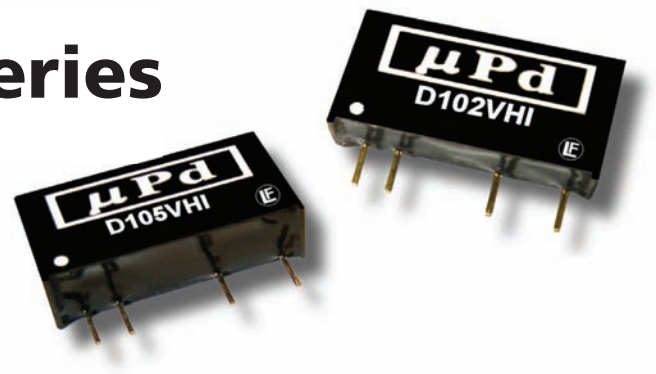
D100VHI Series

Miniature, 1W SIP Ultra-High Isolation DC/DC Converters



Key Features:

- 1W Output Power
- 6.0 kVDC Isolation
- Miniature SIP Case
- Single & Dual Outputs
- Miniature SIP Case
- 12 Standard Models
- 2.0 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@micropowerdirect.com
W: www.micropowerdirect.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	5.5	VDC
	12 VDC Input	10.8	12.0	13.2	
Input Filter	Internal Capacitor				
Reverse Polarity Input Current				0.3	A

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 (Note 1)	See Model Selection Guide				
Ripple & Noise (20 MHz) (Note 2)			100	150	mV P - P
Ripple & Noise (20 MHz)	Over Line, Load & Temp.			200	mV P - P
Ripple & Noise (20 MHz)				5	mV rms
Output Power Protection		120			%
Temperature Coefficient			±0.01	±0.02	%/°C
Output Short Circuit	Momentary (0.5 Sec.)				

General

Parameter	Conditions	Min.	Typ.	Max.	Units
Isolation Voltage	60 Seconds	6,000			VDC
Isolation Test Voltage	Flash Tested For 1 Sec	6,600			VDC
Isolation Resistance	500 VDC	10			GΩ
Isolation Capacitance	100 kHz, 1V		15	20	pF
Switching Frequency		50	80	100	kHz

Environmental

Parameter	Conditions	Min.	Typ.	Max.	Units
Operating Temperature Range	Ambient	-40	+25	+70	°C
Operating Temperature Range	Case	-40		+90	°C
Storage Temperature Range		-40		+125	°C
Cooling	Free Air Convection				
Humidity	RH, Non-condensing			95	%

Physical

Case Size	0.87 x 0.49 x 0.30 Inches (22.0 x 12.5 x 7.5 mm)
Case Material	Non-Conductive Black Plastic (UL94-V0)
Weight	0.13 Oz (3.9g)

Reliability Specifications

Parameter	Conditions	Min.	Typ.	Max.	Units
MTBF	MIL HDBK 217F, 25°C, Gnd Benign	2.0			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	
Lead Temperature	1.5 mm From Case For 10 Sec			260	°C
Internal Power Dissipation	All Models			650	mW

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

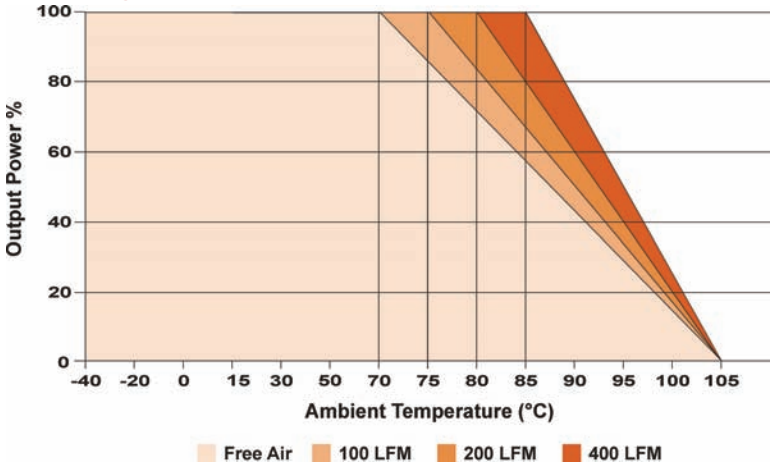
Model Selection Guide

Model Number	Input				Output			Load Regulation (%, Max)	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						
D101VHI	5	4.5 - 5.5	303	55	5.0	200.0	4.0	10	66	500
D102VHI	5	4.5 - 5.5	291	55	12.0	80.0	2.0	8	66	500
D103VHI	5	4.5 - 5.5	295	55	15.0	65.0	1.0	8	66	500
D104VHI	5	4.5 - 5.5	303	55	±5.0	±100.0	±2.0	10	66	500
D105VHI	5	4.5 - 5.5	267	55	±12.0	±40.0	±1.0	8	72	500
D106VHI	5	4.5 - 5.5	287	55	±15.0	±35.0	±1.0	8	73	500
D111VHI	12	10.8 - 13.2	126	30	5.0	200.0	4.0	10	66	200
D112VHI	12	10.8 - 13.2	121	30	12.0	80.0	2.0	8	66	200
D113VHI	12	10.8 - 13.2	123	30	15.0	65.0	1.0	8	66	200
D114VHI	12	10.8 - 13.2	126	30	±5.0	±100.0	±2.0	10	66	200
D115VHI	12	10.8 - 13.2	108	30	±12.0	±40.0	±1.0	8	74	200
D116VHI	12	10.8 - 13.2	117	30	±15.0	±35.0	±1.0	8	75	200

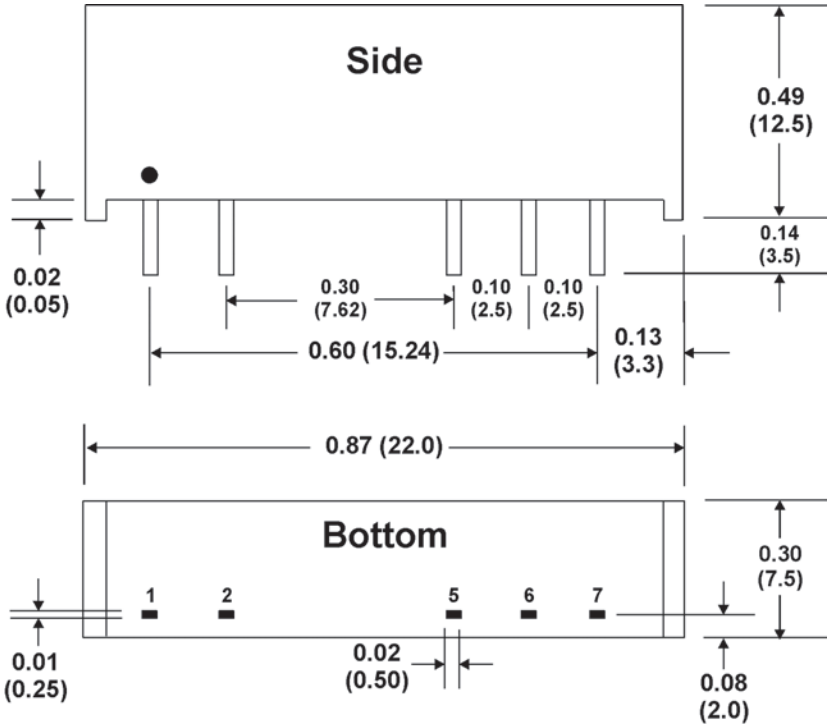
Notes:

1. Output load regulation is specified for a load change of 20% to 100%.
2. When measuring output ripple, it is recomended that an external 0.33 µF ceramic capacitor be placed from the +Vout pin to the -Vout pin for single output units and from each output to common for dual output units.
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 or 30 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



Pin Connections

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

NC: No Connection

Capacitive Load

Single Output µF Max	Dual Output µF Max
680	±220

Mechanical Notes:

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

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