AM22-24W1205V

24W Dual AC-DC Buck Power Supply Module



Chengdu Ebyte Electronic Technology Co.,Ltd.

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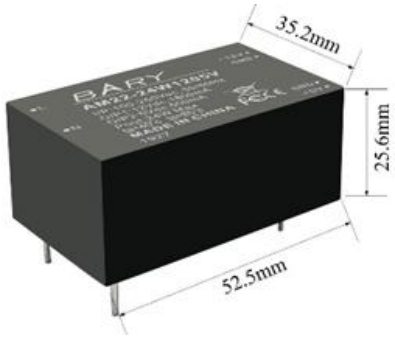
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1 Product Description

1.1 Introduction

AM22-24W1205V is a AC-DC 24W low power buck module, dual output is 12V + 5V, wide voltage input range: 100 ~ 250V, it max input can up to 264V, max dual-output total power is 24W; module internal design strictly comply with UL60950 safety design specification, and comply with FCC Part 15B:2016; EN55035:2017; EN61000-3-2:2014, EN 61000-3-3:2013, EN 55032:2015. Users do not have to add EMI and EMC related components at peripherals. which greatly reduces the users design threshold. All components come from formal purchasing channels, users do not need to worry about stability, even in complex voltage environment, it also can output steadily.



1.2 Features

- Ultra-small size: module size 52.5*35.2*25.6mm;
- Input voltage: global common voltage 85 ~ 264Vac/100 ~ 370Vdc;
- Recognized standards: comply with IEC60950、EN60950、UL60950 certification standard;
- Users needn’t to add EMI related components at peripherals;
- Protection measures: over voltage protection, over current protection, short circuit protection, over temperature protection;
- High quality scheme: greatly improve its work efficiency, with an average efficiency of 80%;
- Isolation withstand voltage: I/P - O/P: 3000 KV/AC;

1.3 Application scenarios

- Car charging pile;
- Security alarm;
- Intelligent home;
- Industry, power, instruments and meters;
- MCU;
- Intelligent street lamp, energy saving lamp;
- Smart switch, socket;
- RF communication equipment;

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2 Specifications

2.1 Limit parameter

Serial number	Main parameter	Minimum	Maximum	Remarks
1	Input voltage（Vac）	85	264	Vac
2	Input voltage（Vdc）	100	370	Vdc
3	Output power（W）	0	24	W
4	Work temperature（℃）	-40	+85	ta=40℃,tc=85℃

2.2 Working parameters

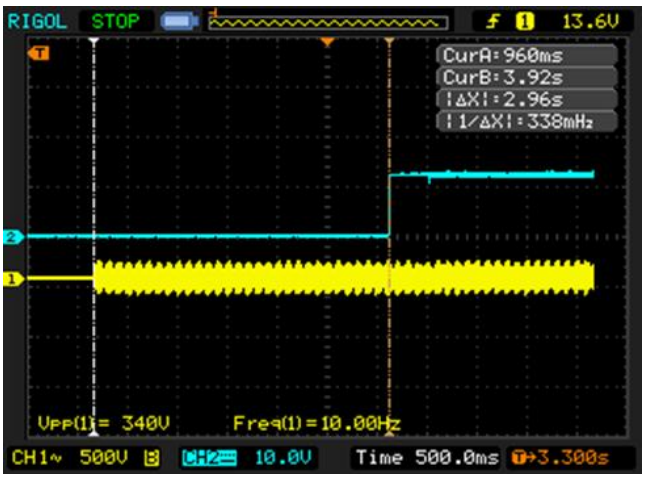
Serial number	Main parameter	Minimum	Typical value	Maximum	Remarks
1	Input voltage（Vac）	100	220	250	Vac
2	Input voltage（Vdc）	120	-	350V	Vdc
3	Working frequency	-	50/60	-	AC/50/60Hz
4	Output voltage1	11.9	12	12.2	Vdc
5	Output current 1	0	-	1800	mA
6	Output voltage2	4.9	5.0	5.1	Vdc
7	Output current 2	0	-	500	mA
8	Output power	0	-	24	W(Dual maximum continuous output total power is 24W)
9	Ripple noise	10	-	50	mV(With full load)

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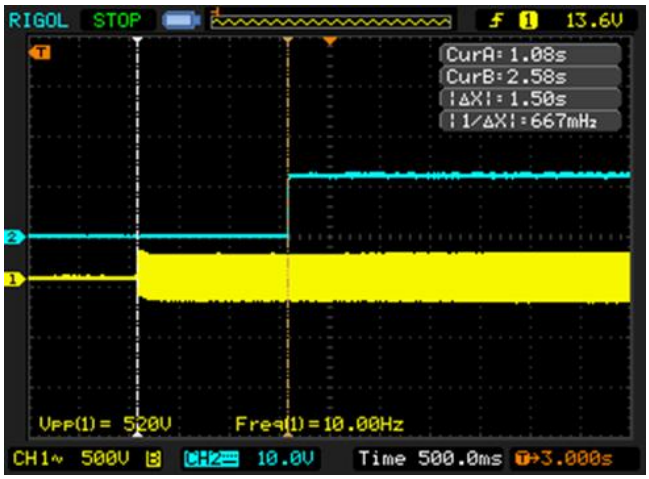
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10	Overall efficiency	-	-	80	%
11	Static power	-	-	1.0	< =1 mA / 240Vac
12	Over current protection	110	-	150	% (Constant current limit, automatic recovery.)
13	Short circuit protection	-	-	-	Hiccup mode, can be automatic Recover after eliminating the fault state.
14	Power factors	0.4	-	0.55	>0.55 at 120Vac / >0.4 at 230Vac with full load.
15	Work temperature	-40	+25	85	℃(ta=40℃,tc=85℃)
16	Storage temperature	-40	+25	+85	℃(Dry storage at room temperature)
17	Storage humidity	10	-	90	RH%(Dry storage at room temperature)
18	Withstand voltage	-	-	3000	Kv (I/P - O/P: 3000 KVAC)
19	Insulation impedance	-	-	100	I/P - O/P: 100M ohms / 500VDC at 25 ℃
20	Working humidity	20	-	90	RH%(No condensation)
21	Average service life	-	50000	-	Hours

2.3 Start-up time



INPUT: AC 120V

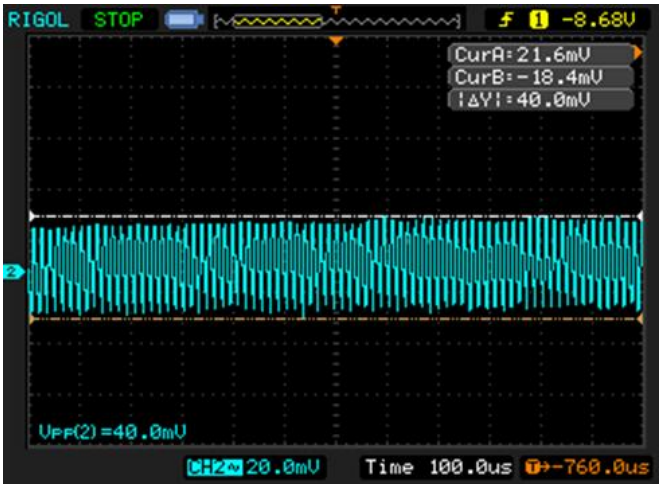


INPUT: AC 230V

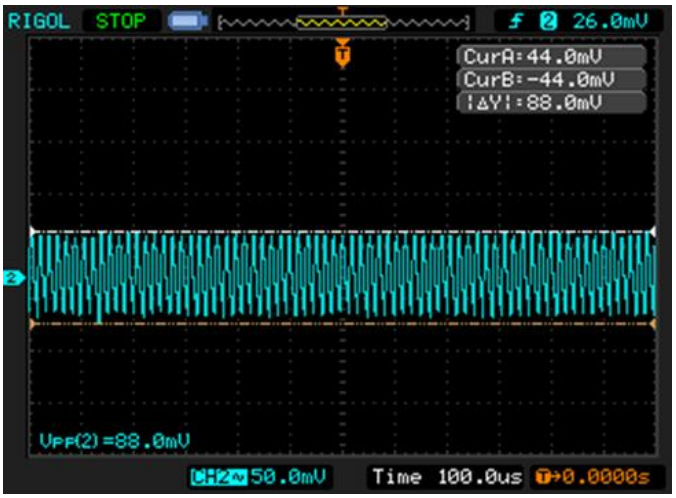
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2.4 Full load working ripple

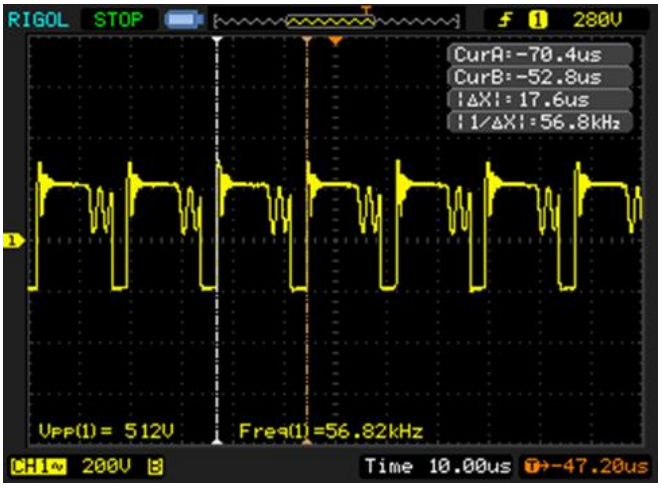


INPUT:AC230V,Vo=5V/500mA

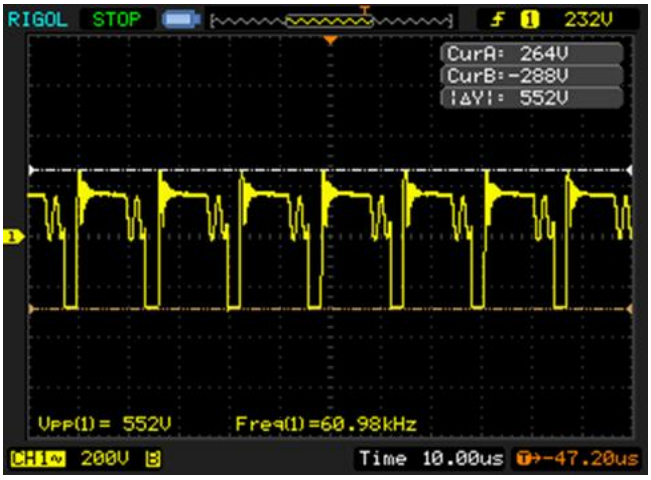


INPUT:AC230V,Vo=12V/1800mA

2.5 Working frequency and voltage



INPUT:AC 230V operating frequency



INPUT:AC 264 V limit voltage input, MOS peak value

3 Basic operation

3.1 Matters need attentions

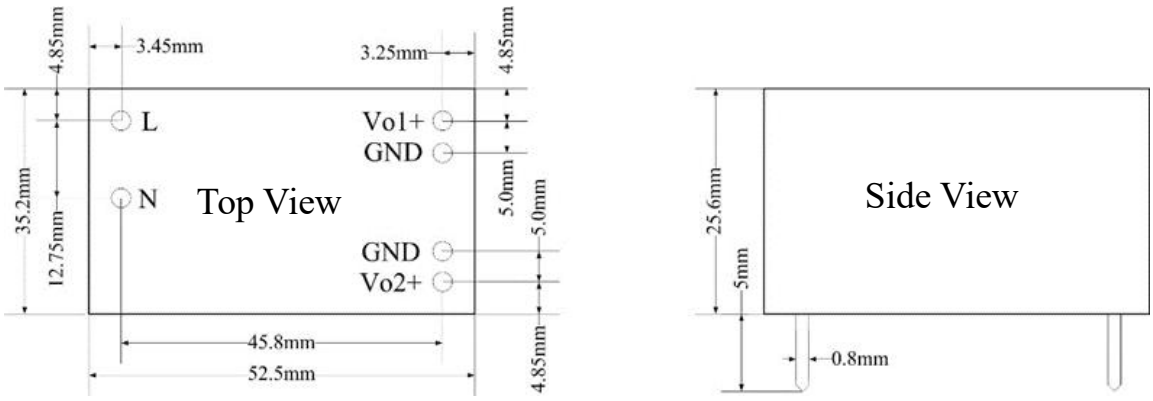
- Operating this module requires certain professional skills, prohibit non-professionals operate on it!
- Before using it, you must study Knowledge of safe use carefully.
- prohibit human body contact with L and N power lines after electrification to prevent accidents caused by electric shock.Recommend input front-end to increase isolation.
- The maximum input voltage shall not exceed 264 Vac, otherwise may occur permanent damage.
- In daily maintenance, the input power should be disconnected to prevent from electric shock accidents.

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4 Mechanical Characteristics and Pin Definitions

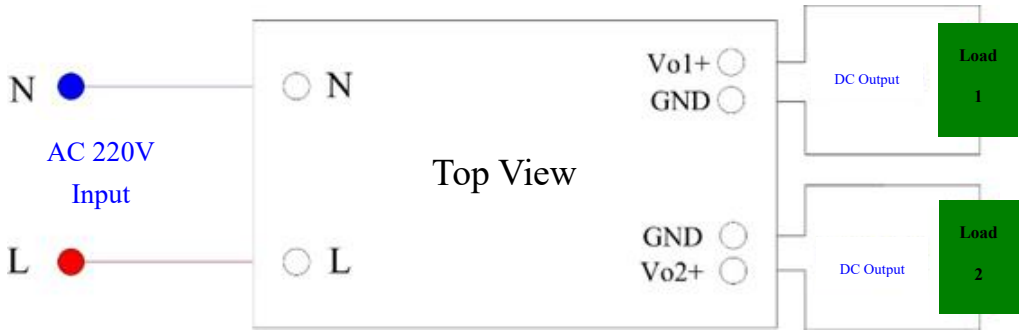
4.1 Product Size



4.2 Pin definition

Serial number	Pin name	Direction	Use
1	N	Input	AC power input.
2	L	Input	AC power input.
3	Vo2+	Output	5V DC output, positive power supply.
4	GND	Output	Vo2 DC output, positive power supply GND.
5	GND	Output	Vo1 DC output, positive power supply GND.
6	Vo1+	Output	12V DC output, positive power supply.

4.3 Typical application



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5 Product selection

Product model	Input voltage	Output 1	Output 2	efficiency	Installation mode
AM21-24W1205V	100 ~ 250Vac	12Vdc/1800mA	5Vdc/500mA	80%	Plastic package plug-ins
AM21-24W2405V	100 ~ 250Vac	24Vdc/900mA	5Vdc/500mA	83%	Plastic package plug-ins
AM21-24W2412V	100 ~ 250Vac	24Vdc/900mA	12Vdc/200mA	85%	Plastic package plug-ins

Revise history

serial number	Version	Modification date	Revision Notes	Maintenance man
1	V1.0	20190301	first edition, first release	Deng
2	V1.01	20191025	second edition, modify parameters	Deng

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