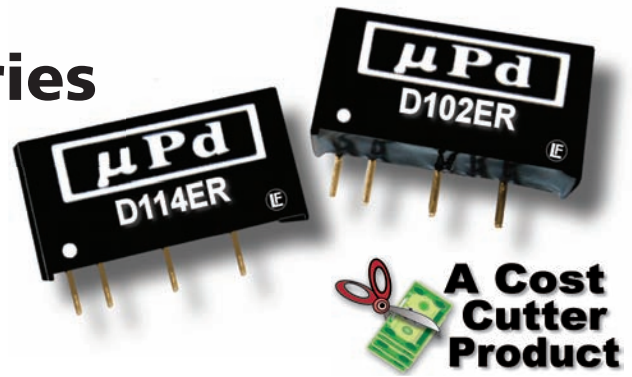


# D100ER Series

## Low Cost, 1W SIP Tightly Regulated DC/DC Converters



### Key Features:

- 1W Output Power
- Tightly Regulated
- Single & Dual Outputs
- Miniature SIP Case
- 1,000 VDC Isolation
- >3.5 MHour MTBF
- 24 Standard Models
- Industry Standard Pin-Out
- LOWEST COST!!



**RoHS Compliant**

### MicroPower Direct

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### 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	4.75	5.0	5.25	VDC
	12 VDC Input	11.4	12.0	12.6	
	24 VDC Input	22.8	24.0	25.2	
Input Filter	Internal Capacitor				
Reverse Polarity Input Current				0.3	A

#### Output

Parameter	Conditions	Min.	Typ.	Max.	Units
Output Voltage Accuracy				±3.0	%
Output Voltage Balance	Dual Output , Balanced Loads		±0.1	±1.0	%
Line Regulation	For Vin Min to Max			±0.25	%
Load Regulation (Note 1)	For Iout = 10% to 100%			±1.0	%
Ripple & Noise (20 MHz) (Note 3)			10	20	mV P - P
Output Power Protection		120			%
Temperature Coefficient				±0.03	%/°C
Output Short Circuit	Momentary (1.0 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			100		kHz

#### Environmental

Parameter	Conditions	Min.	Typ.	Max.	Units
Operating Temperature Range	Ambient	-40	+25	+85	°C
Operating Temperature Range	Case	-40		+90	°C
Storage Temperature Range		-55		+125	°C
Cooling	Free Air Convection				
Humidity	RH, Non-condensing			95	%

#### Physical

Case Size (Single Output)	0.77 x 0.24 x 0.40 Inches (19.6 x 6.0 x 10.2 mm)				
Case Size (Dual Output)	1.08 x 0.37 x 0.47 Inches (27.5 x 9.5 x 12.0 mm)				
Case Material	Non-Conductive Black Plastic (UL94-V0)				
Weight	0.07 Oz (2.1g)				

#### Reliability Specifications

Parameter	Conditions	Min.	Typ.	Max.	Units
MTBF	MIL HDBK 217F, 25°C, Gnd Benign	3.5			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	
Lead Temperature	1.5 mm From Case For 10 Sec			300	°C
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

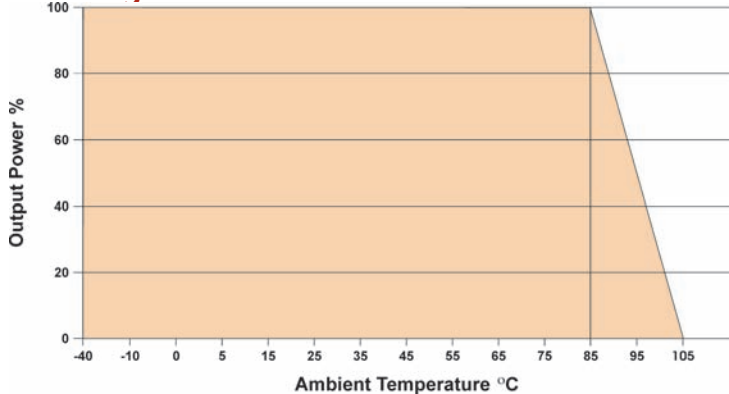
Model Number	Input				Output			Efficiency (% , Typ)	Fuse Rating Slow-Blow (mA)
	Voltage (VDC)		Current (mA)		Voltage (VDC)	Current (mA, Max)	Current (mA, Min)		
	Nominal	Range	Full-Load	No-Load					
D101ER	5	4.75 - 5.25	294	30	5.0	200.0	20.0	68	500
D102ER	5	4.75 - 5.25	286	30	9.0	111.0	12.0	70	500
D103ER	5	4.75 - 5.25	282	30	12.0	83.0	9.0	71	500
D104ER	5	4.75 - 5.25	278	30	15.0	67.0	7.0	72	500
D105ER	5	4.75 - 5.25	290	30	±5.0	±100.0	±10.0	69	500
D106ER	5	4.75 - 5.25	286	30	±9.0	±56.0	±6.0	70	500
D107ER	5	4.75 - 5.25	278	30	±12.0	±42.0	±5.0	72	500
D108ER	5	4.75 - 5.25	278	30	±15.0	±33.0	±4.0	72	500
D111ER	12	11.4 - 12.6	121	15	5.0	150.0	15.0	69	200
D112ER	12	11.4 - 12.6	117	15	9.0	111.0	12.0	71	200
D113ER	12	11.4 - 12.6	116	15	12.0	83.0	9.0	72	200
D114ER	12	11.4 - 12.6	116	15	15.0	67.0	7.0	72	200
D115ER	12	11.4 - 12.6	119	15	±5.0	±100.0	±10.0	70	200
D116ER	12	11.4 - 12.6	116	15	±9.0	±56.0	±6.0	72	200
D117ER	12	11.4 - 12.6	114	15	±12.0	±42.0	±5.0	73	200
D118ER	12	11.4 - 12.6	114	15	±15.0	±33.0	±4.0	73	200
D121ER	24	22.8 - 25.2	59	8	5.0	150.0	15.0	70	100
D122ER	24	22.8 - 25.2	58	8	9.0	111.0	12.0	72	100
D123ER	24	22.8 - 25.2	57	8	12.0	83.0	9.0	73	100
D124ER	24	22.8 - 25.2	57	8	15.0	67.0	7.0	73	100
D125ER	24	22.8 - 25.2	58	8	±5.0	±100.0	±10.0	72	100
D126ER	24	22.8 - 25.2	58	8	±9.0	±56.0	±6.0	72	100
D127ER	24	22.8 - 25.2	57	8	±12.0	±42.0	±5.0	73	100
D128ER	24	22.8 - 25.2	57	8	±15.0	±33.0	±4.0	73	100

### Notes:

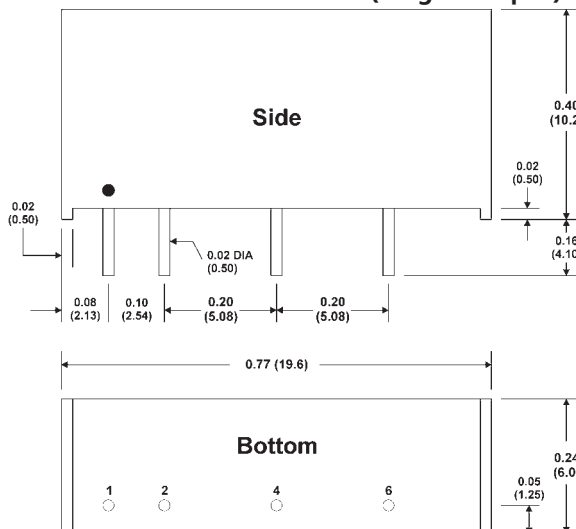
- Output load regulation is specified for a load change of 10% to 100%.
- These units should not be operated with a load under 10% of full load. Operation at no-load may cause damage to the unit.
- These converters will operate without external components. However, when measuring output ripple, it is recommended that an external 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. An input capacitor will enhance stability over temperature and input line variations. Recommended capacitor values are given in the table at right. For applications requiring very low output noise levels, a simple LC filter should be effective.
- It is recommended that a fuse be used on the input of a power supply for protection. See the Model Selection table above for the correct rating.

Vin	Input Capacitor	Vout	Output Capacitor	
			Single	Dual
5 VDC	4.7 $\mu$ F	5 VDC	10.0 $\mu$ F	4.7 $\mu$ F
12 VDC	2.2 $\mu$ F	9 VDC	4.7 $\mu$ F	2.2 $\mu$ F
24 VDC	1.0 $\mu$ F	12 VDC	2.2 $\mu$ F	1.0 $\mu$ F
		15 VDC	1.0 $\mu$ F	0.47 $\mu$ F

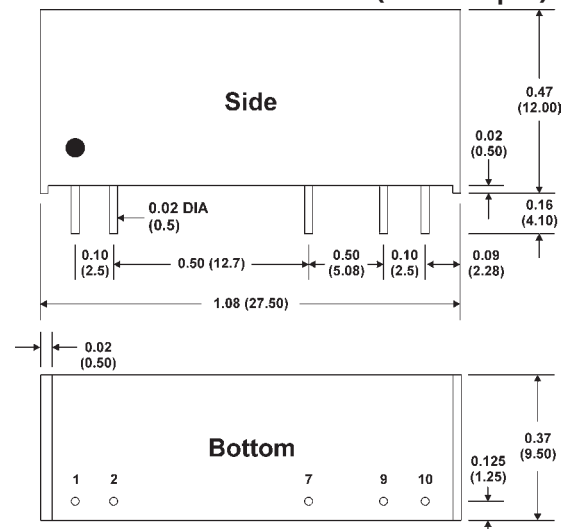
### Derating Curve



### Mechanical Dimensions (Single Output)



### Mechanical Dimensions (Dual Output)



### 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



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