TP01(02)AZ Series



DESCRIPTION : **1W, 2W 3KVAC Isolation Wide Input AC/DC Converters**

The rated output power of TP01(02)AZ series is 1W,2W with wide input voltage range, for both AC input and DC input application. High reliability, Low power consumption, low leakage current 0.1mA, High isolation. Product safe and reliable,Good EMC performance,EMC And meet the safety specifications of IEC/EN61000-4、CISPR22/EN55022、UL62368/EN662368/IEC62368. Widely used in industrial control and electrical instrumentation, smart home, which do not have high requirement on EMC.

The EMC external circuit must be added if the products need to be applied to EMC harsh environment.

FEATURES

ultra-small size ， width is only1.5CM , plastic case	Universal input voltage range	Low Ripple & Noise、Output protection
Lower power consumption, no-load loss<0.05W	Built-in EMI filter circuit	RoHS compliant

SELECTION GUIDE

Part Number	Input Voltage		Output		Efficiency (Typ.) %	Ripple (mv)
	VAC	VDC	Voltage (VDC)	Current (mA)		
TP01AZ220S03W	85-305	80-400	3.3	300	62	150
TP01AZ220S05W	85-305	80-400	5	200	68	150
TP01AZ220S09W	85-305	80-400	9	111	70	150
TP01AZ220S12W	85-305	80-400	12	83	71	150
TP01AZ220S15W	85-305	80-400	15	67	71	150
TP01AZ220S24W	85-305	80-400	24	42	74	150
TP02AZ220S03W	85-305	80-400	3.3	600	64	150
TP02AZ220S05W	85-305	80-400	5	400	70	150
TP02AZ220S09W	85-305	80-400	9	222	73	150
TP02AZ220S12W	85-305	80-400	12	167	75	150
TP02AZ220S15W	85-305	80-400	15	133	75	150
TP02AZ220S24W	85-305	80-400	24	83	77	150

All specifications typical at TA=25°C, nominal input voltage and rated output current unless otherwise specified.

INPUT CHARACTERISTICS

Voltage range	85~ 305VAC,80 ~ 400VDC
Input frequency	47 ~ 440Hz
Input current (Typ.)	55m A / 115VAC,34m A / 230VAC
Inrush Current (Typ.)	20 A/230 VAC
Recommended values for External Fuses	10Ω/1W(Fusible Resistor)
Leakage current (Typ.)	＜0.1Ma at 265VAC/50Hz

OUTPUT CHARACTERISTICS

Output Voltage accuracy	±3.0% (±5.0% max)
Line regulation	±1.0%
Load regulation	±1.0%
Start rising time(Typ.)	20ms/230VAC 50ms/115VAC at full load
Start holding time(Typ.)	40ms/230VAC 15ms/115VAC at full load
Short circuit protection	Over-Load protection , Over-Current protection ,Short circuit protection , Auto recovery

GENERAL CHARACTERISTICS

Operating temperature	—40 ~ +80 ℃ (≧50℃, derating @0.011W/℃)
Operating humidity	85% .RH max
Storage temperature	－40 ~ +85, 10 ~ 95% RH
Temperature coefficient	0.03%/ (0~ 50℃)
Vibration coefficient	10~500Hz,2G10min./1cycle, 60min.each along X,Y,Z axes

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SAFETY AND ELECTROMAGNETIC COMPATIBILITY

Safety standard	EN60950,EN60601,UL60950
Isolated Voltage	I/P-O/P:3000VAC
Isolated resistance	I/P-O/P>100M Ohms/500VDC 25℃ 70% RH
Conduction and radiation	EN55011, EN55022 (CISPR22) CLASS B (See the application note for details)
Electrostatic discharge (ESD)	IEC/EN 61000-4-2 level 4 8kV/15kV (See the application note for details)
Radiofrequency radiation immunity(RF)	IEC/EN 61000-4-3 (See the application note for details)
Electrical fast transient(EFT)	IEC/EN 61000-4-4 level 4 4kV
Surge	IEC/EN 61000-4-5 level 4 2kV

OTHER CHARACTERISTICS

MTBF	200K hrs min. MIL-HDBK-217F(25)
Dimension	32*20*15mm

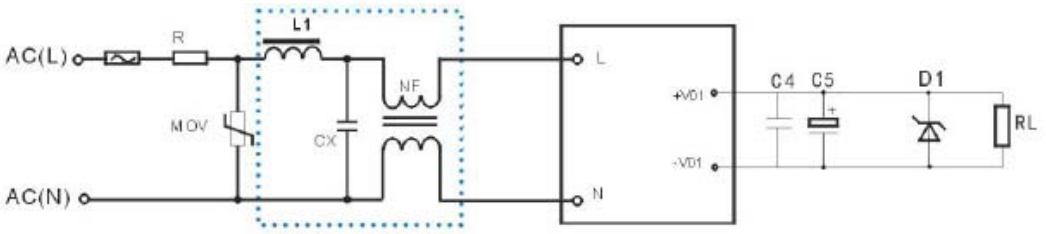
NOTES

1.The above data except for special instructions, are measured at TA = 25oC, humidity <75%, input nominal voltage 230Vac and output rated load

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

TYPICAL APPLICATION CIRCUIT



Notes:

1.The output filter capacitor C5 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 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.

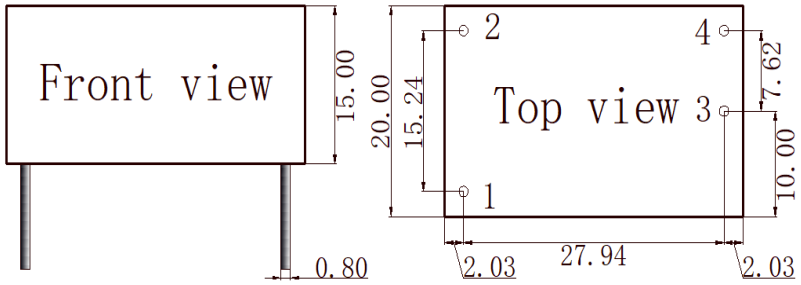
3. Our company make the filter circuit in the dashed box，which can be used with switching power supply

Component / Part No.	Fuse	R	NF	MOV	L1	CX	C4	C5	D1
TP01AZ220S03W	10Ω /1W	No connection	NF is a common mode inductance, the inductance value is 30mH,current0.2A-0.5A	MOV is a piezoelectric resistor, recommended value is 14D471K	1mH /0.5A	CX is the safety capacitor 104K /275V	104K/50V (ceramic capacitor)	1000uF/10V	P6KE6.8A
TP01AZ220S05W								1000uF/10V	P6KE6.8A
TP01AZ220S09W								680uF/16V	P6KE16A
TP01AZ220S12W								680uF/16V	P6KE16A
TP01AZ220S15W								470uF/25V	P6KE20A
TP01AZ220S24W								220uF/35V	P6KE33A
TP02AZ220S03W								1000uF/10V	P6KE6.8A
TP02AZ220S05W								1000uF/10V	P6KE6.8A
TP02AZ220S09W								680uF/16V	P6KE16A
TP02AZ220S12W								680uF/16V	P6KE16A
TP02AZ220S15W								470uF/25V	P6KE20A
TP02AZ220S24W								220uF/35V	P6KE33A

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MECHANICAL DIMENSIONS

DIP packaging

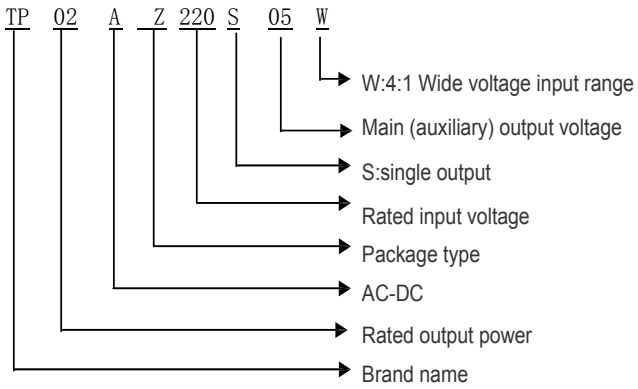


Units:mm Tolerance:±0.2mm

PIN CONNECTIONS

Pin	Single Output
1	L
2	N
3	+Vo
4	-V0

SELECTION GUIDE



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