



VFB_MP-6W Series

**WIDE INPUT ISOLATED & REGULATED
6W SINGLE OUTPUT
24 DIP PACKAGE**

multi-country patent protection **RoHS**

FEATURES

- Wide (2:1) Input Range
- 1.5KVDC Input/Output Isolation
- Operating Temperature: -40°C~+85°C
- Efficiency up to 85%
- Single Output
- Metal Shielding Package
- No Heat Sink Required
- Industry-Standard Pinout
- MTBF>1,000,000 hours
- Continuous Short-Circuit Protection
- RoHS Compliance

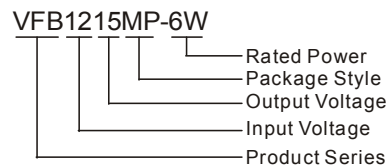
APPLICATIONS

The VFB_MP-6W 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: 2:1);
- 2) Where isolation is necessary between input and output(Isolation Voltage =1500VDC);
- 3) Where the regulation of the output voltage and the output ripple noise are demanded.

MODEL SELECTION



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PRODUCT PROGRAM

Part Number	Input			Output			Efficiency (% Typ)	Package Style
	Voltage (VDC)			Voltage (VDC)	Current (mA)			
	Nominal	Range	Max*		Max	Min**		
VFB1203MP-6W	12	9~18	20	3.3	1500	150	75	DIP
VFB1205MP-6W				5	1200	120	78	DIP
VFB1212MP-6W				12	500	50	82	DIP
VFB1215MP-6W				15	400	40	82	DIP
VFB1224MP-6W				24	250	25	84	DIP
VFB2403MP-6W	24	18~36	40	3.3	1500	150	76	DIP
VFB2405MP-6W				5	1200	120	80	DIP
VFB2412MP-6W				12	500	50	83	DIP
VFB2415MP-6W				15	400	40	83	DIP
VFB2424MP-6W				24	250	25	85	DIP
VFB4803MP-6W	48	36~72	80	3.3	1500	150	78	DIP
VFB4805MP-6W				5	1200	120	81	DIP
VFB4812MP-6W				12	500	50	82	DIP
VFB4815MP-6W				15	400	40	84	DIP
VFB4824MP-6W				24	250	25	85	DIP

* Input voltage can't exceed this value, or will cause the permanent damage.

** The load shouldn't be less than 10%, otherwise ripple will increase dramatically.

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
Output Power	See below products program			6	W
Output Voltage Accuracy	Refer to recommended circuit		±1	±3	%
Load Regulation	From 10% to 100% load		±0.5	±1*	
Line Regulation(at full load)	Input voltage from low to high		±0.2	±0.5	
Temperature Drift(Vout)	Refer to recommended circuit		0.02		%/°C
Ripple	20MHz bandwidth		30	50	mVp-p
Noise	20MHz bandwidth		100	300	
Switching Frequency	100% load, Nominal Input voltage		300		KHz

*3.3V Output models are:±1.5%

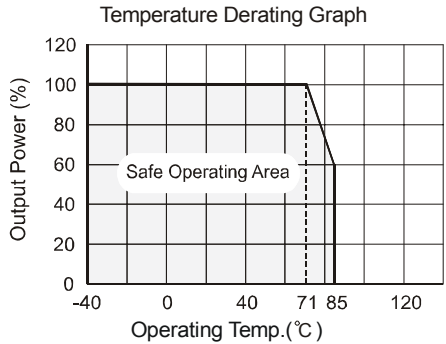
Note:

1.All specifications measured at T_A=25°C, humidity<75%, nominal input voltage and rated output load unless otherwise specified.

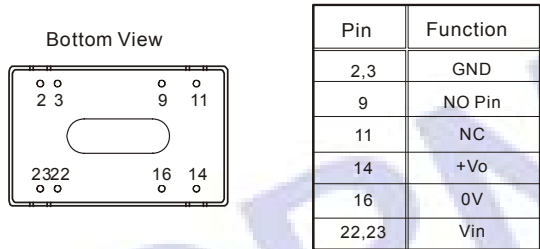
2. See below recommended circuits for more details.

COMMON SPECIFICATION	
Output Short Circuit Protection	Continuous,automatic recovery
Temperature Rise at Full Load	40°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	Copper,Nickel plated
MTBF	>1,000,000 hours

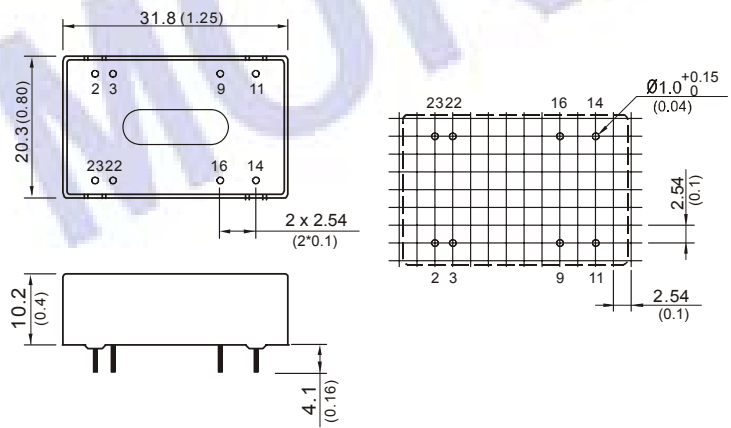
TYPICAL CHARECTERISTICS



FOOTPRINT DETAILS



OUTLINE DIMENSIONS & RECOMMENDED FOOTPRINT



Note: Unit:mm(inch); Tolerance:±0.25mm;All Pins on a 2.54mm pitch; All Pin diameters are \varnothing 0.50 ±0.05mm.

APPLICATION NOTE

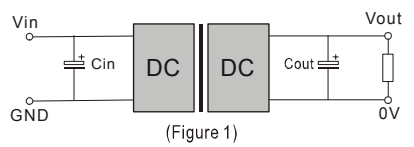
External Capacitor

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

External Capacitor Table(Table 1)			
Vin	Cin	Vout	Cout
12V	100uF	3.3/5V	100uF
24V	100uF	12V	100uF
48V	100uF	15V	47uF
		24V	47uF

Recommended Circuit

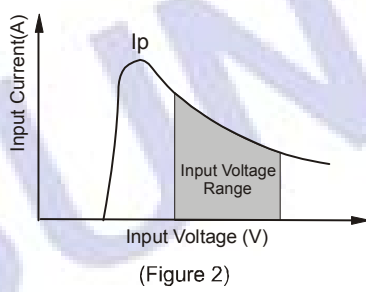
All the VFB_MP-6W Series have been tested according to the following recommended testing circuit before leaving factory. This series should be tested under load. Never be tested under no load (Figure 1).



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.(Table 1).

Input Current

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. (Figure 2)



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