PATRON
Passive Elektronic

PP06DA Series

DESCRIPTION： **6W 1.5KVDC、3KVDC Isolated Wide Input Voltage DC/DC Converters**

The rated output power of PP06DA converters is 6W,the outline dimensions is "31.75*20.32*10.65", 2:1 and 4:1 wide input Voltage range, the voltage range is 4.5-9V,9V-18V,18V-36V,36V-72V,9V-36V and 18V-72VDC.The accuracy of the converter can reach ±1% it can be widely used in telecommunications, railway transportation, instrument and etc.

FEATURES

6W output power	2:1 and 4:1 wide input voltage range	Over load protection
31.75mm*20.32mm*10.65mm standard package	Fixed switching frequency	Operating temperature: -40℃to 85℃
Metal shell package or plastic shell packaging	RoHS compliant	1.5KVDC、3KVDC isola ion

SELECTION GUIDE

Part Number	Input Voltage		Output		Efficiency(Typ) %	Maxmum capacitive load (u F)
	voltage（VDC）		Voltage（VDC）	Current（A）		
	Rated	Range values				
PP06DA05S05	5(2:1)	4.5-9	5	1.2	≥79	1500
PP06DA05S12	5(2:1)	4.5-9	12	0.5	≥82	660
PP06DA12S03	12(2:1)	9-18	3.3	1.5	≥77	2200
PP06DA12S05	12(2:1)	9-18	5	1.2	≥79	1500
PP06DA12S12	12(2:1)	9-18	12	0.5	≥82	660
PP06DA12S15	12(2:1)	9-18	15	0.4	≥84	470
PP06DA12D05	12(2:1)	9-18	±5	±0.6	≥79	±850
PP06DA12D12	12(2:1)	9-18	±12	±0.25	≥82	±140
PP06DA12D15	12(2:1)	9-18	±15	±0.2	≥84	±47
PP06DA24S03	24(2:1)	18-36	3.3	1.5	≥78	2200
PP06DA24S05	24(2:1)	18-36	5	1.2	≥80	1500
PP06DA24S12	24(2:1)	18-36	12	0.5	≥84	660
PP06DA24S15	24(2:1)	18-36	15	0.4	≥86	470
PP06DA24S24	24(2:1)	18-36	24	0.25	≥83	470
PP06DA24D05	24(2:1)	18-36	±5	±0.6	≥81	±850
PP06DA24D12	24(2:1)	18-36	±12	±0.25	≥84	±140
PP06DA24D15	24(2:1)	18-36	±15	±0.2	≥86	±47
PP06DA48S03	48(2:1)	36-72	3.3	1.5	≥78	2200
PP06DA48S05	48(2:1)	36-72	5	1.2	≥80	1500
PP06DA48S12	48(2:1)	36-72	12	0.5	≥84	660
PP06DA48S15	48(2:1)	36-72	15	0.4	≥86	470
PP06DA48D05	48(2:1)	36-72	±5	±0.6	≥80	±850
PP06DA48D12	48(2:1)	36-72	±12	±0.25	≥84	±140
PP06DA48D15	48(2:1)	36-72	±15	±0.2	≥83	±47
PP06DA24S05W	24(4:1)	9-36	5	1.2	≥80	1500
PP06DA24S12W	24(4:1)	9-36	12	0.5	≥82	660
PP06DA24S15W	24(4:1)	9-36	15	0.4	≥84	470
PP06DA24D05W	24(4:1)	9-36	±5	±0.6	≥80	±850
PP06DA24D12W	24(4:1)	9-36	±12	±0.25	≥82	±140
PP06DA24D15W	24(4:1)	9-36	±15	±0.2	≥84	±47
PP06DA48S05W	48(4:1)	18-72	5	1.2	≥77	1500
PP06DA48S12W	48(4:1)	18-72	12	0.5	≥80	660
PP06DA48S15W	48(4:1)	18-72	15	0.4	≥84	470
PP06DA48D05W	48(4:1)	18-72	±5	±0.6	≥80	±850
PP06DA48D12W	48(4:1)	18-72	±12	±0.25	≥82	±140
PP06DA48D15W	48(4:1)	18-72	±15	±0.2	≥79	±47

3KVDC isolation with /3H at the end of the part number. for example PP06DA24S05W/3H ;3KVDC isolated parts only can make with plastic shell packaging.

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

GENERAL CHARACTERISTICS

parameter	Test conditions	Min	Typ	Max	Units
Isolation voltage	Input to Output		500	1500、3000	VDC
Isolation resistance	Input to Output	100M			ohm
Seismic	10~55Hz		5		G
MTBF	MIL-HDBK-217F2		5×10^5		hrs
Over-current protection mode	Full input range		Auto recovery		
Cooling			Free air convection		
Case material			Metal shell packaging or plastic shell packaging		

INPUT CHARACTERISTICS

parameter	Test conditions	Min	Typ	Max	Units
Input voltage	5V Input module(4.5V -9V)	4.5	5	9	VDC
Input voltage	12V Input module(9V -18V)	9.5	12	18	VDC
Input voltage	24V Input module(18V-36V)	18	24	36	VDC
Input voltage	48V Input module(36V-72V)	36	48	72	VDC
Input voltage	24V Input module(9V -36V)	9.5	24	36	VDC
Input voltage	48V Input module(18V-72V)	18	48	72	VDC
Start rising time	Input rising time from 5%-100%	20			ms

OUTPUT CHARACTERISTICS

parameter	Test conditions	Min	Typ	Max	Units
Voltage accuracy	Io=0.1…1.0 x Ionom Vi=Vi rated			±1	%
Line regulation	Vimin≤Vi≤Vimax			±0.2	%
Load regulation	Io=0.1…1.0 x Ionom Vimin≤ Vi≤Vimax			±0.5	%
Auxiliary voltage accuracy	Main Load and auxiliary load differ 25%,the auxiliary circuit of the load with at least 25%, the main circuit with full load			±3	%
Ripple and noise	20MHz bandwidth			±1	%
Over-current protection	Vimin≤Vi≤Vimax	120			%
Transient recovery time	25% load change			±5	%
Transient overshoot range	25% load change			400	us
Switch frequency	Vimin≤Vi≤Vimax		300		KHz

ENVIRONMENT CHARACTERISTICS

parameter	Test conditions	Min	Typ	Max	Units
Storage Humidity	Non condensing	5		+95	%
Operating Temperature	Power derating (above 71℃	-40		+85	℃
Storage Temperature		-55		+125	℃
Max. Case Temperature	Operating Temperature curve range			105	℃
Lead Temperature	1.5mm from case for 10 seconds			300	℃
Cooling			Free air convection		

- Case temperature under shall not exceed the maximum case temperature level.
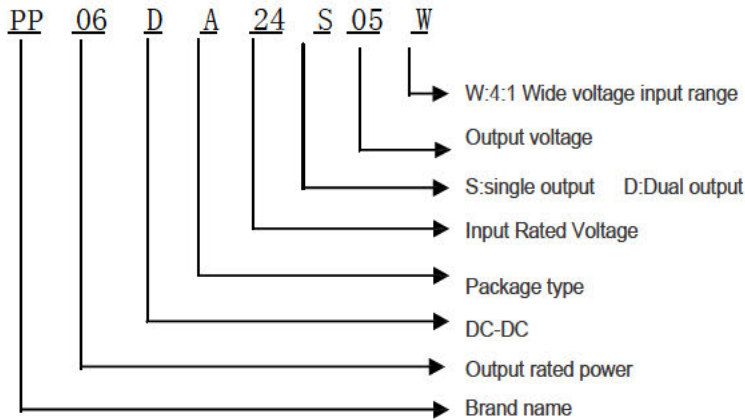
MECHANICAL DIMENSIONS

DIP Package
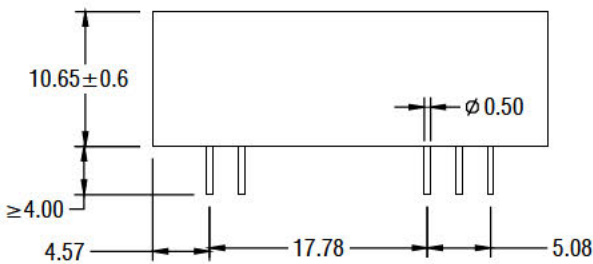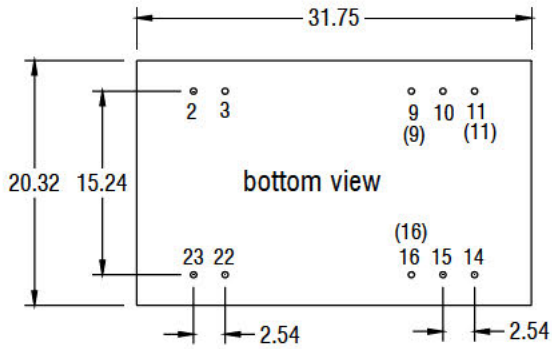
Units: mm

Pin diameter tolerances: ±0.1mm

General Tolerance: ±0.5mm

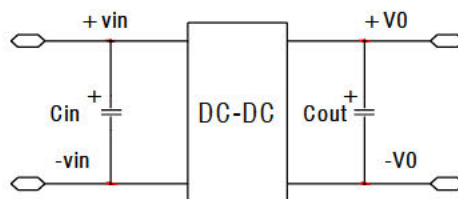## PIN CONNECTIONS

Pin	Single Output	Dual Output
2	-Vin	-Vin
3	-Vin	-Vin
9	NC	
(9)	/	Com
10	NC	NC
11	NC	
(11)	/	-Vout
14	+Vout	+Vout
15	NC	NC
16	-Vout	/
(16)	/	Com
22	+Vin	+Vin
23	+Vin	+Vin

MODEL SELECTION

PP 06 D A 24 S 05 W

- W:4:1 Wide voltage input range
- Output voltage
- S:single output   D:Dual output
- Input Rated Voltage
- Package type
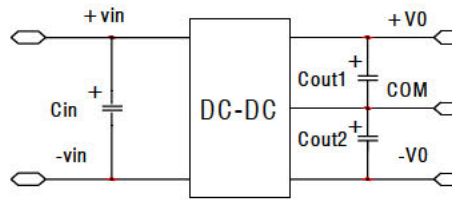- DC-DC
- Output rated power
- Brand name

RECOMMEND CIRCUIT:

Single Output

RECOMMEND CIRCUIT:

Dual Output

- Add input capacitance Cin is helpful to improve the electromagnetic compatibility, recommend Cin use 47 uF-100uF of the electrolytic capacitors.

- If the module connect to the digital circuits, please add the Cout、Cout1、Cout2.

- If Cout, Cout1, Cout2 value is too high or lower ESR, it will cause the module instable,

- The recommended value of Cout, Cout1, Cout2 should be 100 uF/A, the current here means the output current.

USING ATTENTIONS

- Module will cause irreversible damage when in the state of the input reverse polarity.

- Module will cause irreversible damage when in the long-term overload conditions.

- Module will cause irreversible damage when out of the maximum input voltage range.