



### DESCRIPTION: 6W 4KVAC Isolation Wide Input AC/DC Converters

The rated output power of PP06AC series is 6W 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, EMI filter circuit, the rectifier filter circuit, 4000V 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	AC and DC dual-use	Wide input voltage: 4:1
Low power consumption	High efficiency, high power density, ultra-small size	Over current protection, Short circuit protection
Low Ripple & Noise	RoHS compliant	Operating temperature: -40°C to 70°C

### SELECTION GUIDE

Part Number	Input		Output		Efficiency (typ.) %
	Voltage (VAC)		Voltage (VDC)	Current (A)	
	VAC	VDC			
PP06AC220S05W	85-265	120-370	5	1.20	69
PP06AC220S09W	85-265	120-370	9	0.66	73
PP06AC220S12W	85-265	120-370	12	0.50	75
PP06AC220S15W	85-265	120-370	15	0.40	76
PP06AC220S24W	85-265	120-370	24	0.25	78

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

### INPUT CHARACTERISTICS

Parameter	Conditions	Mini.	Typ.	Max.	Units
Voltage range	DC Input	120	220	370	VDC
Voltage range	AC Input	85	220	265	VAC
Input frequency		50		60	HZ
Input Current	115VAC			120	mA
Input Current	230VAC			70	mA
Inrush current	115VAC		16		A
Inrush current	230VAC		30		A
External fuse recommended value		1A/250V, slow fusing, necessary			
Hot plug		Unavailable			

### OUTPUT CHARACTERISTICS

Parameter	Conditions	Mini.	Typ.	Max.	Units
Output voltage accuracy				±2	%
Line regulation				±1	%
Load regulation				±1	%
Short-circuit protection	Overvoltage, overcurrent, short circuit protection, self-recovery				
Ripple & Noise	20MHz bandwidth (peak-peak value)		50	100	mv
Temperature Coefficient			±0.03		%/°C
Start rising time	115VAC Input while full-load		50		ms
Start rising time	230VAC Input while full-load		20		ms
Output hold time	115VAC Input while full-load		15		ms
Output hold time	230VAC Input while full-load		40		ms

### TEMPERATURE CHARACTERISTICS

Parameter	Conditions	Mini.	Typ.	Max.	Units
Isolation voltage	Tested for 1 min.	4000			VAC
Operating Temperature	According to the output load derating curve	-40		+70	°C
Storage Temperature		-40		+85	°C
Storage Humidity		10		95	% .RH max

- Case temperature shall not exceed the maximum case temperature.

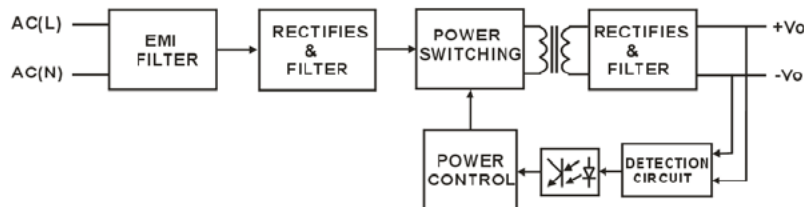
### SAFETY & ELECTROMAGNETIC COMPATIBILITY

Safe standard	UL1012,EN60950 ,UL60950
Isolated voltage	I/P-O/P:4000VAC
Isolation resistance	I/P-O/P>100M Ohms/500VDC 25°C 70% RH
Conduction and radiation	EN55011, EN55022 (CISPR22) CLASS B
Electrostatic discharge( ESD)	IEC/EN 61000-4-2 level 4 8kV/15kV
Rf radiation immunity (RF)	IEC/EN 61000-4-3
EFT	IEC/EN 61000-4-4 level 4 4kV ( Note: see application circuit for details )
Surge	IEC/EN 61000-4-5 level 4 2kV ( Note: see application circuit for details )
MTBF	200K hrs min. MIL-HDBK-217F(25)

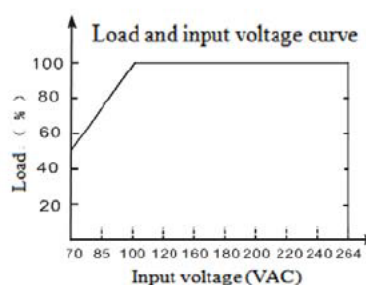
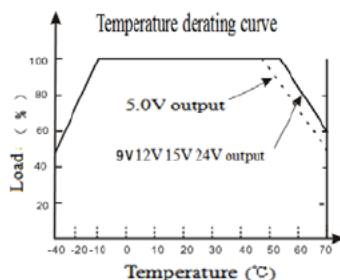
### NOTES

- 1.The above data, except for special instructions, are measured at TA = 25°C, humidity <75%, input nominal voltage 230Vac and output rated load
- 2.Ripple and noise are measured in the case of a bandwidth of 20MHz according to the application circuit of this manual, using a 300mm twisted pair and the terminal is connected in parallel with a 0.1uF high frequency ceramic capacitor and a 47uF electrolytic capacitor at the same time.
- 3.The parts in the system is considered as a component, need to combine the terminal equipment for electromagnetic compatibility related confirmation.

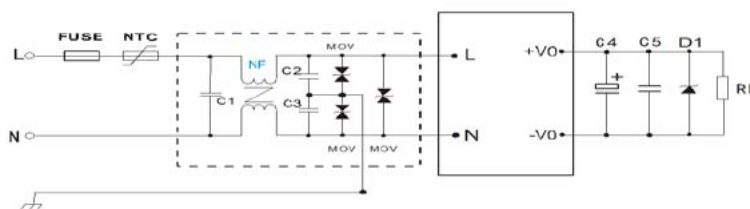
### PRODUCT SCHEMATIC



### DERATING CURVE



### TYPICAL APPLICATION CIRCUIT



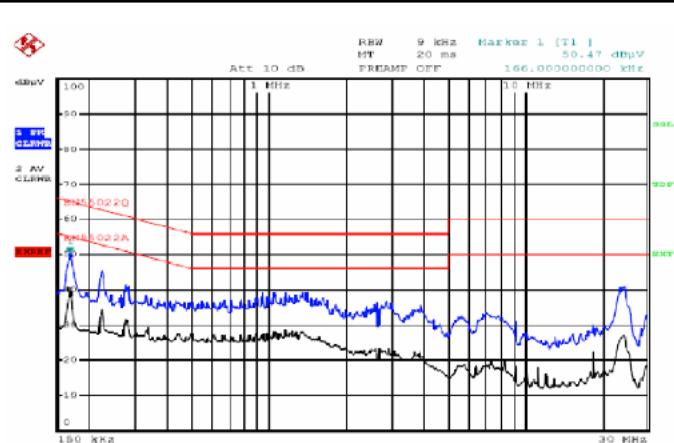
### NOTES

1. The output filter capacitance C4 is the electrolytic capacitor. It is recommended to use the high frequency low resistance electrolytic capacitance, the capacity and the current of the flow. Please refer to the technical specifications provided by the manufacturers. Capacitance pressure reduction is greater than 80%. The C5 is to remove the high frequency noise. D1 is recommended for the TVS tube to protect the rear circuit (when the module is abnormal).
2. The dashed box is an EMC filter that is accessible for higher EMC requirements, which can be omitted while general applications
3. We has formed a filter for C1, C2, C3 and NF, for the customer to use, the model is FA01.

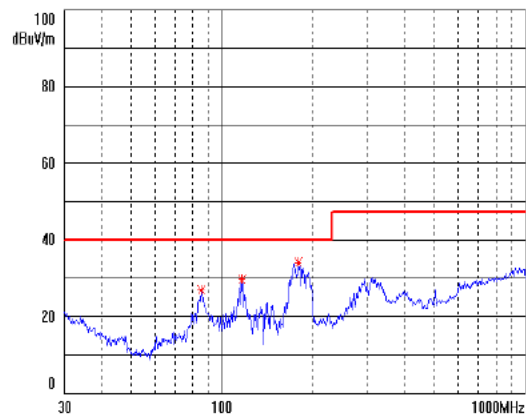
### TYPICAL APPLICATION CIRCUIT

Component	FUSE	NTC	NF	MOV	C1	C2, C3	C4	C5	D1
PP06AC220S05W	T1A /250V	Recomm ended external NTC thermisto r, model: 10d-9	NF is common mode inductance, inductance value in 10mH, current 0.2a-0.5 A.	MOV is the voltage resistance and the recomm ended value is 14D471K	C1 is the safety X capacit ance, 104K / 275V	C2,C3 is the safety Y capacitanc e, 102K/400 V	470uF/16V	104K/50 (Ceramic capacitors )	P6KE6.8A
PP06AC220S09W							150uF/16V		P6KE16A
PP06AC220S12W							120uF/16V		P6KE16A
PP06AC220S15W							120uF/25V		P6KE20A
PP06AC220S24W							100uF/35V		P6KE33A

### EMI TEST FOR REFERENCE



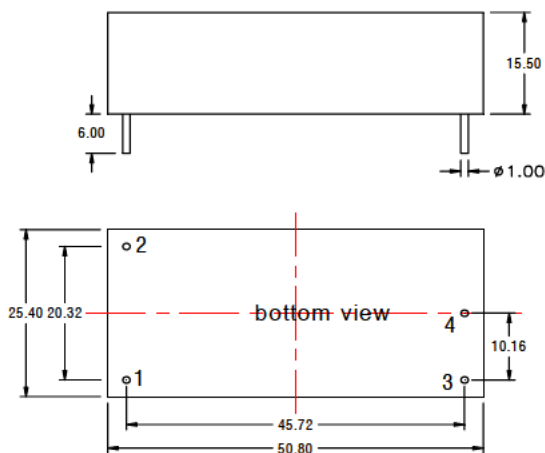
The above figures are the conducted waveforms measured by some products on the L line @ 230Vac rated load.



The above figure is the vertical radiation waveform measured by some products @ 230Vac input rated load.

### MECHANICAL DIMENSIONS

#### DIP packaging



All dimensions in mm ±0.2mm

### PIN CONNECTIONS

PIN	Single
1	N
2	L
3	+V0
4	-V0

### SELECTION GUIDE

