

## Key features

- Universal input :310 Vac,50/60Hz
- Small size (35\*25.4\*17.8mm)
- Low ripple and noise
- Output overload and short circuit protection
- Industrial design
- Lower power, RoHS , no-load loss <0.1W
- 100% test and work
- 1 year product warranty



RoHS

AES05 series --- a super small size modular module power supply offered by Zhongyiguang. The output power of this series module power supply is 5W, with extremely low no-load loss (< 0.1W), low leakage current, which is only 0.1mA, small size (35\*25.4\*17.8mm) and isolated pressure up to 4kv, etc. The product is safe and reliable, which has a good EMC. This series of products are widely used in smart home, high-end decorative lighting, medical, industrial, office and civil industries, such as applied to a relatively harsh environment electromagnetic compatibility must refer to the application circuit.

## Electrical specifications

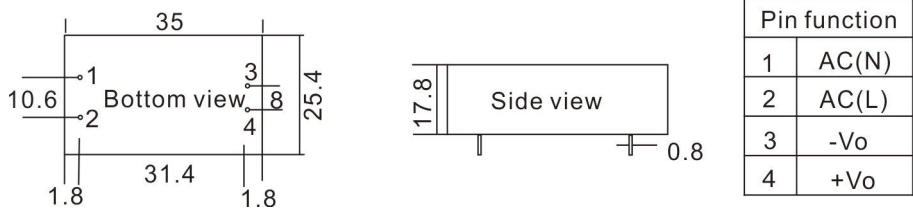
Model	Input voltage	Output Power(W)	Output voltage(V)	Output current(A)	Ripple(mv)	Efficiency (%)
AES05-S05	85~ 265VAC 80 ~ 370VDC	5	5	0.8	80	69
AES05-S09		5	9	0.55	80	75
AES05-S12		5	12	0.42	80	78
AES05-S15		5	15	0.33	80	79
AES05-S24		5	24	0.21	80	80

## General features

Output	Output voltage accuracy	±5.0%
	Source effect	±1.0%
	Load effect	±2.0%
	Starting time (TYP)	100ms/230VAC      200ms/115VAC at full load
	Output hold time (TYP)	40ms/230VAC      15ms/115VAC at full load
	Input	Input voltage range
Input frequency range		47 ~ 440Hz
Input current(TYP)		23m A / 230VAC
Inrush current(TYP)		30 A / 230 VAC
Recommended values for External Fuses		10Ω/1W
Leakage current(TYP)		<0.1mA at 265VAC/50Hz
Protection	Over-voltage, Over-current and short circuit protection, automatic recovery after troubleshooting	
Work environment	Operating Temperature	—40 ~ +70 °C (≥40°C, According to 0.1W/°C derating)
	Humidity	85% .RH max
	Storage Temperature	—40 ~ +85, 10 ~ 95% RH
	Temperature coefficient	0.03%/ (0~ 50°C)
	Vibration coefficient	10~500Hz,2G10min./1cycle, 60min.each along X,Y,Z axes
Safety and	Safety Standard      EN60950,EN60601,UL60950	

EMC (Note:3)	I/O-Isolation voltage	I/P-O/P:3000VAC
	Isolation resistance	I/P-O/P>100M Ohms/500VDC 25°C 70% RH
	EMI / RFI conducted	EN55011, EN55022 (CISPR22) CLASS B (Note: See the application circuit for details)
	ESD	IEC/EN 61000-4-2 level 4 8kV/15kV (Note: See the application circuit for details)
	RF	IEC/EN 61000-4-3 (Note: See the application circuit for details)
	EFT	IEC/EN 61000-4-4 level 4 4kV (Note: See the application circuit for details)
	SURGE	IEC/EN 61000-4-5 level 4 2kV (Note: See the application circuit for details)
Others	MTBF	200K hrs min. MIL-HDBK-217F(25)
	Dimension	35*25.4*17.8mm (L*W*H)
Notes	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25 of ambient temperature;	
	2. Ripple & noise are measured in accordance with the link of the application circuit in this manual, using a 300mm twisted pair-wire and 20MHZ bandwidth;	
	3. The power supply is considered a component which will be installed into a final equipment.The final equipment must be re-confirmed that it still meets EMC directives.	

## Dimension



## Typical application diagram

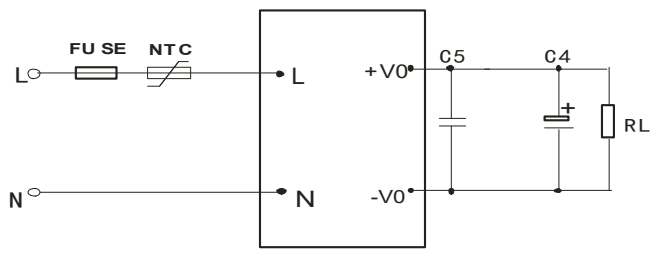


图1 图1 一般应用

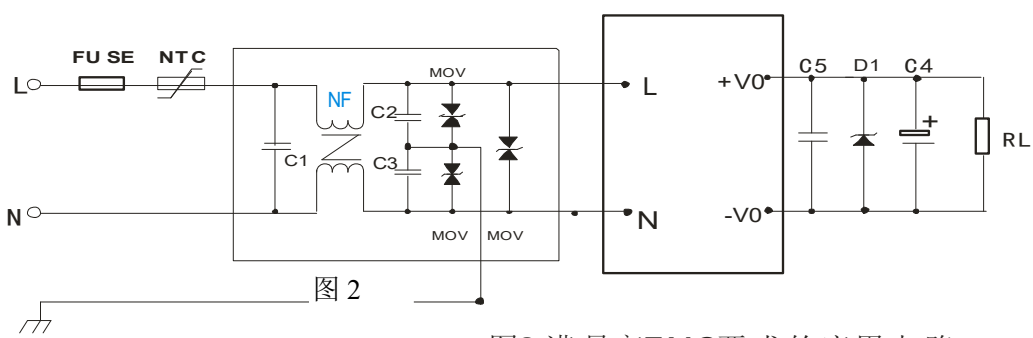


图2 满足高EMC要求的应用电路

Remark:

- 1.The output filter capacitor C4 is electrolytic capacitor, recommend using of high frequency and low resistance of electrolytic capacitors, the capacitance and the current flowing-through need refer to the technical specifications provided by the manufacturer. C5 is use to remove high frequency noise.
- 2.EMC filter used in the dashed box is to meet the higher requirements, if it is used in general applications, it can be omitted.
- 3.The company has formed a filter of C1, C2, C3 and NF in the dotted line for the customer to use, and the model is FA01.

### Typical values for external circuit components

Component Model	FUSE	NTC	NF	MOV	C1	C2, C3	C4	C5	D1
AES05-S05	T1A/ 250V	Recommend ed external NTC thermistor, model: 10D-9 Or 10Ω/2W resistance	NF is a common mode inductance, the inductance value is 30mH,current 0.2A-0.5A.	MOV is a piezoelectric resistor, recommend ed value is 14D471K	CX is the safety capacitor, 104K/275V	Safety capacitor Y 222K/400 V	470uF/16V	104K/50V (ceramic capacitor)	P6KE6.8A
AES05-S09							470uF/16V		P6KE16A
AES05-S12							220uF/16V		P6KE16A
AES05-S15							220uF/25V		P6KE20A
AES05-S24							100uF/35V		P6KE33A



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