
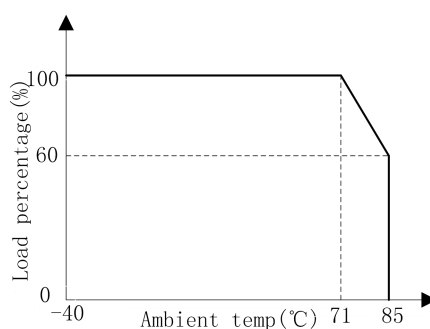


NDDY	WRA (B) _MD-20W		20W, WIDE INPUT, ISOLATED & REGULATED DUAL(SINGLE) OUTPUT DC/DC CONVERTER																																																																																																																													
	PRODUCT SPECIFICATION																																																																																																																															
<p>● FEATURES</p> <ul style="list-style-type: none"> ■ Size: 50.8mm*25.4mm*11.8mm ■ International standard pin-out ■ Wide input voltage range(2:1) ■ Low ripple & noise ■ Short circuit protection ■ ROHS compliant ■ Isolation voltage: 1500VDC ■ Operating temperature range:-40℃~+85℃ ■ 3 years warranty 																																																																																																																																
																																																																																																																																
<p>● DESCRIPTION</p> <p>This is a 20W DC/DC converter specifically designed for applications where input voltage range is large and the space is limited. It is widely used in communications equipment, power system, instrumentation, industrial control, intelligent equipment, and etc.</p>																																																																																																																																
<p>● PRODUCT LIST</p> <table border="1"> <thead> <tr> <th rowspan="2">Product Name</th> <th colspan="2">Input Voltage / VDC</th> <th colspan="2">Output</th> <th rowspan="2">EFF/% (TYP.)</th> <th rowspan="2">Maximum CAP Load/uF</th> </tr> <tr> <th>Normal</th> <th>Range</th> <th>Voltage /VDC</th> <th>Current/mA Max./Min.</th> </tr> </thead> <tbody> <tr> <td>WRA1205MD-20W</td> <td rowspan="7">12</td> <td rowspan="7">9~18</td> <td>±5</td> <td>±2000</td> <td>87</td> <td>2000</td> </tr> <tr> <td>WRA1212MD-20W</td> <td>±12</td> <td>±835</td> <td>87</td> <td>1000</td> </tr> <tr> <td>WRA1215MD-20W</td> <td>±15</td> <td>±666</td> <td>87</td> <td>800</td> </tr> <tr> <td>WRB1203MD-16W</td> <td>3.3</td> <td>5000</td> <td>86</td> <td>5500</td> </tr> <tr> <td>WRB1205MD-20W</td> <td>5</td> <td>4000</td> <td>89</td> <td>4000</td> </tr> <tr> <td>WRB1212MD-20W</td> <td>12</td> <td>1670</td> <td>88</td> <td>1800</td> </tr> <tr> <td>WRB1215MD-20W</td> <td>15</td> <td>1330</td> <td>88</td> <td>1500</td> </tr> <tr> <td>WRA2405MD-20W</td> <td rowspan="7">24</td> <td rowspan="7">18~36</td> <td>±5</td> <td>±2000</td> <td>88</td> <td>2000</td> </tr> <tr> <td>WRA2412MD-20W</td> <td>±12</td> <td>±835</td> <td>88</td> <td>1000</td> </tr> <tr> <td>WRA2415MD-20W</td> <td>±15</td> <td>±666</td> <td>88</td> <td>800</td> </tr> <tr> <td>WRB2403MD-16W</td> <td>3.3</td> <td>5000</td> <td>87</td> <td>5500</td> </tr> <tr> <td>WRB2405MD-20W</td> <td>5</td> <td>4000</td> <td>90</td> <td>4000</td> </tr> <tr> <td>WRB2412MD-20W</td> <td>12</td> <td>1670</td> <td>89</td> <td>1800</td> </tr> <tr> <td>WRB2415MD-20W</td> <td>15</td> <td>1330</td> <td>89</td> <td>1500</td> </tr> <tr> <td>WRA4805MD-20W</td> <td rowspan="7">48</td> <td rowspan="7">36~72</td> <td>±5</td> <td>±2000</td> <td>88</td> <td>2000</td> </tr> <tr> <td>WRA4812MD-20W</td> <td>±12</td> <td>±835</td> <td>88</td> <td>1000</td> </tr> <tr> <td>WRA4815MD-20W</td> <td>±15</td> <td>±666</td> <td>88</td> <td>800</td> </tr> <tr> <td>WRB4803MD-16W</td> <td>3.3</td> <td>5000</td> <td>87</td> <td>5500</td> </tr> <tr> <td>WRB4805MD-20W</td> <td>5</td> <td>4000</td> <td>90</td> <td>4000</td> </tr> <tr> <td>WRB4812MD-20W</td> <td>12</td> <td>1670</td> <td>89</td> <td>1800</td> </tr> <tr> <td>WRB4815MD-20W</td> <td>15</td> <td>1330</td> <td>89</td> <td>1500</td> </tr> </tbody> </table>							Product Name	Input Voltage / VDC		Output		EFF/% (TYP.)	Maximum CAP Load/uF	Normal	Range	Voltage /VDC	Current/mA Max./Min.	WRA1205MD-20W	12	9~18	±5	±2000	87	2000	WRA1212MD-20W	±12	±835	87	1000	WRA1215MD-20W	±15	±666	87	800	WRB1203MD-16W	3.3	5000	86	5500	WRB1205MD-20W	5	4000	89	4000	WRB1212MD-20W	12	1670	88	1800	WRB1215MD-20W	15	1330	88	1500	WRA2405MD-20W	24	18~36	±5	±2000	88	2000	WRA2412MD-20W	±12	±835	88	1000	WRA2415MD-20W	±15	±666	88	800	WRB2403MD-16W	3.3	5000	87	5500	WRB2405MD-20W	5	4000	90	4000	WRB2412MD-20W	12	1670	89	1800	WRB2415MD-20W	15	1330	89	1500	WRA4805MD-20W	48	36~72	±5	±2000	88	2000	WRA4812MD-20W	±12	±835	88	1000	WRA4815MD-20W	±15	±666	88	800	WRB4803MD-16W	3.3	5000	87	5500	WRB4805MD-20W	5	4000	90	4000	WRB4812MD-20W	12	1670	89	1800	WRB4815MD-20W	15	1330	89	1500
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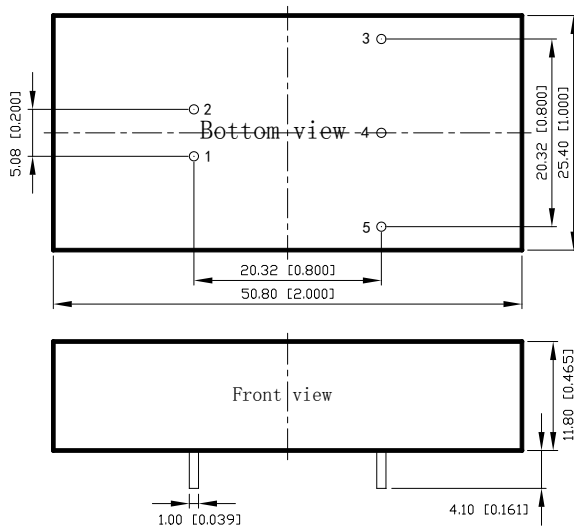
● **PRODUCT PARAMETERS**

Parameter	Conditions / Description	Min	Nom	Max	Unit
Voltage accuracy	10%~100%Io	-	±1	±3	%
Load regulation	10%~100%Io	-	±0.5	±1	%
Line regulation	100%Io, input votagel range	-	±0.2	±1.0	%
Ripple & Noise	20MHz BW	-	50	-	mVp-p
Switching frequency	Nominal input voltage, 100%Io	-	300	-	kHz
SCP	Short circuit protection	Continuous, self-recovery			
Temperature coefficient	Nominal input voltage, 100%Io	-	0.02	-	%/°C
Operating temperature		-40	-	+85	°C
Storage temperature		-40	-	+125	°C
Storage humidity	No condensing	-	-	95	%RH
Cooling method		Natural air cooling			
Insulation voltage		1500	-	-	VDC
Insulation resistance	Input-output, 500VDC, 25°C, 70%RH	1000	-	-	Mohms
MTBF	MIL-HDBK-217F@25°C	100	-	-	KHours
Case material		aluminum			
Weight		-	25	-	g

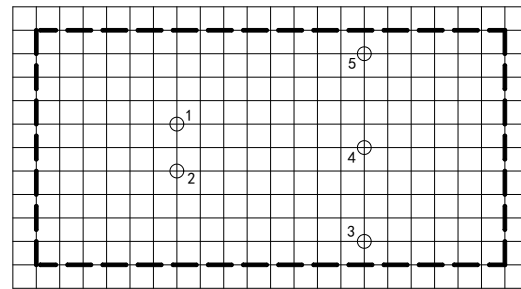
● **DERATING CURVE**



● DIMENSIONS AND PIN ASSIGNMENT



Recommended PCB LAYOUT



Note1: Grid is 2.54mm*2.54mm
 Note2: Hole diameter is advised 1.5mm

Pin	1	2	3	4	5
WRB	GND	Vin	+Vo	No Pin	0V
WRA	GND	Vin	+Vo	0V	-Vo

Unit: mm[inch]
 Pin diameter tolerance: $\pm 0.10[\pm 0.004]$
 General tolerance: $\pm 0.50[\pm 0.020]$

● NOTES

1. Unless otherwise specified, data in this specification is tested with nominal input voltage, rated output load, and $T_a=25^\circ\text{C}$, humidity<75%RH.
2. All data testing methods are based on Guangzhou NengDa company standards.
3. Specification of the product may be subject to change without prior notice.
4. All right reserved by Guangzhou NengDa Power Supply Technology Co., Ltd.