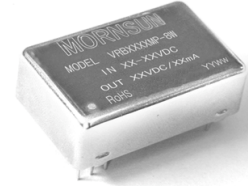


# MORNSUN

## VRB\_MP-8W Series 8W, WIDE INPUT, ISOLATED&REGULATED SINGLE OUTPUT DC-DC CONVERTER



RoHS

### FEATURES

- Wide (2:1) Input Range
- Operating Temperature: -40°C~+85°C
- 1.5KVDC Input/Output Isolation
- Metal Shielding Package
- DIP package
- No Heat Sink Required
- Industry Standard Pin out
- MTBF>1,000,000 hours
- RoHS Compliance

### Application

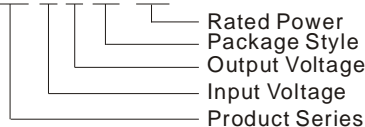
The VRB\_MP-8W Series is specially designed for applications where a wide range input voltage power supplies are isolated from the input power supply in a distributed power supply system on a circuit board.

These products apply to:

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

### MODEL SELECTION

VRB4805MP-8W



### PRODUCT PROGRAM

Part Number	Input			Output			Efficiency (% Typ.)	Capacitor Load Max
	Voltage (VDC)			Voltage (VDC)	Current(A)			
	Nominal	Range	Max*		Max.	Min.		
VRB1203MP-8W	12	9-18	20	3.3	2000	200	78	3300
VRB1205MP-8W				5	1500	150	81	1600
VRB1212MP-8W				12	667	67	86	350
VRB1215MP-8W				15	533	54	84	240
VRB1224MP-8W				24	334	34	85	100
VRB2405MP-8W	24	18-36	40	5	1500	150	81	1600
VRB2412MP-8W				12	667	67	85	350
VRB2415MP-8W				15	533	54	84	240
VRB2424MP-8W				24	334	34	84	100
VRB4805MP-8W	48	36-75	80	5	1500	150	84	1600
VRB4812MP-8W				12	667	67	84	350
VRB4815MP-8W				15	533	54	84	240
VRB4824MP-8W				24	334	34	85	100

\*Input voltage above it may cause permanent damage to the device.

### COMMON SPECIFICATIONS

Item	Test conditions	Min.	Typ.	Max.	Units
Storage Humidity				95	%
Operating Temperature		-40		85	°C
Storage Temperature		-55		125	
Lead Temperature	1.5mm from case for 10 seconds			300	
Temp. Rise at Full Load			40		
MTBF		1000			K hours
CTRL(Reference point: GND)	On	3.5-12VDC or open circuit			
	Off	0-1.2VDC or short circuit Pin1 and Pin2/pin3			
Cooling		Free Air Convection			
Short Circuit Protection		Continuous, automatic recovery			
Case Material		Copper, Nickel Plated			

### ISOLATION SPECIFICATIONS

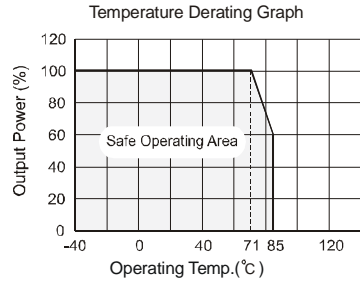
Item	Test conditions	Min.	Typ.	Max.	Units
Isolation voltage	Tested for 1 minute and 1mA max	1500			VDC
Isolation resistance	Test at 500VDC	500			MΩ
Isolation capacitance			100		pF

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## OUTPUT SPECIFICATIONS

Item	Test conditions	Min.	Typ.	Max.	Units
Output power	See above products program			8	W
Output 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, full load		±0.2	±0.5	
Temperature drift (Vout)	Refer to recommended circuit		±0.02		%/°C
Ripple & Noise	20MHz bandwidth		1%Vo		mVp-p
Switching frequency	100% load, nominal input voltage		300		KHz

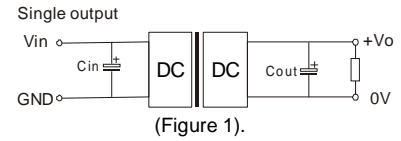
## TYPICAL CHARACTERISTICS



## APPLICATION NOTE

### ① Recommended Circuit

All the VRB\_MP-8W 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 output ripple, you can increase capacitance properly or choose capacitors with low ESR. However, the capacitance can't exceed the maximum capacitor load in the list.

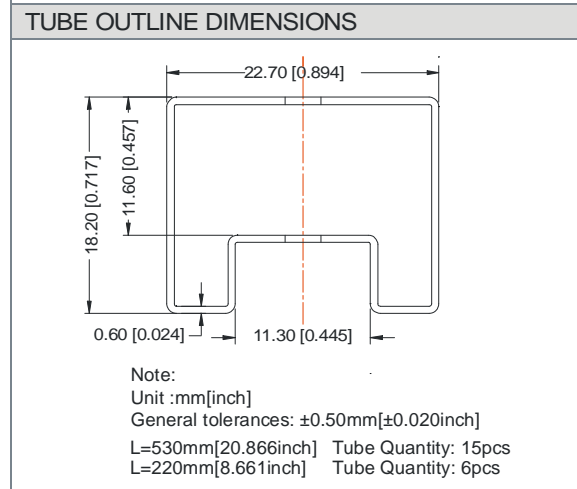
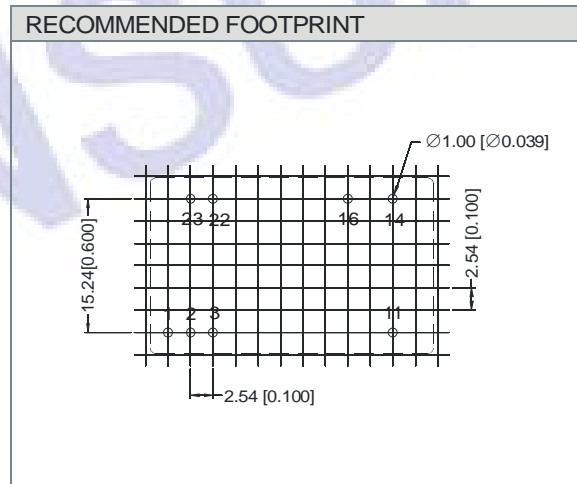
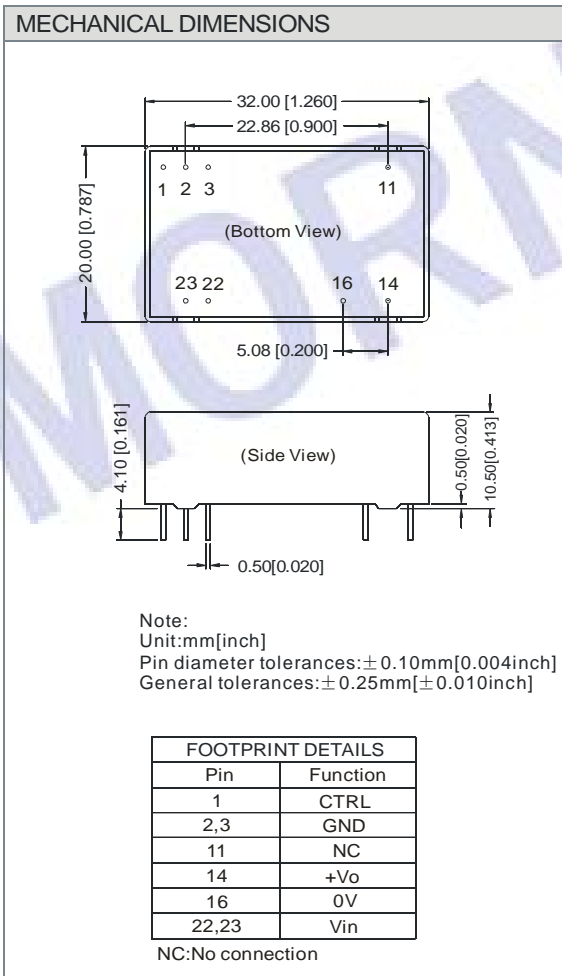
### ② Recommended capacitance

To ensure these series can operate efficiently and reliably, the recommended capacitance of input and output sees the below table.

Output Voltage	Capacitance	
	Cout	Cin (12V,24V,48V Input)
3.3V,5V	220uF	100uF
12V,15V	100uF	
24V	47uF	

### ③ No parallel connection or plug and play

## OUTLINE DIMENSIONS & RECOMMENDED FOOTPRINT



### Note:

- All specifications measured at Ta=25°C, humidity<75%, nominal input voltage and rated output load unless otherwise specified.
- In this datasheet, all the test methods of indications are based on corporate standards.
- Only typical models listed, other models may be different, please contact our technical person for more details.