



MicroPower Direct



Regulated, 1W,
Ultra-Miniature SIP
DC/DC Converters
D100R Series

Key Features

- Tight Line/Load Regulation
- 1W Output Power
- -40°C to +85°C Operation
- Ultra-Miniature SIP Package
- 1,000 VDC Isolation
- Low Cost

Electrical Specifications

Specifications typical @ +25°C 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	
Input Filter	Internal Capacitor				

Output

Parameter	Conditions	Min.	Typ.	Max.	Units
Output Voltage Accuracy			±1.0	±5.0	%
Line Regulation	Vin = Min to Max			±0.5	%
Load Regulation	For Iout = 20% to 100%			±0.5	%
Ripple & Noise (20 MHz)				50	mV P-P
Output Power Protection		120			%
Temperature Coefficient			±0.01	±0.02	%/°C
Output Short Circuit				0.5	Sec.

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			80		kHz

Environmental

Parameter	Conditions	Min.	Typ.	Max.	Units
Operating Temperature Range		-40	+25	+85	°C
Storage Temperature Range		-55		+125	°C
Cooling	Free Air Convection				
Humidity	RH, Non-condensing			95	%

Physical

Case Size	0.76 x 0.24 x 0.40 inches (19.5 x 6.0 x 10.2 mm)
Case Material	Non-Conductive Black Plastic
Weight (24V Input)	0.06 Oz (2.0g)

Reliability Specifications

Parameter	Conditions	Min.	Typ.	Max.	Units
MTBF	MIL HDBK 217F, 25°C, Gnd Benign		2.7		MHours

Absolute Maximum Ratings

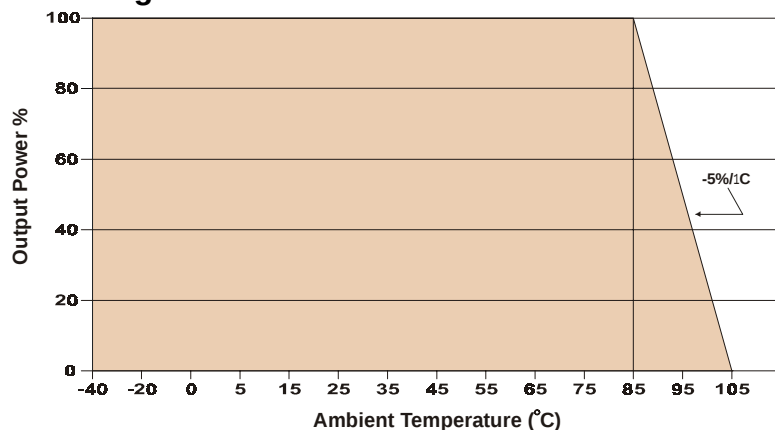
Parameter	Conditions	Min.	Typ.	Max.	Units
Input Voltage Surge (1 sec)	5 VDC Input	-0.7		6.0	VDC
	12 VDC Input	-0.7		14.0	
	24 VDC Input	-0.7		28.0	
Internal Power Dissipation	All Models			450	mW

Caution: Exceeding these values can damage the unit. These are not continuous operating specifications.

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					
D101R	5	4.5 - 5.5	213	28	3.3	200.0	20.0	62	500
D102R	5	4.5 - 5.5	317	28	5.0	200.0	20.0	63	500
D103R	5	4.5 - 5.5	312	26	9.0	111.0	11.0	64	500
D104R	5	4.5 - 5.5	312	26	12.0	83.0	9.0	64	500
D105R	5	4.5 - 5.5	312	38	15.0	66.0	7.0	66	500
D111R	12	10.8 - 13.2	91	16	3.3	200.0	20.0	61	200
D112R	12	10.8 - 13.2	130	16	5.0	200.0	20.0	64	200
D113R	12	10.8 - 13.2	130	16	9.0	111.0	11.0	64	200
D114R	12	10.8 - 13.2	130	16	12.0	83.0	9.0	64	200
D115R	12	10.8 - 13.2	130	16	15.0	66.0	7.0	64	200
D121R	24	21.6 - 26.4	43	7	3.3	200.0	20.0	63	100
D122R	24	21.6 - 26.4	64	7	5.0	200.0	20.0	65	100
D123R	24	21.6 - 26.4	65	9	9.0	111.0	11.0	64	100
D124R	24	21.6 - 26.4	65	9	12.0	83.0	9.0	64	100
D125R	24	21.6 - 26.4	65	9	15.0	66.0	7.0	64	100

Derating Curve



Pin Connections

Pin	Single
1	+Vin
2	-Vin
4	-Vout
6	+Vout

Capacitive Load

(μF Max)
33

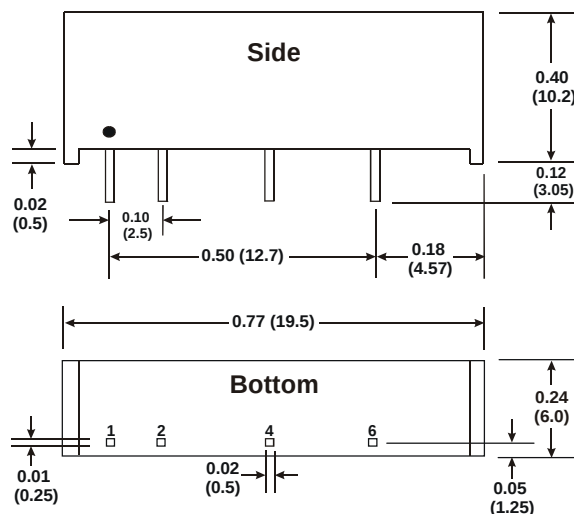
Notes:

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 front of the unit

Mechanical Dimensions



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