



**DESCRIPTION :** 8W Wide Input Voltage DC/DC Converters

The rated output power of PP08DA converters is 8W, the outline dimensions is "31.75\*20.32\*11.2", 2:1 and 4:1 wide input Voltage range, the voltage range is 9V-18V, 18V-36V, 36V-72V, 9V-36V and 18V-72VDC. The accuracy of the converter can reach  $\pm 1\%$  it can be widely used in telecommunications, railway transportation, instrument and etc.

## FEATURES

8W output power	2:1 and 4:1 wide input voltage range	Over load protection
31.75mm*20.32mm*11.2mm standard package	Fixed switching frequency	Operating temperature: -40°C to 85°C
Metal shell package	RoHS compliant	1.5KVDC isolation

## SELECTION GUIDE

Part Number	Input Voltage		Output		Efficiency(Typ) %	Maximum capacitive load ( $\mu$ F)
	voltage (VDC)		Voltage (VDC)	Current (A)		
	Rated	Range values				
PP08DA12S03	12(2:1)	9-18	3.3	2.2	$\geq 77$	2200
PP08DA12S05	12(2:1)	9-18	5	1.6	$\geq 79$	1500
PP08DA12S12	12(2:1)	9-18	12	0.6	$\geq 82$	660
PP08DA12S15	12(2:1)	9-18	15	0.5	$\geq 84$	470
PP08DA12D05	12(2:1)	9-18	$\pm 5$	$\pm 0.8$	$\geq 79$	$\pm 850$
PP08DA12D12	12(2:1)	9-18	$\pm 12$	$\pm 0.33$	$\geq 82$	$\pm 140$
PP08DA12D15	12(2:1)	9-18	$\pm 15$	$\pm 0.26$	$\geq 84$	$\pm 47$
PP08DA24S03	24(2:1)	18-36	3.3	2.2	$\geq 78$	2200
PP08DA24S05	24(2:1)	18-36	5	1.6	$\geq 80$	1500
PP08DA24S12	24(2:1)	18-36	12	0.6	$\geq 84$	660
PP08DA24S15	24(2:1)	18-36	15	0.5	$\geq 86$	470
PP08DA24S24	24(2:1)	18-36	24	0.33	$\geq 83$	470
PP08DA24D05	24(2:1)	18-36	$\pm 5$	$\pm 0.8$	$\geq 81$	$\pm 850$
PP08DA24D12	24(2:1)	18-36	$\pm 12$	$\pm 0.33$	$\geq 84$	$\pm 140$
PP08DA24D15	24(2:1)	18-36	$\pm 15$	$\pm 0.26$	$\geq 86$	$\pm 47$
PP08DA48S03	48(2:1)	36-72	3.3	2.2	$\geq 78$	2200
PP08DA48S05	48(2:1)	36-72	5	1.6	$\geq 80$	1500
PP08DA48S12	48(2:1)	36-72	12	0.6	$\geq 84$	660
PP08DA48S15	48(2:1)	36-72	15	0.5	$\geq 86$	470
PP08DA48D05	48(2:1)	36-72	$\pm 5$	$\pm 0.8$	$\geq 80$	$\pm 850$
PP08DA48D12	48(2:1)	36-72	$\pm 12$	$\pm 0.33$	$\geq 84$	$\pm 140$
PP08DA48D15	48(2:1)	36-72	$\pm 15$	$\pm 0.26$	$\geq 83$	$\pm 47$
PP08DA24S03W	24(4:1)	9-36	3.3	2.2	$\geq 78$	2200
PP08DA24S05W	24(4:1)	9-36	5	1.6	$\geq 80$	1500
PP08DA24S12W	24(4:1)	9-36	12	0.6	$\geq 82$	660
PP08DA24S15W	24(4:1)	9-36	15	0.5	$\geq 84$	470
PP08DA24D05W	24(4:1)	9-36	$\pm 5$	$\pm 0.8$	$\geq 80$	$\pm 850$
PP08DA24D12W	24(4:1)	9-36	$\pm 12$	$\pm 0.33$	$\geq 82$	$\pm 140$
PP08DA24D15W	24(4:1)	9-36	$\pm 15$	$\pm 0.26$	$\geq 84$	$\pm 47$
PP08DA48S05W	48(4:1)	18-72	5	1.6	$\geq 77$	1500
PP08DA48S12W	48(4:1)	18-72	12	0.6	$\geq 80$	660
PP08DA48S15W	48(4:1)	18-72	15	0.5	$\geq 84$	470
PP08DA48D05W	48(4:1)	18-72	$\pm 5$	$\pm 0.8$	$\geq 80$	$\pm 850$
PP08DA48D12W	48(4:1)	18-72	$\pm 12$	$\pm 0.33$	$\geq 82$	$\pm 140$
PP08DA48D15W	48(4:1)	18-72	$\pm 15$	$\pm 0.26$	$\geq 79$	$\pm 47$

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	VDC
Isolation resistance	Input to Output	100M			ohm
Seismic	10~55Hz		5		G
MTBF	MIL-HDBK-217F2		5 x 10 <sup>5</sup>		hrs
Over-current protection mode	Full input range	Auto recovery			
Cooling	Free air convection				
Case material	Metal case				

**INPUT CHARACTERISTICS**

parameter	Test conditions	Min	Typ	Max	Units
Startup voltage	12V Input module(9V -18V)	8.8	9	9.3	VDC
Startup voltage	24V Input module(18V-36V)			18	VDC
Startup voltage	48V Input module(36V-72V )			36	VDC
Startup voltage	24V Input module(9V -36V)	8.8	9	9.3	VDC
Startup voltage	48V Input module(18V-72V)			18	VDC
Start rising time	Input rising time from 5%-100%	20			ms

**OUTPUT CHARACTERISTICS**

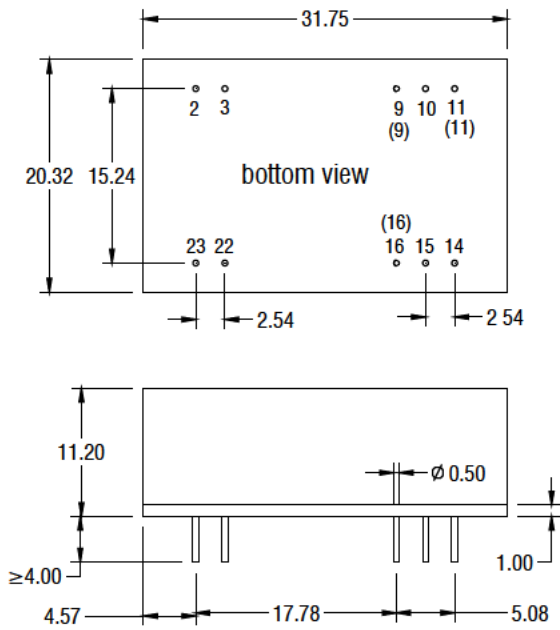
parameter	Test conditions	Min	Typ	Max	Units
Voltage accuracy	$I_o=0.1 \dots 1.0 \times I_{onom}$ $V_i=V_i$ rated			±1	%
Line regulation	$V_{imin} \leq V_i \leq V_{imax}$			±0.2	%
Load regulation	$I_o=0.1 \dots 1.0 \times I_{onom}$ $V_{imin} \leq V_i \leq V_{imax}$			±0.5	%
Auxiliary voltage accuracy	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	$V_{imin} \leq V_i \leq V_{imax}$	120			%
Transient recovery time	25% load change			±5	%
Transient overshoot range	25% load change			400	us
Switch frequency	$V_{imin} \leq V_i \leq V_{imax}$		300		KHz

**ENVIRONMENT CHARACTERISTICS**

parameter	Test conditions	Min	Typ	Max	Units
Environment temperature	industrial-class	-25		+55	°C
Maximum case temperature	industrial-class	-40		+85	°C
Storage temperature	Industry-class/ Military JI&JII class	-55		+125	°C
Relative humidity	No condensation	5		95	RH(%)
Temperature coefficient			±0.02		%/°C

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

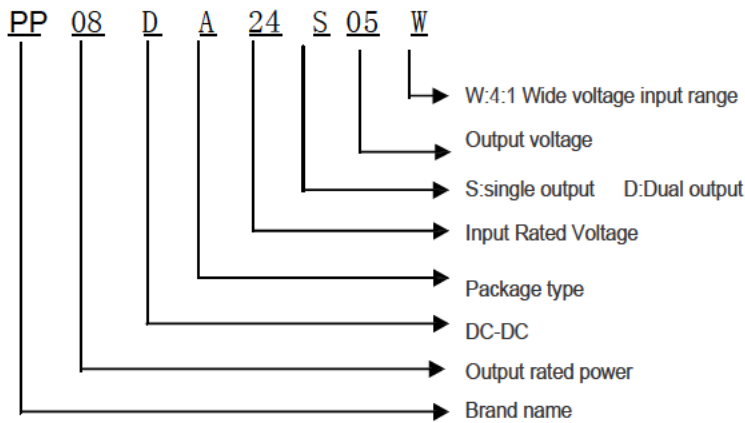
**MECHANICAL DIMENSIONS**



Units: mm  
Tolerance: ±0.2mm

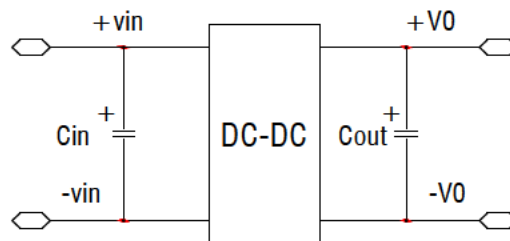
PIN CONNECTION		
Pin	Single Output	Dual Output
2	-Vin	-Vin
3	-Vin	-Vin
9	NC	
(9)	/	Com
10	NC	NC
11	NC	
(11)	/	-Vout
14	+Vout	+Vout
15	NC	NC
16	-Vout	/
(16)	/	Com
22	+Vin	+Vin
23	+Vin	+Vin

**MODEL SELECTION**



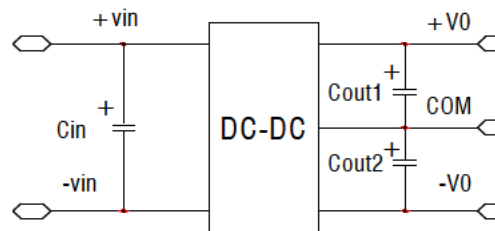
**RECOMMEND CIRCUIT:**

Single Output



**RECOMMEND CIRCUIT:**

Dual Output



- Add input capacitance  $C_{in}$  is helpful to improve the electromagnetic compatibility, recommend  $C_{in}$  use 47  $\mu\text{F}$ -100 $\mu\text{F}$  of the electrolytic capacitors.
- If the module connect to the digital circuits, please add the  $C_{out}$ ,  $C_{out1}$ ,  $C_{out2}$ .
- If  $C_{out}$ ,  $C_{out1}$ ,  $C_{out2}$  value is too high or lower ESR, it will cause the module instable,
- The recommended value of  $C_{out}$ ,  $C_{out1}$ ,  $C_{out2}$  should be 100  $\mu\text{F}/\text{A}$ , 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.