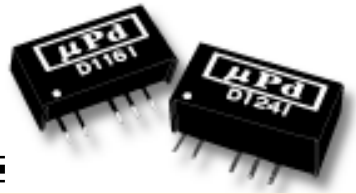
MicroPower Direct



1W, Miniature SIP
Unregulated, High Isolation
DC/DC Converters
D100I Series

Key Features

- 3,000 VDC Isolation
- 1W Output Power
- Wide Model Selection
- Miniature SIP Package
- High Efficiency
- **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	Internal Capacitor				

Output

Parameter	Conditions	Min.	Typ.	Max.	Units
Output Voltage Accuracy			±1.0	±3.0	%
Output Voltage Balance	Dual Output, Balanced Loads		±0.1	±1.0	%
Line Regulation	For VIN Change of 1%		±1.2	±1.5	%
Load Regulation	See Model Selection Guide				
Ripple & Noise (20 MHz)			65	100	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 Coeffiecient			±0.01	±0.02	%/1C
Output Short Circuit				0.5	Sec.

General

Parameter	Conditions	Min.	Typ.	Max.	Units
Isolation Voltage	60 Seconds	3,000			VDC
Isolation Resistance	500 VDC	10			GΩ
Isolation Capacitance	100 KHz, 1V		60	100	pF
Switching Frequency		70	100	120	kHz

Environmental

Parameter	Conditions	Min.	Typ.	Max.	Units
Operating Temperature Range		-40	+25	+85	1C
Storage Temperature Range		-40		+125	1C
Cooling	Free Air Convection				
Humidity	RH, Non-condensing			95	%

Physical

Case Size (5V & 12V Models)	0.77 x 0.24 x 0.40 inches (19.5 x 6.1 x 10.2 mm)
Case Size (24V Models)	0.77 x 0.28 x 0.40 inches (19.5 x 7.1 x 10.2 mm)
Case Material	Non-Conductive Black Plastic
Weight (5V & 12V Models)	0.07 Oz (2.1g)
Weight (24V Models)	0.09 Oz. (2.6g)

Reliability Specifications

Parameter	Conditions	Min.	Typ.	Max.	Units
MTBF	MIL STD 217F, 25 1C, Grnd Benign		3.9		M Hours

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			450	mW

Caution: Exceeding these values can damage the module. These are not continuous operating ratings.

Model Selection Guide

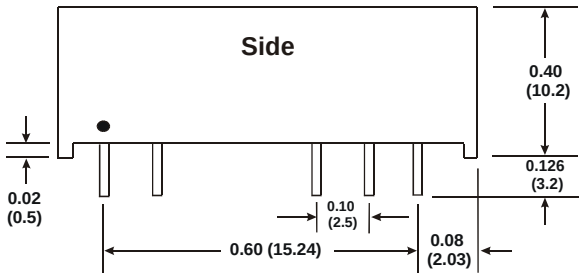
Model Number	Input				Output			Load Regulation % (Max.)	Efficiency %, Typ.
	Voltage (VDC)		Current (mA)		Voltage (VDC)	Current (mA, Max.)	Current (mA, Min.)		
	Nominal	Range	Full-Load	No-Load					
D101I	5.0	4.5 - 5.5	235.0	30.0	3.3	260.0	5.0	10	73
D102I	5.0	4.5 - 5.5	281.0	30.0	5.0	200.0	4.0	10	71
D103I	5.0	4.5 - 5.5	260.0	30.0	9.0	110.0	2.0	8	76
D104I	5.0	4.5 - 5.5	258.0	30.0	12.0	84.0	1.5	7	78
D105I	5.0	4.5 - 5.5	258.0	30.0	15.0	67.0	1.0	7	78
D106I	5.0	4.5 - 5.5	278.0	30.0	±5.0	±100.0	±2.0	10	72
D107I	5.0	4.5 - 5.5	262.0	30.0	±9.0	±56.0	±1.0	8	77
D108I	5.0	4.5 - 5.5	258.0	30.0	±12.0	±42.0	±0.8	7	78
D109I	5.0	4.5 - 5.5	258.0	30.0	±15.0	±34.0	±0.7	7	79
D111I	12.0	10.8 - 13.2	96.0	12.0	3.3	260.0	5.0	8	74
D112I	12.0	10.8 - 13.2	114.0	12.0	5.0	200.0	4.0	8	73
D113I	12.0	10.8 - 13.2	106.0	12.0	9.0	110.0	2.0	5	78
D114I	12.0	10.8 - 13.2	105.0	12.0	12.0	84.0	1.5	5	80
D115I	12.0	10.8 - 13.2	104.0	12.0	15.0	67.0	1.0	5	80
D116I	12.0	10.8 - 13.2	113.0	12.0	±5.0	±100.0	±2.0	8	74
D117I	12.0	10.8 - 13.2	106.0	12.0	±9.0	.±56.0	±1.0	5	79
D118I	12.0	10.8 - 13.2	104.0	12.0	±12.0	±42.0	±0.8	5	81
D119I	12.0	10.8 - 13.2	105.0	12.0	±15.0	±34.0	±0.7	5	81
D121I	24.0	21.6 - 26.4	49.0	7.0	3.3	260.0	5.0	8	73
D122I	24.0	21.6 - 26.4	59.0	7.0	5.0	200.0	4.0	8	71
D123I	24.0	21.6 - 26.4	54.0	7.0	9.0	110.0	2.0	5	76
D124I	24.0	21.6 - 26.4	54.0	7.0	12.0	84.0	1.5	5	78
D125I	24.0	21.6 - 26.4	53.0	7.0	15.0	67.0	1.0	5	79
D126I	24.0	21.6 - 26.4	58.0	7.0	±5.0	±100.0	±2.0	8	72
D127I	24.0	21.6 - 26.4	55.0	7.0	±9.0	±56.0	±1.0	5	76
D128I	24.0	21.6 - 26.4	53.0	7.0	±12.0	±42.0	±0.8	5	79
D129I	24.0	21.6 - 26.4	53.0	7.0	±15.0	±34.0	±0.7	5	80

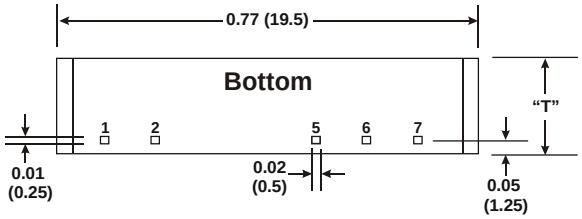
Notes: 1. For proper operation, a minimum load of 10% of maximum output current on each output is required.

2. Transient recovery is measured to within a 1% error band for a load step change of 75% to 100%.

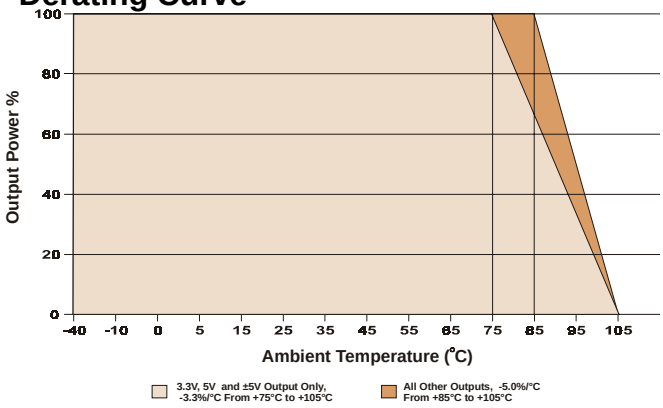
3. When measuring output ripple, it is recommended that an external 0.1 uF ceramic capacitor be placed from +Vout to -Vout for single output units and from each output to ground for dual output models.

Mechanical Dimensions





Derating Curve



Pin Connections

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

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 top of the unit

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