

PWA_(M)PD-3W Series

4:1 WIDE INPUT ISOLATED & REGULATED
3W DUAL OUTPUT
24 DIP PACKAGE

RoHS

multi-country patent protection

FEATURES

- Wide (4:1) Input Range
- Efficiency Up To 82%
- Operating Temperature: -40°C~+85°C
- 1.5KVDC Isolation
- Dual Output
- No Heat Sink Required
- MTBF>1,000,000 hours
- Continuous Short Circuit Protection
- RoHS Compliance

APPLICATIONS

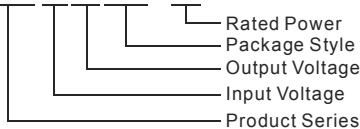
The PWA_(M)PD-3W Series are specially designed for applications where a wide range input voltage power supplies are isolated from the input power supply in a distributed power supply system on a circuit board.

These products apply to:

- 1) Where the voltage of the input power supply is wide range (voltage range: 4:1);
- 2) Where isolation is necessary between input and output (isolation =1500VDC);
- 3) Where the regulation of the output voltage and the output ripple noise are demanded.

MODEL SELECTION

PWA0505MPD-3W



PRODUCT PROGRAM

Part Number	Input			No-load Current (mA, Typ)	Output			Efficiency (% Typ)
	Voltage (VDC)				Voltage (VDC)	Current (mA)		
	Range	Nominal	Max*			Max	Min	
PWA2405(M)PD-3W	9~36	24	40	-	±5	±300	±30	74
PWA2412(M)PD-3W					±12	±125	±12	81
PWA2415(M)PD-3W					±15	±100	±10	81
PWA4805(M)PD-3W	18~72	48	80	-	±5	±300	±30	77
PWA4812(M)PD-3W					±12	±125	±12	84
PWA4815(M)PD-3W					±15	±100	±10	82

ISOLATION SPECIFICATIONS

Item	Test conditions	Min	Typ	Max	Units
Isolation voltage	Flash tested for 60 seconds	1500			VDC
Isolation resistance	Test at 500VDC	1000			MΩ

OUTPUT SPECIFICATIONS

Item	Test conditions	Min	Typ	Max	Units
3W output power	See below products program	0.3		3	W
Voltage accuracy	Refer to recommended circuit		±1	±3	%
Load regulation	From 10% to 100% load			±2	
Line regulation	Input Voltage From Low to High			±1	
Temperature drift (Vout)	Refer to recommended circuit			0.03	%/°C
Ripple	20Hz-300KHz bandwidth			40	mVp-p
Noise	DC-20MHz bandwidth		100		
Switching frequency		100-650(PFM)			KHz
Isolation Capacitance		150			PF

Note:

- 1.All specifications measured at T_a=25°C, humidity<75%, nominal input voltage and rated output load unless otherwise specified.
- 2.See below recommended circuits for more details.



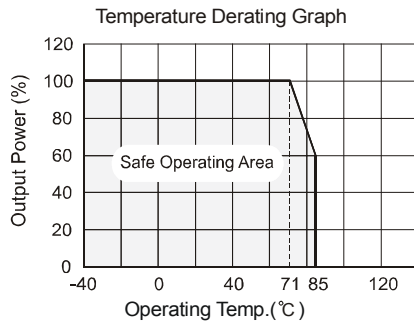
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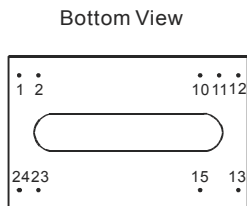
COMMON SPECIFICATION

Output Short Circuit Protection	Continuous
Temperature Rise at Full Load	30°C (TYP)
Cooling	Free Air Convection
Operating Temperature Range	-40°C~+85°C
Storage Temperature Range	-55°C ~+125°C
Lead Temperature***	300°C (1.5mm from case for 10 seconds)
Storage Humidity Range	≤ 95%
Case Material	PD:Plastic (UL94-V0);MPD: Metal SUS
MTBF	>1,000,000 hours
***Lead Temperature 1.5mm from case for 10 seconds.	

TYPICAL CHARECTERISTICS

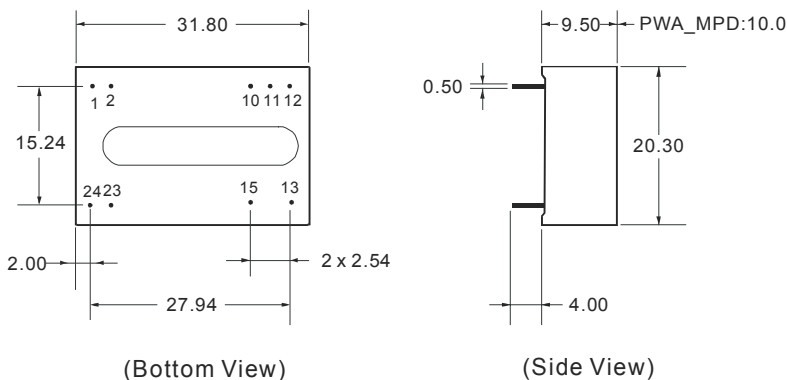


FOOTPRINT DETAILS



Pin	Function
1,2	VIN
10,11	0V
12	NC
13	-Vo
15	+Vo
23,24	GND

OUTLINE DIMENSIONS & RECOMMENDED FOOTPRINT



Note: All Pins on a 2.54mm pitch; All Pin diameters are 0.50 mm(Tolerance: ±0.10); All dimensions in mm.

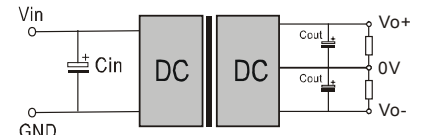
APPLICATION NOTE

Recommended Circuit

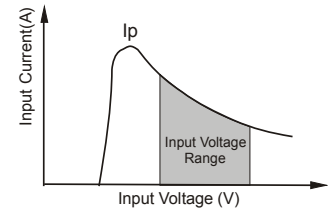
All the PWA_(M)PD-3W Series have been tested according to the following recommended testing circuit before leaving factory. This series should be tested under load. Never be tested under no load (See Figure 1). If you want to further decrease the input/output ripple, you can increase capacitance properly or choose capacitors with low ESR. However, the capacitance should not be too high.(See table 1).If you want to use the products in high EMI, please choose our metal packaged products.

Input Current

When it is used in unregulated power supply, be sure that the fluctuating range of the power



(Figure)



(Figure 2)

supply and the rippled voltage do not exceed the module standard. Input current of power supply should afford the startup current of this kind of DC/DC module. (See figure 2)

External Capacitor

Although this series of DC/DC converter can work without external capacitor, in order to keep an optimum performance, however, it needs external capacitor. (See Table 1)

Requirement on Output Load

To ensure this module operate efficiently and reliably, a minimum load is specified for this kind of DC/DC converter in addition to a maximum load (namely full load). During operation, make sure the specified range of input voltage is not exceeded, the minimum output load is not less than **10%** Of the full load, and that this product **should never be operated under no load!!!** If the actual load is less below the specified minimum load, the output ripple of this type of DC/DC converter will increase drastically and at the same time efficiency & reliability of the circuit will decrease deeply .If the actual output power from the load in your circuit is very small, please connect a resistor with proper resistance at the output end to in parallel to increase the load, or use our company's other products with a lower rated output power.

The products cannot be used in parallel and in plug and play.

External Capacitor Table (Table 1)

Vin	Cin	Cout (0+70°C)	Cout (-40+85°C)
5V & 12V	100uF	100uF (electrolytic capacitor)	47uF (tantalum capacitor)
24V & 48V	10uF		



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