



WRD_(M)P-3W Series

**WIDE INPUT ISOLATED & REGULATED
3W TWIN OUTPUT
24 DIP PACKAGE**

multi-country patent protection **RoHS**

FEATURES

- Wide (2:1) Input Range
- Efficiency Up To 84%
- UL94-V0 Package
- Operating Temperature: -40°C~+85°C
- 1KVDC Isolation
- Twin Isolated Output
- Short Circuit Protected
- No Heat Sink Required
- Industry Standard Pin out
- MTBF>1,000,000 hours
- RoHS Compliance

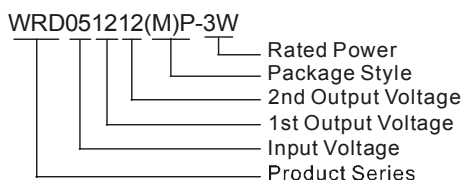
APPLICATIONS

The WRD_(M) P-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: 2:1);
- 2) Where isolation is necessary between (Isolation Voltage =1000VDC);
- 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			No-load Current (mA, Typ)	Output		Efficiency (% Typ)	
	Voltage (VDC)				Voltage (VDC)	Current(mA)		
	Nominal	Range	Max*			Max		Min
WRD050505(M)P-3W	5	4.5-9.0	11	38	5	300	30	69
WRD050909(M)P-3W					9	166	16	70
WRD051212(M)P-3W					12	125	12	72
WRD051515(M)P-3W					15	100	10	72
WRD052424(M)P-3W					24	62	6	73
WRD120505(M)P-3W	12	90-18	22	21	5	300	30	78
WRD120909(M)P-3W					9	166	16	79
WRD121212(M)P-3W					12	125	12	80
WRD121515(M)P-3W					15	100	10	82
WRD122424(M)P-3W					24	62	6	83
WRD240505(M)P-3W	24	18-36	40	10	5	300	30	74
WRD240909(M)P-3W					9	166	16	77
WRD241212(M)P-3W					12	125	12	81
WRD241515(M)P-3W					15	100	10	81
WRD242424(M)P-3W					24	62	6	84
WRD480505(M)P-3W	48	36-72	80	5	5	300	30	77
WRD480909(M)P-3W					9	166	16	78
WRD481212(M)P-3W					12	125	12	84
WRD481515(M)P-3W					15	100	10	82
WRD482424(M)P-3W					24	62	6	83

ISOLATION SPECIFICATIONS

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

OUTPUT SPECIFICATIONS

Item	Test Conditions	Min	Typ	Max	Units
Output Voltage Accuracy	Balance Load		±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)				±0.03	%/°C
Ripple	20MHz Bandwidth			50	mVp-p
Noise	20MHz Bandwidth		50	100	
Switching Frequency	100% Load	200-400PFM			KHz
Isolation Capacitance	Input/Output		100		PF

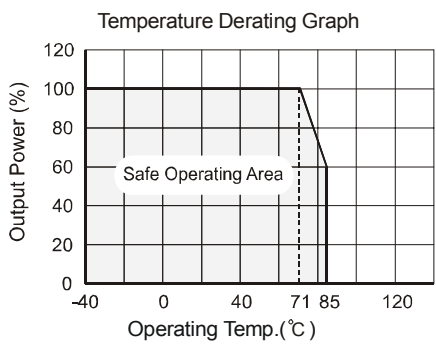
Note:

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

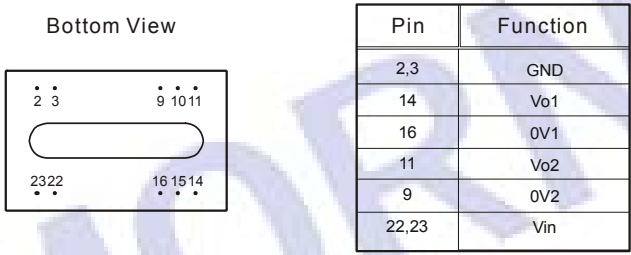
2. See below recommended circuits for more details.

COMMON SPECIFICATION	
Output Short Circuit Protection	Continuous Automatic Recovery
Temperature Rise at Full Load	15°C (typ) ,35°C (MAX)
Cooling	Free Air Convection
Operating Temperature Range	-40°C~+85°C
Storage Temperature Range	-50°C ~+125°C
Storage Humidity Range	≤ 95%
Case Material	P: Plastic (UL94-V0) MP: Steel,Nickel Plated
MTBF	>1,000,000 hours
Isolation voltage	1000VDC
Isolation resistance	>1000MΩ
Weigh	15g
***Lead Temperature 1.5mm from case for 10 seconds.	

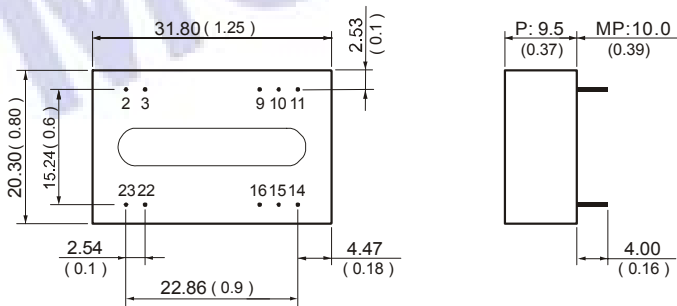
TYPICAL CHARECTERISTICS



FOOTPRINT DETAILS



OUTLINE DIMENSIONS



Note: Unit: mm(inch); Tolerance: ±0.25mm; All Pins on a 2.54mm ; Pin diameter: ∅ 0.5±0.05mm.

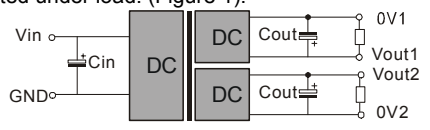
APPLICATION NOTE

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, If the actual load is less below the specified minimum load, the output ripple of this type of DC/DC converter may increase drastically .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.

Recommended Circuit

All the WRD_(M)P-3W Series have been tested according to the following recommended testing circuit before leaving factory. This series should be tested under load. (Figure 1).



(Figure 1)

If you want to further decrease the input/output ripple, you can increase capacitance properly or choose capacitors with low ESR,

General: Cin: 5V,12V 100uF
24V,48V 22uF
Cout: 100uF

However, the capacitance should not be too high.(Table 1).If you want to use the products in high EMI, please choose MP packaged products.

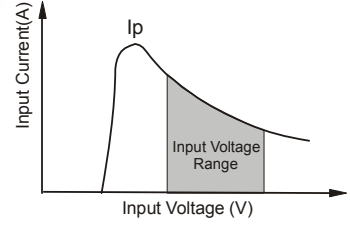
External Capacitor Table(Table 1)

Vout	Cout (Max)
5	470
9	220
12	150
15	120
24	47

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)

General: Ip ≤ 1.4*lin-max



(Figure 2)

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