



# MicroPower Direct



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

## Key Features

- Miniature SIP Package
- 1.0 kVDC Isolation
- ±0.5% Line/Load Regulation
- 1W Output Power
- 2.7 MH MTBF
- 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	For Vin Change of 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	Momentary (0.5 Sec.)				

### General

Parameter	Conditions	Min.	Typ.	Max.	Units
Isolation Voltage	60 Seconds	1,000			VDC
Isolation Resistance	500 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		-40		+125	°C
Cooling	Free Air Convection				
Humidity	RH, Non-condensing			95	%

### Physical

Case Size	0.77 x 0.24 x 0.40 Inches (19.5 x 6.0 x 10.2 mm)				
Case Material	Non-Conductive Black Plastic				
Weight	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

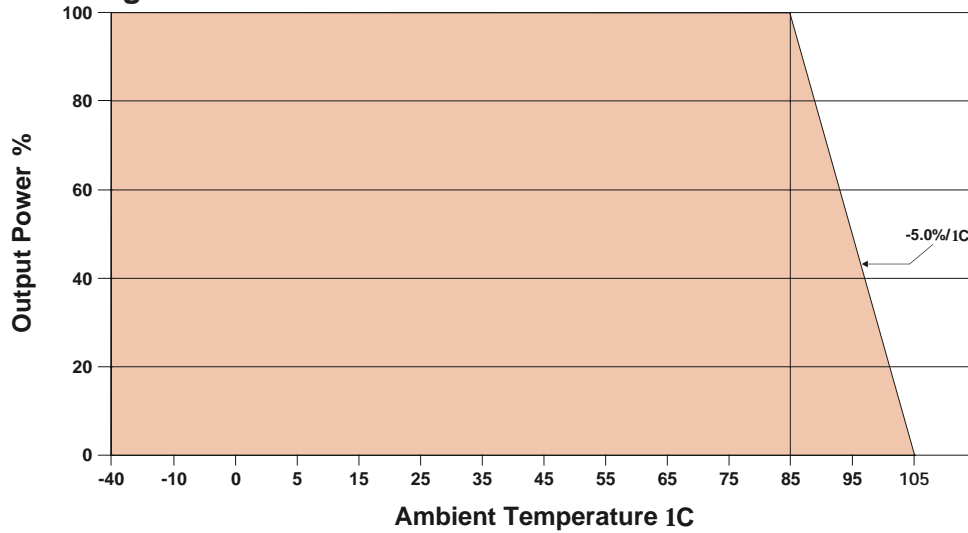
Parameter	Conditions	Min.	Typ.	Max.	Units
Input Voltage Surge (1 Sec)	5 VDC Input	-0.7		6.0	VDC
	12 VDC Input	-0.7		14.0	
	24 VDC Input	-0.7		28.0	
Internal Power Dissipation	All Models			450	mW

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

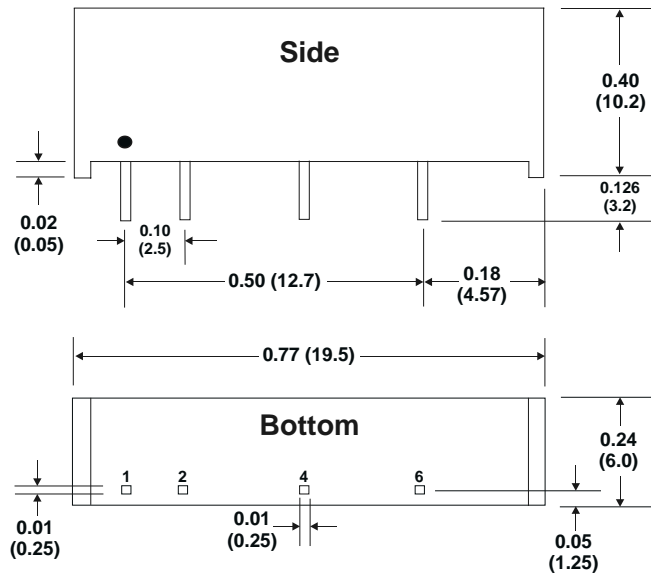
## Model Selection Guide

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					
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



## Mechanical Dimensions



## Capacitive Load

μF Max
33

## Pin Connections

Pin	Single
1	+Vin
2	-Vin
4	-Vout
6	+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 side of the unit



**MicroPower  
Direct**

**CompuMess Elektronik GmbH**

Lise-Meitner-Str.1, 85716 Unterschleissheim

Tel 089-321501-0 Fax 089-321501-11

<http://www.compumess.de> oder <http://www.netzteile.de>