

FEATURES



CE REACH

Output Specifications

Voltage set accuracy		±1 %	
Output voltage adjustment	(single output models only)	±10 % by external resistor, see application note: http://www.microdc.cn/uploadfiles/WRA-ZMD-20W&WRB-ZMD-20W.pdf	
Regulation	– Input variation Vin min. to Vin max.	0.2 % max.	
	– Load variation 0 – 100%:		
	single output models:	0.5 % max.	
	dual output models:	1 % max. (balanced load)	
	– Load cross variation 25 % / 100 %	5 % max.	
Temperature coefficient		0.02 % /K	
Ripple and noise	(20 MHz Bandwidth)	single output models:	75 mVpk-pk max.
		dual output models:	100 mVpk-pk max.
Start up time	(nominal Vin and constant resistive load)	20 ms typ.	
Transient Response	(25% load step change)	20 ms typ.	
Transient Response	(25% load step change)	250 μs typ.	
Short circuit protection		indefinite (automatic recovery)	
Over load protection		150% of Iout max typ.	
Over voltage protection	3.3 Vout models:	3.9 V	
	5 /±5 Vout models:	6.2 / ±6.2 V	
	12 /±12 Vout models:	15 / ±15 V	
	15 /±15 Vout models:	18 / ±18 V	
Capacitive load	3.3 Vout models:	18'000 μF max.	
	5 Vout models / ± 5 Vout models:	9600 μF max. / ± 4800 μF max.	
	12 Vout models / ±12 Vout models:	1600 μF max. / ± 800 μF max.	
	15 Vout models / ±15 Vout models:	1000 μF max. / ± 500 μF max.	

General Specifications

Temperature ranges	– Operating	–40 °C to +85 °C
	– Case temperature	+105 °C max.
	– Storage	–55 °C to +125 °C
Humidity (non condensing)		95 % rel H max.

Physical Specifications

Case material	copper, nickel plated
Baseplate material	non conductive FR4
Potting material	epoxy (UL 94V-0 - rated)
Weight	27 g (0.95 oz)
Soldering temperature	max. 265 °C / 10 sec.

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_ZMD-20W&WRB_ZMD-20W 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:

$$\begin{aligned} C_{in} &: 10\mu\text{F}-47\mu\text{F} \\ C_{out} &: 10\mu\text{F}/100\text{mA} \end{aligned}$$

CTRL Terminal

When open or high impedance, the converter work well; When this pin is 'high', the converter shutdown; It should be note that the input current (Ic) should between 5-10mA, exceeding the maximum 20mA will cause permanence damage to the converter.

The value of R Can be derived as follows :

$$R = \frac{V_C - V_D - 1.0}{I_c}$$

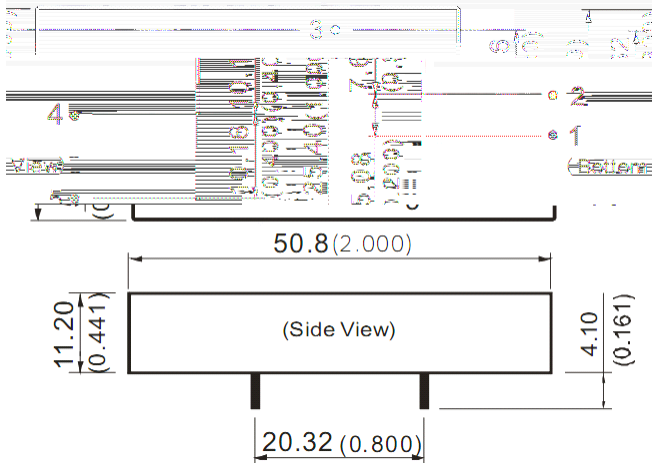
Input current

While using unstable power source, please ensure the output voltage and ripple voltage do not exceed indexes of the converter. The preceding power source must be able to provide for converter sufficient starting current Ip (Figure 2).

General: $I_p \leq 1.6 \cdot I_{in-max}$

No parallel connection or plug and play

OUTLINE DIMENSIONS



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

FOOTPRINT DIMENSION

Pin	Single	Dual

NC:No connection

Pin

When the environment temperature is higher than 71 °C, the product output power should be less than 60% of the rated power.

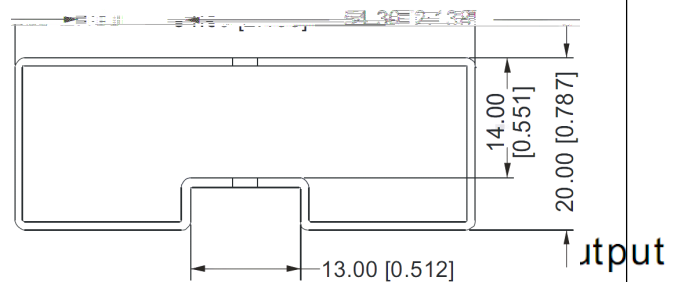
No parallel connection or plug and play.

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 specifications.
3. All specifications measured at Ta=25°C, humidity<75%, nominal input voltage and rated output load.
4. In this datasheet, 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.

TUBE OUTLINE DIMENSIONS



Note:

Unit :mm[inch]
General tolerances:±0.50mm[±0.020inch]
L=230mm[9.055inch] Tube Quantity: 7pcs

