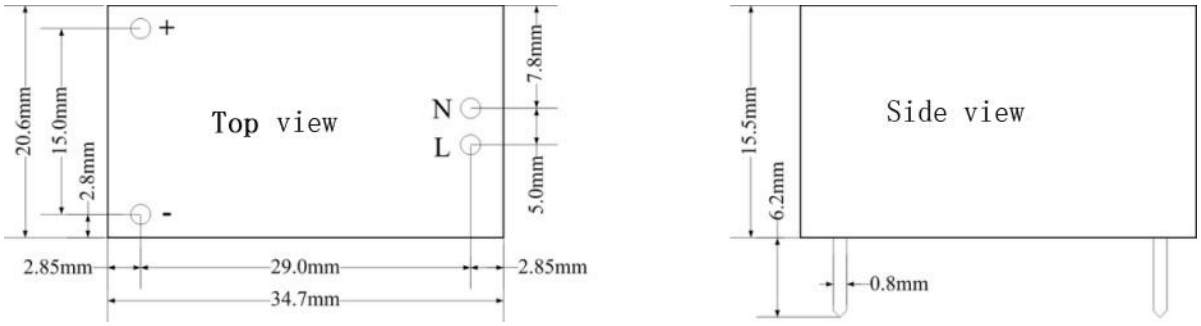
3.2. Typical application

*Note: Input and output need not add any components to meet the requirements of security certification.



4.Mechanical characteristics and pin definition

4.1. Product size



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4.2. Pin definition

No.	Pin name	Orientation	Use
1	L	input	AC power input: 100-250V, more than 250V will cause permanent damage to the module
2	N	input	AC power input: 100-250V, more than 250V will cause permanent damage to the module
3	-	output	direct-current output，power ground
4	+	output	direct-current output, positive power supply

5.Product selection

Product model	Input voltage	Output voltage	Output current	Efficiency	Installation mode
AM21-3W033V	100 ~ 250Vac	3.3Vdc	0.9A	75%	Plastic package plug-ins
AM21-3W05V		5.0V	0.6A	78%	Plastic package plug-ins
AM21-3W12V		12V	0.25A	80%	Plastic package plug-ins

Revision history

No.	vision	modification date	Revision notes	Maintain person
1	V1.0	20190301	First edition, first public release	Deng

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