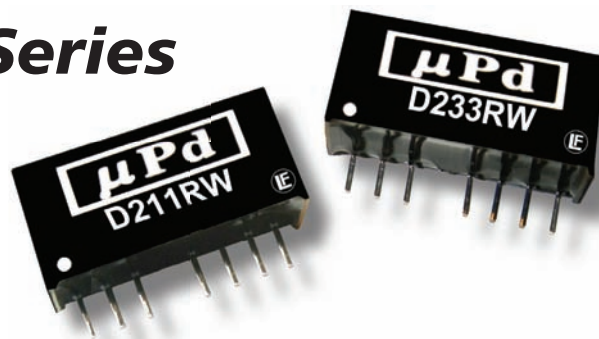


# D200RW Series

## Miniature SIP, 2W Wide Input Range DC/DC Converters



### Key Features:

- 2W Output Power
- 2:1 Input Voltage Range
- 1,000 VDC Isolation
- Short Circuit Protected
- Miniature SIP Case
- Single & Dual Outputs
- 2.7 MH MTBF
- Industry Standard Pin-Out



**RoHS Compliant**

### MicroPower Direct

292 Page Street  
Suite D  
Stoughton, MA 02072  
USA

T: (781) 344-8226  
F: (781) 344-8481  
E: sales@micropowdirect.com  
W: www.micropowdirect.com



### Electrical Specifications

Specifications typical @ +25°C, nominal input voltage & rated output current, unless otherwise noted. Specifications subject to change without notice.

#### Input

Parameter	Conditions	Min.	Typ.	Max.	Units
Input Voltage Range	5 VDC Input	4.5	5.0	9.0	VDC
	12 VDC Input	9.0	12.0	18.0	
	24 VDC Input	18.0	24.0	36.0	
	48 VDC Input	36.0	48.0	72.0	
Input Filter	Capacitor Filter				
Input Reflected Ripple Current			35		mA P - P
Reverse Polarity Input Current				1.0	A
Short Circuit Input Power				1,500	mW

#### Output

Parameter	Conditions	Min.	Typ.	Max.	Units
Output Voltage Accuracy			±2.0		%
Output Voltage Balance				±2.0	%
Line Regulation	Vin = Min to Max			±0.5	%
Load Regulation	Iout = 25% to 100%			±1.0	%
Ripple & Noise (20 MHz)				80	mV P - P
Output Power Protection		120			%
Temperature Coefficient				±0.02	%/°C
Output Short Circuit	Continuous (Autorecovery)				

#### General

Parameter	Conditions	Min.	Typ.	Max.	Units
Isolation Voltage	60 Seconds	1,000			VDC
Isolation Resistance	1,000 VDC	1,000			MΩ
Isolation Capacitance	100 kHz, 1V		60		pF
Switching Frequency		100		650	kHz

#### Environmental

Parameter	Conditions	Min.	Typ.	Max.	Units
Operating Temperature Range	Ambient	-40	+25	+85	°C
Operating Temperature Range	Case			+100	°C
Storage Temperature Range		-40		+125	°C
Cooling	Free Air Convection				
Humidity	RH, Non-condensing			95	%

#### Physical

Case Size	0.86 x 0.36 x 0.44 Inches (21.89 x 9.2 x 11.2 mm)				
Case Material	Non-Conductive Black Plastic (UL94-V0)				
Weight	0.17 Oz (4.8g)				

#### Remote On/Off

Parameter	Conditions	Min.	Typ.	Max.	Units
Unit On (Note 2)		0		0.8	VDC
Unit Off (Note 2)				5.0	VDC
Off Idle Current			5.0		mA

#### Reliability Specifications

Parameter	Conditions	Min.	Typ.	Max.	Units
MTBF	MIL HDBK 217F, 25°C, Gnd Benign	2.73			MHours

#### Absolute Maximum Ratings

Parameter	Conditions	Min.	Typ.	Max.	Units
Input Voltage Surge (1 Sec)	5 VDC Input	-0.7		12.0	VDC
	12 VDC Input	-0.7		24.0	
	24 VDC Input	-0.7		40.0	
	48 VDC Input	-0.7		80.0	
Lead Temperature	1.5 mm From Case For 10 Sec			260	°C
Internal Power Dissipation	All Models			1,800	mW

Caution: Exceeding Absolute Maximum Ratings may damage the module. These are not continuous operating ratings.

# Model Selection Guide

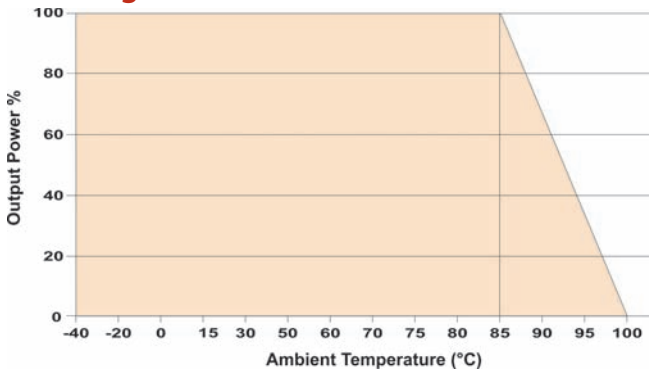
Model Number	Input				Output			Efficiency (% Typ)	Capacitive Load (µF Max)	Fuse Rating Slow-Blow (mA)
	Voltage (VDC)		Current (mA)		Voltage (VDC)	Current (mA, Max)	Current (mA, Min)			
	Nominal	Range	Full-Load	No-Load						
D201RW	5	4.5 - 9.0	492	15	3.3	500.0	125.0	67	3,300	1,500
D202RW	5	4.5 - 9.0	571	15	5.0	400.0	100.0	70	3,300	1,500
D203RW	5	4.5 - 9.0	555	30	12.0	167.0	42.0	72	470	1,500
D204RW	5	4.5 - 9.0	547	30	15.0	133.0	33.0	73	470	1,500
D205RW	5	4.5 - 9.0	571	20	±5.0	±200.0	±50.0	70	±1,000	1,500
D206RW	5	4.5 - 9.0	533	25	±12.0	±83.0	±21.0	75	±220	1,500
D207RW	5	4.5 - 9.0	533	25	±15.0	±67.0	±17.0	75	±220	1,500
D208RW	5	4.5 - 9.0	563	60	±24.0	±42.0	±10.0	71	±100	1,500
D211RW	12	9.0 - 18.0	205	15	3.3	500.0	125.0	67	3,300	700
D212RW	12	9.0 - 18.0	216	15	5.0	400.0	100.0	77	3,300	700
D213RW	12	9.0 - 18.0	208	15	12.0	167.0	42.0	80	470	700
D214RW	12	9.0 - 18.0	213	15	15.0	133.0	33.0	78	470	700
D215RW	12	9.0 - 18.0	222	15	±5.0	±200.0	±50.0	75	±1,000	700
D216RW	12	9.0 - 18.0	208	15	±12.0	±83.0	±21.0	80	±220	700
D217RW	12	9.0 - 18.0	210	15	±15.0	±67.0	±17.0	79	±220	700
D218RW	12	9.0 - 18.0	219	30	±24.0	±42.0	±10.0	76	±100	700
D221RW	24	18.0 - 36.0	98	8	3.3	500.0	125.0	70	3,300	350
D222RW	24	18.0 - 36.0	108	8	5.0	400.0	100.0	77	3,300	350
D223RW	24	18.0 - 36.0	104	8	12.0	167.0	42.0	80	470	350
D224RW	24	18.0 - 36.0	104	8	15.0	133.0	33.0	80	470	350
D225RW	24	18.0 - 36.0	106	8	±5.0	±200.0	±50.0	78	±1,000	350
D226RW	24	18.0 - 36.0	104	8	±12.0	±83.0	±21.0	80	±220	350
D227RW	24	18.0 - 36.0	104	8	±15.0	±67.0	±17.0	80	±220	350
D228RW	24	18.0 - 36.0	106	20	±24.0	±42.0	±10.0	78	±100	350
D231RW	48	36.0 - 72.0	48	6	3.3	500.0	125.0	71	3,300	135
D232RW	48	36.0 - 72.0	56	6	5.0	400.0	100.0	74	3,300	135
D233RW	48	36.0 - 72.0	53	6	12.0	167.0	42.0	78	470	135
D234RW	48	36.0 - 72.0	53	6	15.0	133.0	33.0	78	470	135
D235RW	48	36.0 - 72.0	56	6	±5.0	±200.0	±50.0	74	±1,000	135
D236RW	48	36.0 - 72.0	53	6	±12.0	±83.0	±21.0	79	±220	135
D237RW	48	36.0 - 72.0	52	6	±15.0	±67.0	±17.0	80	±220	135
D238RW	48	36.0 - 72.0	55	12	±24.0	±42.0	±10.0	75	±100	135

Other input/output combinations are available (i.e. 9.0 VDC). Contact the factory for details at: [sales@micropowerdirect.com](mailto:sales@micropowerdirect.com)

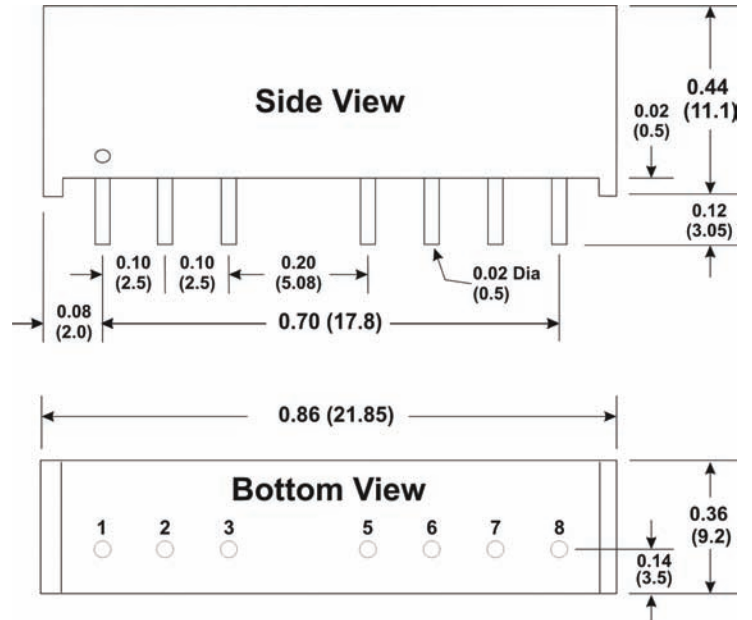
### Notes:

1. An external capacitor should be placed from the +Vout pin to the -Vout pin for single output units and from each output to common for dual output units. For single output units a 100 µF is recommended, for dual output models ±48 µF should be used.
2. The Remote On/Off Control input (Pin 3) is referenced to -Vin (Pin 1). Connection to the pin should be made through a 1kΩ resistor and diode (1N4148). If it is not used, the control pin should be left open or tied directly to -Vin (Pin 1).
3. Operation at no-load will not damage these units. However, they may not meet all specifications.
4. Dual output units may be connected to provide a 10 VDC, 24 VDC, 30 VDC or 48 VDC output. To do this, connect the load across the positive (+Vout) and negative (-Vout) outputs and float the output common.
5. It is recommended that a fuse be used on the input of a power supply for protection. See the table above for the correct rating.

### Derating Curve



### Mechanical Dimensions



A metal case is available  
 Contact the factory for details at:  
[sales@micropowerdirect.com](mailto:sales@micropowerdirect.com)

### Mechanical Notes:

- All dimensions are typical in inches (mm)
- Tolerance x.xx = ±0.01 (±0.25)

### Pin Connections

Pin	Single	Dual
1	-Vin	-Vin
2	+Vin	+Vin
3	Remote ON/OFF	
5	NC	NC
6	+Vout	+Vout
7	-Vout	Common
8	NC	-Vout

NC = No Connection



**MicroPower Direct**  
[www.micropowerdirect.com](http://www.micropowerdirect.com)