



DESCRIPTION: 3W 3KV Isolation Wide Input AC/DC Converters

The rated output power of PP03AZ series is 3W with wide input voltage range, for both AC input and DC input application. High reliability, precision, large power density, ultra-small size, no external heat sink required, stable output voltage and etc, with over current protection, 3000V isolation voltage, short circuit, overload, internal thermal protection, Widely used in telecommunications, industrial control, instrument, data acquisition, signal control and other electronic systems.

FEATURES

Universal input voltage range	Both for AC and DC input voltage	Wide input voltage 4:1
Fixed switching frequency	Overheat protection	Over current protection
Short circuit protection	RoHS compliant	Operating temperature : -40°C to 70°C

SELECTION GUIDE

Part Number	Input Voltage		Output		Efficiency (Typ.) %
	(VAC)	(VDC)	Voltage (VDC)	Current (A)	
PP03AZ220S03W	85-265	120-370	3.3	0.6	64
PP03AZ220S05W	85-265	120-370	5	0.6	70
PP03AZ220S09W	85-265	120-370	9	0.33	74
PP03AZ220S12W	85-265	120-370	12	0.25	76
PP03AZ220S15W	85-265	120-370	15	0.2	77
PP03AZ220S024W	85-265	120-370	24	0.12	78

- PP03AZ220S24W is 1.5KVAC isolated , others are 3KVAC isolated

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

INPUT CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Max.	Units
Startup voltage	VDC In module	120	220	370	VDC
Startup voltage	VAC In module	85	220	265	VAC
Input Current	115VAC		75		mA
Input Current	230VAC		47		mA
Inrush current	115VAC		10		A
Inrush current	230VAC		30		A
Input frequency	47 ~ 440Hz				
Input current	45mA / 115VAC	23m A / 230VAC			

OUTPUT CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Max.	Units
Voltage accuracy	$I_o=0.1 \dots 1.0 \times I_{onom}$ $V_i=V_i$ rated			±2	%
				±1	%
Line regulation	$V_{imin} < V_i < V_{imax}$		±0.1		%
Load regulation	$I_o=0.1 \dots 1.0 \times I_{onom}$ $V_{imin} < V_i < V_{imax}$			±1	%
Ripple and noise	20MHz bandwidth		50	100	mVp-p
Over-current protection	$V_{imin} < V_i < V_{imax}$	120			%
Switch frequency	$V_{imin} < V_i < V_{imax}$		100K		Hz

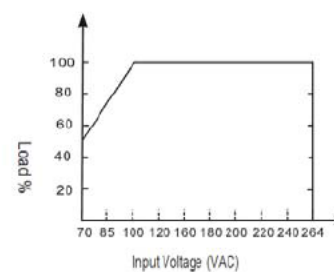
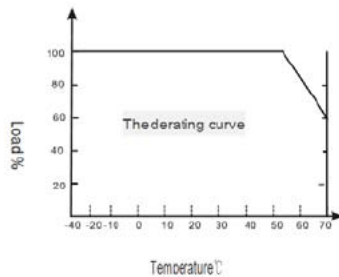
ENVIRONMENT CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Max.	Units
Operating temperature	industrial-class	-40		+70	°C
Maximum case temperature	industrial-class			+95	°C
Storage temperature	Industry-class	-40		+85	°C
Storage humidity		10		95	RH(%)
Temperature coefficient			±0.03		%/°C

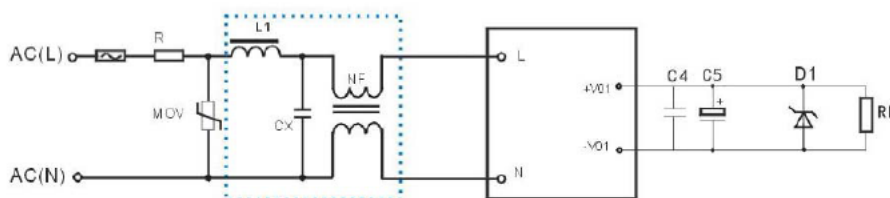
GENERAL CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Max.	Units
Isolation voltage	Input / Output 1 minute, leakage current 2mA	1500		3000	VAC
Seismic	10-55Hz	5		5	G
Over current protection	Full input range	Auto recovery			
Cooling	Free air convection				
Case material	Flame-retardant plastic				
Fuse	T0.5A/250V				
NTC	20Ω/1W				
NF	3-10mH, 0.2A-0.5A				
MOV	7D471K				
Leakage Current	< 1mA at 230VAC/50Hz				
Isolation resistance	I/P-O/P>100M Ohms/500VDC 25°C 70% RH				
EMI / RFI conducted	EN55011, EN55022 (CISPR22) (For details, see the application notes)				
ESD	IEC/EN 61000-4-2 level 4 8kV/15kV (For details, see the application notes)				
RF	IEC/EN 61000-4-3(For details, see the application notes)				
EFT	IEC/EN 61000-4-4 level 4 4kV(For details, see the application notes)				
Surge	IEC/EN 61000-4-5 level 4 2kV(For details, see the application notes)				
MTBF	200K hrs min. MIL-HDBK-217F(25)				
Dimension	32*20.0*15mm (L*W*H)				

Output Derating



TYPICAL APPLICATION CIRCUIT

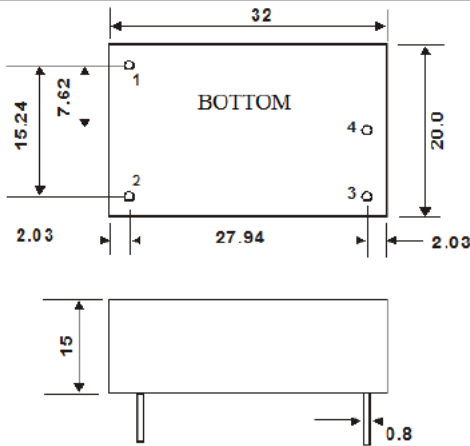


1. The output filter capacitor C5 is electrolytic capacitor, recommend using of high frequency and low resistance of electrolytic capacitors, the capacity and the current flowing-through need refer to the technical specifications provided by the manufacturer. C4 is use to remove high frequency noise.
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 makes the filter (L1, CX, NF) in the dashed box into products, and named FA01 and can be used with switching power supply.

TYPICAL APPLICATION CIRCUIT

Component	FUSE	R	NF	MOV	CX	L1	C5	C4	D1
PP03AZ220S03W	10Ω/1 W	No connection	NF is common mode inductance, inductance value in 30mH, current 0.2A-0.5A.	MOV is the voltage resistance and the recommended value is 14D471K	CX is the safety capacitance, 104K/275 V	1Mh/0.5 A	470uF/16V	104K/50V (Ceramic capacitors)	P6KE6.8A
PP03AZ220S05W							470uF/16V		P6KE6.8A
PP03AZ220S09W							150uF/16V		P6KE16A
PP03AZ220S12W							120uF/16V		P6KE16A
PP03AZ220S15W							120uF/25V		P6KE20A
PP03AZ220S24W							100uF/35V		P6KE33A

MECHANICAL DIMENSIONS



Pin	Function
1	AC(L)
2	AC(N)
3	+Vo
4	-Vo

* Pin not fitted on single output variants

Units:mm

Tolerance:±0.2mm

SELECTION GUIDE

