



# MicroPower Direct



High Isolation, 2W  
Ultra-Miniature SIP  
DC/DC Converters  
**D200I Series**

## Key Features

- 3,00 VDC Isolation
- 2W Output Power
- -401C to +711C Operation
- Ultra-Miniature SIP Package
- Single & Dual Outputs
- Low Cost

## Electrical Specifications

Specifications typical @ +251C with 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	5.5	VDC
	12 VDC Input	10.8	12.0	13.2	
	24 VDC Input	21.6	24.0	26.4	
Reverse Polarity Input Current				0.3	A
Input Filter	Capacitor				

### Output

Parameter	Conditions	Min.	Typ.	Max.	Units
Output Voltage Accuracy				±5.0	%
Output Voltage Balance	Dual Output , Balanced Loads		±1.0		%
Line Regulation	For Vin Change of 1%		±1.0		%
Load Regulation	Iout = 20% to 100%		±8.0		%
Ripple & Noise (20 MHz)				150	mV P - P
Ripple & Noise (20 MHz)	Over Line, Load & Temp.			150	mV P - P
Ripple & Noise (20 MHz)				5	mV rms
Output Power Protection		120			%
Temperature Coefficient				±0.02	%/1C
Output Short Circuit	Momentary (0.5 Sec.)				

### General

Parameter	Conditions	Min.	Typ.	Max.	Units
Isolation Voltage	60 Seconds	3,000			VDC
Leakage Current			1.0		mA
Isolation Resistance	1,000 VDC		10		GΩ
Isolation Capacitance	100 kHz, 1V		60		pF
Switching Frequency			85		kHz

### Environmental

Parameter	Conditions	Min.	Typ.	Max.	Units
Operating Temperature Range		-40		+71	1C
Storage Temperature Range		-55		+125	1C
Cooling	Free Air Convection				
Humidity	RH, Non-condensing		90		%

### Physical

Case Size	0.77 x 0.24 x 0.37 Inches (19.5 x 6.00 x 9.5 mm)				
Case Material	Non-Conductive Black Plastic				
Weight	0.09 Oz (2.5g)				

### Reliability Specifications

Parameter	Conditions	Min.	Typ.	Max.	Units
MTBF	MIL HDBK 217F, 251C, Gnd Benign		3.6		MHours

### Absolute Maximum Ratings

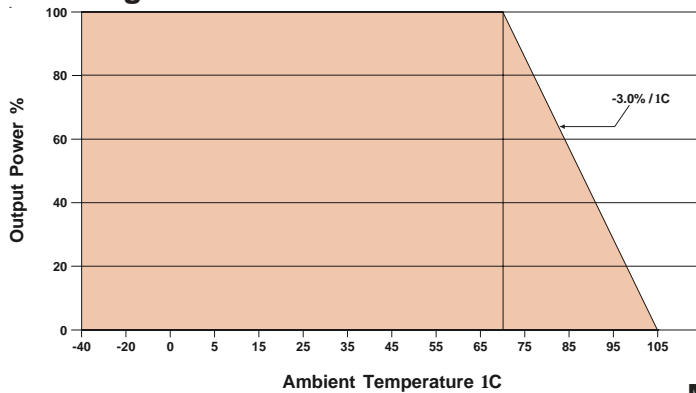
Parameter	Conditions	Min.	Typ.	Max.	Units
Input Voltage Surge (1 Sec)	5 VDC Input	-0.7		9.0	VDC
	12 VDC Input	-0.7		18.0	
	24 VDC Input	-0.7		30.0	
Internal Power Dissipation	All Models			650	mW

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

## Model Selection Guide

Model Number	Input				Output			Efficiency (% Typ)	Fuse Rating Slow-Blow (mA)
	Voltage (VDC)		Current (mA)		Voltage (VDC)	Current (mA, Max)	Current (mA, Min)		
	Nominal	Range	Full-Load	No-Load					
D201I	5	4.5 - 5.5	452	60	3.3	500	10.0	73	1,000
D202I	5	4.5 - 5.5	555	28	5.0	400	8.0	72	1,000
D203I	5	4.5 - 5.5	500	28	12.0	167	3.0	80	1,000
D204I	5	4.5 - 5.5	494	26	15.0	134	2.5	81	1,000
D205I	5	4.5 - 5.5	555	28	±5.0	±200	±4.0	72	1,000
D206I	5	4.5 - 5.5	504	28	±12.0	±84	±1.5	79	1,000
D207I	5	4.5 - 5.5	494	25	±15.0	±67	±1.0	81	1,000
D211I	12	10.8 - 13.2	185	30	3.3	500	10.0	74	500
D212I	12	10.8 - 13.2	228	22	5.0	400	8.0	73	500
D213I	12	10.8 - 13.2	208	20	12.0	167	3.0	80	500
D214I	12	10.8 - 13.2	200	30	15.0	134	2.5	83	500
D215I	12	10.8 - 13.2	225	22	±5.0	±200	±4.0	74	500
D216I	12	10.8 - 13.2	208	20	±12.0	±84	±1.5	80	500
D217I	12	10.8 - 13.2	200	30	±15.0	±67	±1.0	82	500
D221I	24	21.6 - 26.4	92	15	3.3	500	10.0	74	200
D222I	24	21.6 - 26.4	109	10	5.0	400	8.0	76	200
D223I	24	21.6 - 26.4	102	9	12.0	167	3.0	82	200
D224I	24	21.6 - 26.4	102	8	15.0	134	2.5	82	200
D225I	24	21.6 - 26.4	111	11	±5.0	±200	±4.0	75	200
D226I	24	21.6 - 26.4	103	8	±12.0	±84	±1.5	81	200
D227I	24	21.6 - 26.4	102	8	±15.0	±67	±1.0	82	200

### Derating Curve



### Pin Connections

Pin	Single	Dual
1	+Vin	+Vin
2	-Vin	-Vin
5	-Vout	-Vout
6	No Pin	Common
7	+Vout	+Vout

### Capacitive Load

Single Output (μF Max)	Dual Output (μF Max)
470	±390

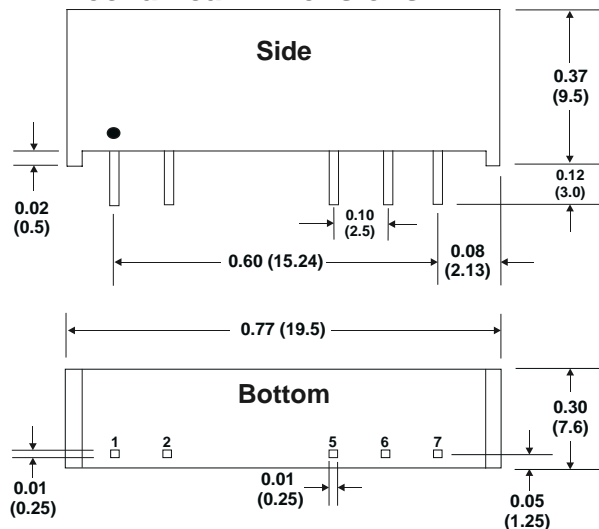
#### Notes:

All dimensions are typical in inches (mm)

Tolerance x.xx = ±0.01 (±0.25)

Pin 1 is marked by a "dot" or indentation on the side of the unit

### Mechanical Dimensions



*MicroPower  
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