

PMB_(M)D-3W Series

ULTRA WIDE INPUT ISOLATED & REGULATED 3W OUTPUT SINGLE OUTPUT DIP PACKAGE

RoHS multi-country patent protection

FEATURES

- Wide (4:1) Input Range
- Efficiency Up To 82%
- Operating Temperature: -40°C~+85°C
- 1KVDC Isolation
- Single Output
- Metal casing
- No Heat Sink Required
- Industry Standard Pin out
- MTBF>1,000,000 hours
- RoHS Compliance

APPLICATIONS

The PMB_(M)D-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.

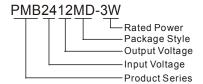
These products apply to:

- Where the voltage of the input power supply is wide range (voltage range: 4:1);
 Where isolation is necessary between input and output
- (isolation voltage =1000VDC);
- 3) Where the regulation of the output voltage and the output ripple noise are demanded.

These products don't apply to:

- 1) Where the input voltage t is required to be more than 4:1;
- Where the isolation voltage between input and output is required to be >1000VDC;
- 3) The output load's actual power consumption is less than 1W, otherwise our company's PMB_(M)D-2W series are recommended.

MODEL SELECTION





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PRODUCT PROGRAM Input					Quitout				
Part	Voltage (VDC)		Output Voltage Current (mA)		Efficiency	Package			
Number	Nominal			(VDC)	Max Min		(%, Typ)	Style	
PMB2403(M)D-3W	24	9~36VDC	40	3.3	909	90	72	DIP	
PMB2405(M)D-2W5	24	9~36VDC	40	5	500	50	74	DIP	
PMB2409(M)D-3W	24	9~36VDC	40	9	333	33	80	DIP	
PMB2412(M)D-3W	24	9~36VDC	40	12	250	25	79	DIP	
PMB2415(M)D-3W	24	9~36VDC	40	15	200	20	78	DIP	
PMB2424(M)D-3W	24	9~36VDC	40	24	125	12	80	DIP	
PMB4803(M)D-3W	48	18~72VD	80	3.3	909	90	74	DIP	
PMB4805(M)D-2W5	48	18~72VD	80	5	500	50	77	DIP	
PMB4809(M)D-3W	48	18~72VDC	80	9	333	33	78	DIP	
PMB4812(M)D-3W	48	18~72VD	80	12	250	25	79	DIP	
PMB4815(M)D-3W	48	18~72VD	80	15	200	20	78	DIP	
PMB4824(M)D-3W	48	18~72VD	80	24	125	12	79	DIP	

ISOLATION SPECIFICATIONS						
Item	Test conditions	Min	Тур	Max	Units	
Isolation voltage	Flash tested for 60 seconds	1000			VDC	
Isolation resistance	Test at 500VDC	1000			МΩ	

OUTPUT SPECIFICATIONS							
Item	Item Test conditions		Тур	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		±0.5	±1	%		
Line regulation	Input Voltage From Low to High		±0.2	±0.5			
Temperature drift(Vout)	Refer to recommended circuit			0.03	%/°C		
Ripple	20Hz-300KHz bandwidth			50	mVD-p		
Noise	DC-20MHz bandwidth		100	150	шур-р		
Switching frequency	100% load, nominal input voltage	100	-650(P	FM)	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.

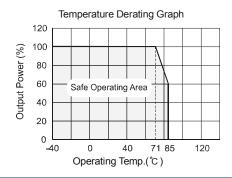
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2.See below recommended circuits for more details.

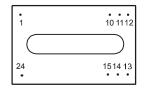
COMMON SPECIFICATION					
Output Short Circuit Protection	Continuous				
Temperature Rise at Full Load	30°C (TYP)				
Cooling	Free Air Convection				
No-load Power Consumption	100mW (typical)				
Operating Temperature Range	-40°C~+85°C				
Storage Temperature Range	-55°C ~+125°C				
Lead Temperature***	300°C (1.5mm from case for 10 seconds)				
Storage Humidity Range	≤ 95%				
Case Material	MD:Metal; D: Plastic (UL94-V0)				
MTBF	>1,000,000 hours				
Weight	15G				
***Lead Temperature 1.5mm from case for 10 seconds.					

TYPICAL CHARECTERISTICS



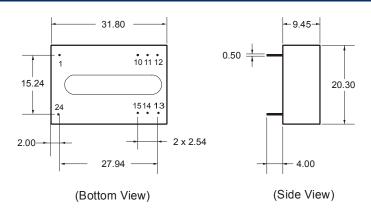
FOOTPRINT DETAILS





Pin	Function
1,24	Vin
12,13	GND
11,14	+Vo
10,15	0V

OUTLINE DIMENSIONS & RECOMMENDED FOOTPRINT



Note: All Pins on a 2.54mm pitch; All Pin diameters are 0.50 mm(Tolerance:±0.25);

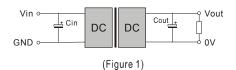
APPLICATION NOTE

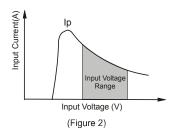
Recommended Circuit

All the PMB_(M)D-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 & 2). 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 Curren

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





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 out put 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)

Ę	External Capacitor Table (Table 1)								
	Vin	C _{in}	C _{out} (0+70°C)	C _{out} (-40+85°C)					
	5V & 12V	100uF	100uF (electrolytic capacitor)	47uF					
	24V & 48V	10uF		(tantalum capacitor)					

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