



Standard package



RoHS

### Key features

- Ultra small size
- Ultra high efficiency, up to 88%
- Wide Input Range:90-264 Vac,50/60Hz
- Low ripple and noise, output protection
- Lower power, RoHS , no-load loss is less than 0.1W
- Semiconductor devices adopt international ON first line brand
- Ruby 1W hours long life capacitor
- 3 Years product warranty

ZP20 series --- a super small size modular module power supply offered by Zhongyiguang. The output power of this series module power supply is 20 W, with extremely low no-load loss (< 0.1W), low leakage current, which is only 0.1mA, small size (53.96\*28.98\*23.50mm) and isolated pressure up to 4kv, etc. The product is safe and reliable, which has a good EMC. EMC and safety specifications meet the IEC/EN61000-4, CISPR22/EN55022, UL60950/EN60950/EN60601 and other related standards. 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 (%)
ZP20-S09	90-264Vac	20	9.0	2.22	50	80
ZP20-S12	90-264Vac	20	12	1.66	50	85
ZP20-S15	90-264Vac	20	15	1.33	50	86
ZP20-S24	90-264Vac	20	24	0.83	50	88

**Notes: The connection type product is added directly to A after the product model, such as:ZP20-S05A**

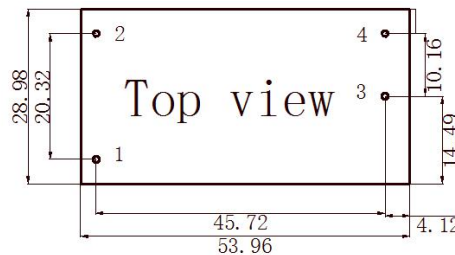
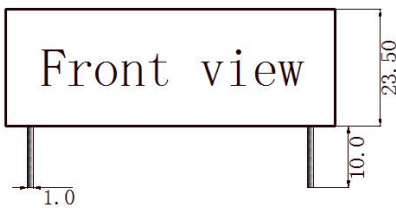
### General features

Output	Output voltage accuracy	±2.0%
	Source effect	±1.0%
	Load effect	±1.0%
	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	90~ 264VAC      80 ~ 370VDC
	Input frequency range	47 ~ 440Hz
	Input current (TYP)	435m A / 115VAC      270m A / 230VAC
	Inrush current(TYP)	30 A / 230 VAC
	Recommended values for External Fuses	T2A/250V
	Leakage current (TYP)	< 0.1mA at 265VAC/50Hz
Protection	Over-voltage, Over-current and short circuit protection, automatic recovery after troubleshooting	
Work	Operating Temperature	—40 ~ +70 °C (≥40°C, According to 0.3W/°C derating)
	Humidity	85% .RH max



environment	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 EMC (Note:3)	Safety Standard	EN60950,EN60601,UL60950
	I/O-Isolation voltage	I/P-O/P:4000VAC
	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	53.96*28.98*23.50mm
	Weight	57g/piece 7.2kg/box
	Package	112PCS/ Per box
	size of packing box	360*300*250mm
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

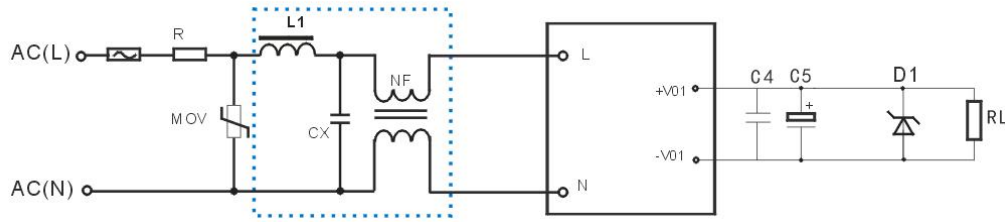
## Dimension



ZP20-SXX Pin function	
PIN	SINGLE
1	AC IN(N)
2	AC IN(L)
3	-DC OUT
4	+DC OUT

**Remark: unit of Measurement: mm; terminal length: ≥4.0mm; size of terminal section: 1.00mm; terminal tolerance: ±0.1mm; no tolerance: ±0.5mm**

## Typical application diagram



Remark:

1. The output filter capacitor C4 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. C5 is use to remove high frequency noise.
2. In FIG. 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. Our company makes the circuit(L1、CX、NF) in the dashed box into products, and named: FA01 and can be used with switching power supply.

## Typical values for external circuit components

Component Model	FUSE	R	NF	MOV	CX	L1	C5	C4	D1
ZP20-S09	T2A/250 V	Recomm ended external NTC thermistor, model: 10D-9	NF is a common mode inductance, the inductance value is 30mH,current 0.6A.	MOV is a piezoelectric resistor, recommended value is 14D471K	CX is the safety capacitor, 104K/275 V	1mH/0.6 A	470uF/16V	104K/50V ( ceramic capacitor )	P6KE6.8A
ZP20-S12							470uF/16V		P6KE6.8A
ZP20-S15							150uF/16V		P6KE16A
ZP20-S24							120uF/16V		P6KE16A



### 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