

RoHS

Key features

- Wide voltage input: 185-265 Vac, 50/60hz
- Volume is only 30 * 20 * 15 mm
- 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

AES03-220 series --- a super small volume modular module power supply offered by Zhongyiguang. The output power of this series module power supply is 3W, with extremely low no-load loss (< 0.6W), low leakage current, which is only 0.1mA, small size (32.0*20.0*15.0mm) and isolated pressure up to 3kv, 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

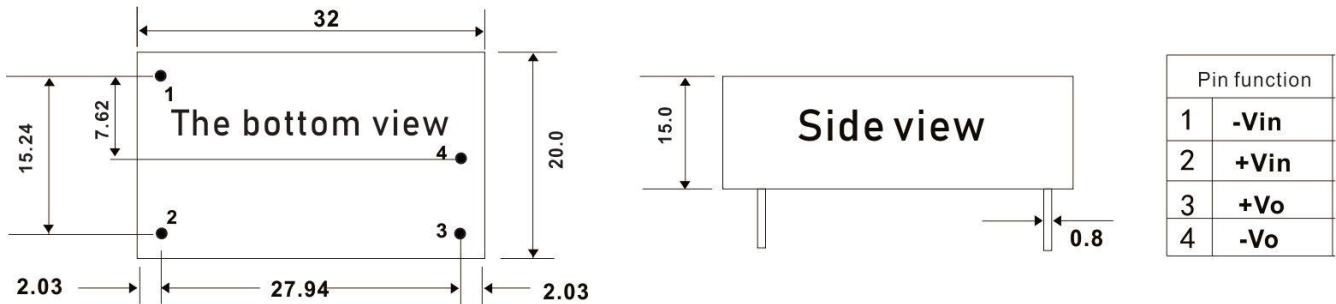
Model	Input voltage	Output Power(W)	Output voltage(V)	Output current(A)	Ripple(mv)	Efficiency (%)	
AES03-S05	185-265VAC	3	5	0.60	50	68	
AES03-S09		3	9	0.33	50	72	
AES03-S12		80-370VDC	3	12	0.25	50	73
AES03-S15		3	15	0.20	50	74	

General features

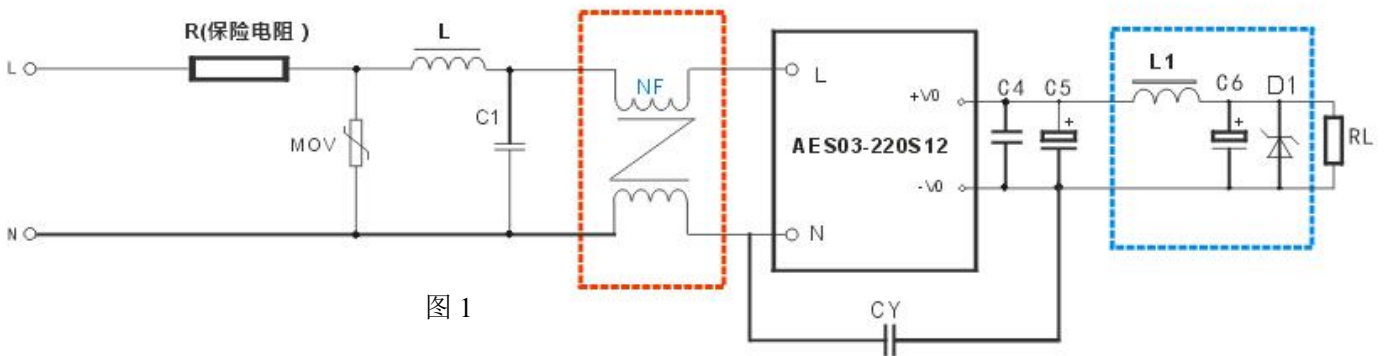
Output	Output voltage accuracy	±5.0%
	Source effect	±1.0%
	Load effect	±2.0%
	Starting time (TYP)	100ms/230VAC 200ms/115VAC at full load
	Output hold time (TYP)	40ms/230VAC 15ms/115VAC at full load
Input	Input voltage range	185~ 265VAC 80 ~ 370VDC
	Input frequency range	47 ~ 440Hz
	Input current (TYP)	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 ~ +60 °C (≥50°C, According to 0.05W/°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
Others	MTBF	200K hrs min. MIL-HDBK-217F(25)
	Dimension	32.0*20.0*15.0mm.
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



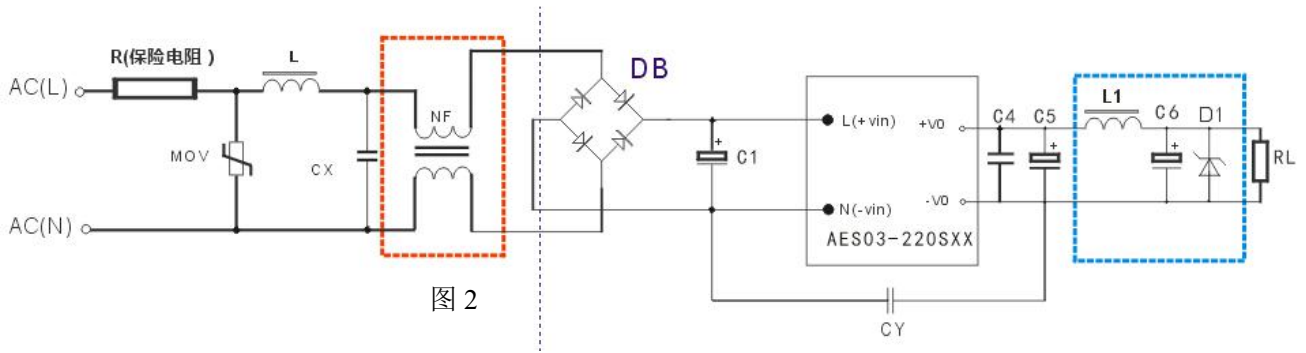


图 2

Remark:

1. The output filter capacitor C5 ,C6 is electrolytic capacitor, recommend using of high frequency and low resistance of electrolytic capacitors , the capacity and the current flowing-through need refer to the technical specifications provided by the manufacturer. C4 is to remove high frequency noise.
2. In FIG. 1, 2, the blue dotted line is designed to improve the output of the output. If the ripple is less than 50mV, the circuit should be added, such a if the ripple requirement is not high, it can be omitted.
3. Red dotted line in figure 1, 2 box of common-mode inductor and inductance L, X capacitor is to improve the EMC characteristics, in general, don't add, the company has put a dotted line frame L, CX, NF form a filter, used for customer, model for FA01
4. FIG. 2 is for power expansion. When the output power needs 5W and the input voltage is 85-264vac, the application of Ann figure 2 is applied.

Typical values for external circuit components

	R	NF	MOV	L	CX	CY	C4	C5	C6	L1
AES03-220S05	10Ω/ 2W	NF is a common mode inductance, L=30mH,0.2A- 0.5A.	MOV is a piezoelectric resistor, recommende d value is 14D471K	2m H / 0.2A	CX is the X safety capacito r, 104K/27 5V	Safety capacitor Y 222K/400 V	104K/50 V (ceram ic capacit or)	470uF/16V	220uF/16V	2-5uH
AES03-220S09								470uF/25V	220uF/25V	2-5uH
AES03-220S12								220uF/25V	100uF/25V	2-5uH
AES03-220S15								220uF/25V	220uF/16V	2-5uH



Zhongyiguang Guangzhou Technology Ltd

✉ : vice@zygkj.com

☎ : +86(20) 3287 4481 / 2292 1551

📍 : NO.2, building 4, NO.8, DouTang Road, YongHe Economic Zone, GuangZhou City, P. R. China