MICRODC
Professional Power Module

WRA-YD-4W&WRB-YD-4W Series

4W, WIDE INPUT, ISOLATED & REGULATED DUAL/SINGLE OUTPUT DC-DC CONVERTER


FEATURES

- ◆Wide (2:1) Input Range
- ◆24Pin DIP Package
- ◆1500VDC Isolation
- ◆Operating Temperature: -40℃～ + 85℃
- ◆High Efficiency Up To 83%
- ◆Low Profile Metal Package
- ◆Continuous Short Circuit Protection
- ◆Pin-Compatible With Multiple Manufacturers
- ◆RoHS Compliance
- ◆MTBF>1000Khours

MODEL SELECTION

WRB①24②15③Y④ D⑤-4W(267)⑥

①Product Series ②Input Voltage
③Output Voltage ④Wide (2:1) Input Range
⑤DIP24 Package Style
⑥Rated Power(Output current)

APPLICATIONS

The WRA_YD-4W & WRB_YD-4W 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.

RoHS MICRODC Green Technology

CE REACH

SELECTION GUIDE

Order code	Input		Output	
	Voltage(VDC)		Voltage	Current max.
	Nominal	Range		
WRB1203YD-1000	12	9VDC - 18VDC	3.3VDC	1000mA
WRB1205YD-4W	12	9VDC - 18VDC	5VDC	800mA
WRB1207YD-4W	12	9VDC - 18VDC	7.2VDC	556mA
WRB1209YD-4W	12	9VDC - 18VDC	9VDC	444mA
WRB1212YD-4W	12	9VDC - 18VDC	12VDC	333mA
WRB1215YD-4W	12	9VDC - 18VDC	15VDC	267mA
WRB1218YD-4W	12	9VDC - 18VDC	18VDC	222mA
WRB1224YD-4W	12	9VDC - 18VDC	24VDC	167mA
WRB2403YD-1000	24	18VDC - 36VDC	3.3VDC	1000mA
WRB2405YD-4W	24	18VDC - 36VDC	5VDC	800mA
WRB2407YD-4W	24	18VDC - 36VDC	7.2VDC	556mA
WRB2409YD-4W	24	18VDC - 36VDC	9VDC	444mA
WRB2412YD-4W	24	18VDC - 36VDC	12VDC	333mA
WRB2415YD-4W	24	18VDC - 36VDC	15VDC	267mA
WRB2418YD-4W	24	18VDC - 36VDC	18VDC	222mA
WRB2424YD-4W	24	18VDC - 36VDC	24VDC	167mA
WRB4803YD-1000	48	36VDC - 72VDC	3.3VDC	1000mA
WRB4805YD-4W	48	36VDC - 72VDC	5VDC	800mA
WRB4807YD-4W	48	36VDC - 72VDC	7.2VDC	556mA
WRB4809YD-4W	48	36VDC - 72VDC	9VDC	444mA
WRB4812YD-4W	48	36VDC - 72VDC	12VDC	333mA
WRB4815YD-4W	48	36VDC - 72VDC	15VDC	267mA
WRB4818YD-4W	48	36VDC - 72VDC	18VDC	222mA
WRB4824YD-4W	48	36VDC - 72VDC	24VDC	167mA
WRA1203YD-500	12	9VDC - 18VDC	±3.3VDC	±500mA
WRA1205YD-4W	12	9VDC - 18VDC	±5VDC	±400mA
WRA1207YD-4W	12	9VDC - 18VDC	±7.2VDC	±278mA
WRA1209YD-4W	12	9VDC - 18VDC	±9VDC	±222mA
WRA1212YD-4W	12	9VDC - 18VDC	±12VDC	±167mA
WRA1215YD-4W	12	9VDC - 18VDC	±15VDC	±133mA
WRA1218YD-4W	12	9VDC - 18VDC	±18VDC	±111mA
WRA1224YD-4W	12	9VDC - 18VDC	±24VDC	±83mA
WRA2403YD-500	24	18VDC - 36VDC	±3.3VDC	±500mA
WRA2405YD-4W	24	18VDC - 36VDC	±5VDC	±400mA
WRA2407YD-4W	24	18VDC - 36VDC	±7.2VDC	±278mA
WRA2409YD-4W	24	18VDC - 36VDC	±9VDC	±222mA
WRA2412YD-4W	24	18VDC - 36VDC	±12VDC	±167mA
WRA2415YD-4W	24	18VDC - 36VDC	±15VDC	±133mA
WRA2418YD-4W	24	18VDC - 36VDC	±18VDC	±111mA
WRA2424YD-4W	24	18VDC - 36VDC	±24VDC	±83mA
WRA4803YD-500	48	36VDC - 72VDC	±3.3VDC	±500mA
WRA4805YD-4W	48	36VDC - 72VDC	±5VDC	±400mA
WRA4807YD-4W	48	36VDC - 72VDC	±7.2VDC	±278mA
WRA4809YD-4W	48	36VDC - 72VDC	±9VDC	±222mA
WRA4812YD-4W	48	36VDC - 72VDC	±12VDC	±167mA
WRA4815YD-4W	48	36VDC - 72VDC	±15VDC	±133mA
WRA4818YD-4W	48	36VDC - 72VDC	±18VDC	±111mA
WRA4824YD-4W	48	36VDC - 72VDC	±24VDC	±83mA

WRA-YD-4W&WRB-YD-4W Series

Input Specifications	
Voltage range	12VDC, 9~18VDC
	24VDC, 18~36VDC
	48VDC, 36~72VDC
Filter	p(Pi) Network
Isolation Specifications	
Rated voltage (60 sec)	1500 VDC
Resistance	> 1000MOhm
Capacitance	120pF, typ.
Environmental Specifications	
Operating temperature (ambient)	-40°C ... +85°C
Storage temperature	-55°C ... +125°C
Case temperature	+100°C, max.
Derating	None required
Humidity (non-condensing)	Up to 90%
Cooling	Free-air Convection

MTBF: > 1,036,000 hrs (MIL-HDBK-217F, Ground Benign, t=+25°C)
Specifications are subject to change without notification

General Specifications	
Efficiency	73% to 81%
Switching Frequency	250KHz, typ. 100% load
Output Specifications	
Voltage accuracy	±1%, max.
Voltage balance (Dual Output)	±1%
Ripple & noise (at 20MHz BW)	60mVp-p, max.
Short circuit protection	Continuous
Short circuit restart	Automatic
Line voltage regulation	±0.5%, max.
Load voltage regulation	±0.5%, max.
Temperature coefficient	±0.02%/°C, typ.
Physical Specifications	
Dimensions	31.75x20.32x10.16mm
	1.25x0.8x0.4inches
Weight	19g
Case material	Nickel-Coated Copper

APPLICATION NOTE

Requirement on output load

In order to ensure the product operate efficiently and reliably,in addition to a max load(namely full load), a minimum load is specified for this kind of DC/DC converter.Make sure the specified range of input voltage is not exceeded,the minimum output load **no less than 10% load**.If the actual load is less than the specified minimum load, the output ripple may increase sharply while its efficiency and reliability will reduce greatly.If the actual output power is very small,please add an appropriate resistor as extra loading,or contact our company for other lower output power products.

Recommended Circuit

All the WRA_YD-4W&WRB_YD-4W Series have been tested according to the following recommended testing circuit before leaving factory.This series should be tested under 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 of the output filter capacitor must be proper. If the capacitance is too big, a startup problem might arise. For every channel of output, provided the safe and reliable operation is ensured, the greatest capacitance of its filter capacitor sees (Table 1).

General: Cin: 5V&12V 100μF
24V&48V 100μF-47μF
Cout: 10μF/100mA

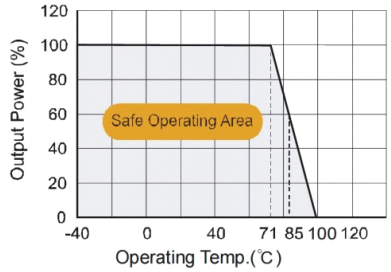
Input current

While using unstable power source,please ensure the output voltage and ripple voltage do not exceed indexes of the converter. Input current of power supply should afford the startup current of this kind of DC/DC module (See figure 2).
General:Ip≤1.4*Iin-max

No parallel connection or plug and play

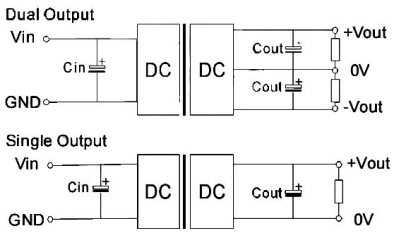
TYPICAL CHARACTERISTICS

Temperature Derating Graph

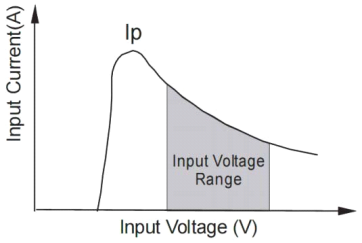


RECOMMENDED CIRCUIT

Output Graph



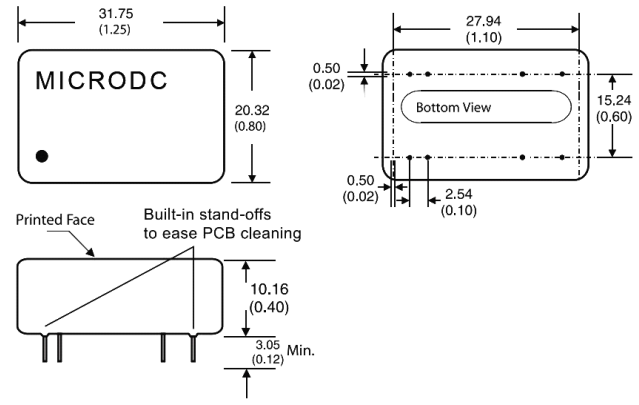
(Figure 1)



(Figure 2)

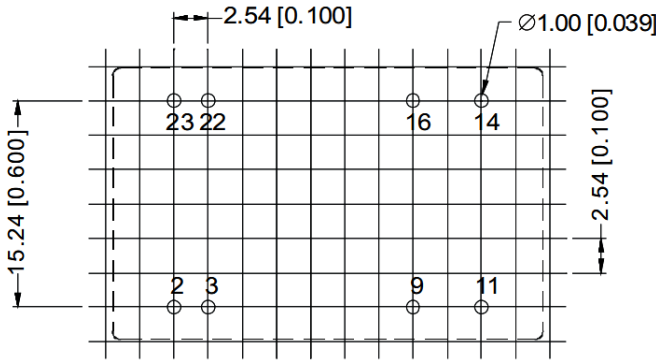
OUTLINE DIMENSIONS & FOOTPRINT DETAILS

MECHANICAL DIMENSIONS



Note:
Unit:mm[inch]
Pin section tolerances:±0.10mm[±0.004inch]
General tolerances:±0.25mm[±0.010inch]

RECOMMENDED FOOTPRINT



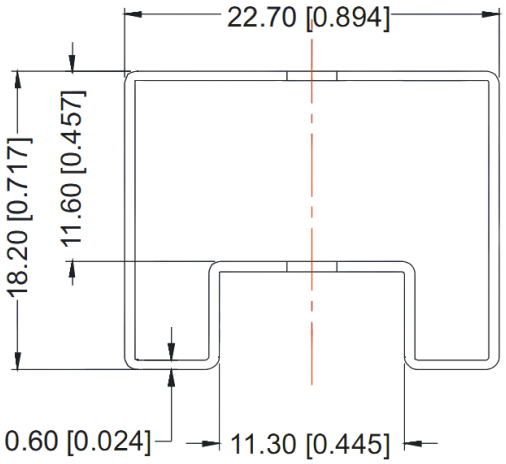
RECOMMENDED FOOTPRINT
Top view grid:2.54mm(0.1inch)
diameter:1.00mm(0.039inch)

FOOTPRINT DETAILS

Pin	Single	Dual
2、3	-V Input	-V Input
9	N.C	Common
11	N.C	-V Output
14	+V Output	+V Output
16	-V Output	Common
22、23	+V Input	+V Input

NC:No connection

TUBE OUTLINE DIMENSIONS



Note:
Unit :mm[inch]
General tolerances:±0.50mm[±0.020inch]
L=530mm[20.866inch] Tube Quantity: 15pcs
L=220mm[8.661inch] Tube Quantity: 6pcs

When the environment temperature is higher than 71℃, the product output power should be less then 60% of the rated power.
No parallel connection or plug and play.
Use dual output simultaneously,forbid pening output pin (0V) to use as single output.

Note:

1. The load shouldn't be less than 10%, otherwise ripple will increase dramatically.
2. Operation under 10% load will not damage the converter; However, they may not meet all specification listed.
3. All specifications measured at Ta=25°C, humidity<75%, nominal input voltage and rated output load unless otherwise specified.
4. In this data sheet, all the test methods of indications are based on corporate standards.
5. Only typical models listed, other models may be different, please contact our technical person for more details.

Стандарт Электрон Связь

Мы молодая и активно развивающаяся компания в области поставок электронных компонентов. Мы поставляем электронные компоненты отечественного и импортного производства напрямую от производителей и с крупнейших складов мира.

Благодаря сотрудничеству с мировыми поставщиками мы осуществляем комплексные и плановые поставки широчайшего спектра электронных компонентов.

Собственная эффективная логистика и склад в обеспечивает надежную поставку продукции в точно указанные сроки по всей России.

Мы осуществляем техническую поддержку нашим клиентам и предпродажную проверку качества продукции. На все поставляемые продукты мы предоставляем гарантию .

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С нами вы становитесь еще успешнее!

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