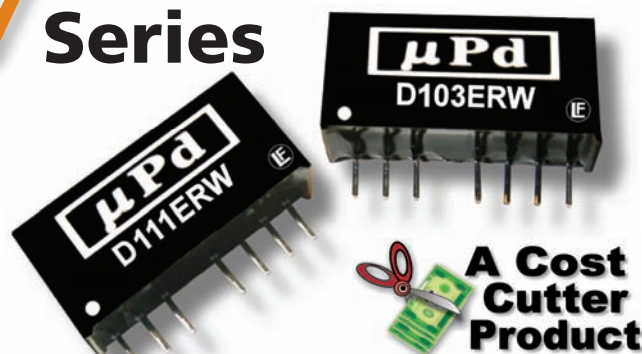


D100ERW Series

Low Cost, Miniature 1W SIP, Wide Input DC/DC Converters



Key Features:

- 1W Output Power
- 2:1 Input Voltage Range
- 1,500 VDC Isolation
- Short Circuit Protected
- Miniature SIP Case
- Single & Dual Outputs
- 1.0 MH MTBF
- Industry Standard Pin-Out
- **Low Low Cost!!**



RoHS Compliant

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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	4.5	5.0	9.0	VDC
	12 VDC Input	9.0	12.0	18.0	
	24 VDC Input	18.0	24.0	36.0	
	48 VDC Input	36.0	48.0	72.0	
Reverse Polarity Input Current				1.0	A
Short Circuit Input Power				1,500	mW

Output

Parameter	Conditions	Min.	Typ.	Max.	Units
Output Voltage Accuracy			±1.0	±3.0	%
Output Voltage Balance			±1.0	±2.0	%
Line Regulation	Vin = Min to Max		±0.2	±0.5	%
Load Regulation, Single Output	Iout = 10% to 100%		±0.5	±0.75	%
Load Regulation, Dual Output	Iout = 10% to 100%		±0.5	±1.0	%
Ripple & Noise (20 MHz) (Note 1)			25	100	mV P - P
Output Power Protection		120			%
Temperature Coefficient				±0.03	%/°C
Output Short Circuit	Continuous with Autorecovery				

General

Parameter	Conditions	Min.	Typ.	Max.	Units
Isolation Voltage	60 Seconds	1,500			VDC
Isolation Resistance	500 VDC	1,000			MΩ
Isolation Capacitance	100 kHz, 1V		80		pF
Switching Frequency	Iout = 100%	180		550	kHz

Environmental

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

Physical

Case Size	0.87 x 0.47 x 0.37 Inches (22.0 x 12.0 x 9.50 mm)
Case Material	Non-Conductive Black Plastic (UL94-V0)
Weight	0.19 Oz (5.5g)

Reliability Specifications

Parameter	Conditions	Min.	Typ.	Max.	Units
MTBF	MIL HDBK 217F, 25°C, Gnd Benign	1.0			MHours

Absolute Maximum Ratings

Parameter	Conditions	Min.	Typ.	Max.	Units
Input Voltage Surge (1 Sec)	5 VDC Input	-0.7		11.0	VDC
	12 VDC Input	-0.7		22.0	
	24 VDC Input	-0.7		40.0	
	48 VDC Input	-0.7		80.0	
Lead Temperature	1.5 mm From Case For 10 Sec			300	°C
Internal Power Dissipation	All Models			1,800	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					
D101ERW	5	4.5 - 9.0	303	40	3.3	303.0	30.0	66	750
D102ERW	5	4.5 - 9.0	286	40	5.0	200.0	20.0	70	750
D103ERW	5	4.5 - 9.0	273	40	12.0	83.0	8.0	73	750
D104ERW	5	4.5 - 9.0	277	40	15.0	67.0	12.0	72	750
D105ERW	5	4.5 - 9.0	286	40	24.0	42.0	4.0	70	750
D106ERW	5	4.5 - 9.0	282	40	±5.0	±100.0	±10.0	71	750
D107ERW	5	4.5 - 9.0	273	40	±12.0	±42.0	±4.0	73	750
D108ERW	5	4.5 - 9.0	273	40	±15.0	±33.0	±3.0	73	750
D109ERW	5	4.5 - 9.0	282	40	±24.0	±21.0	±2.0	71	750
D111ERW	12	9.0 - 18.0	122	20	3.3	303.0	30.0	68	400
D112ERW	12	9.0 - 18.0	111	20	5.0	200.0	20.0	75	400
D113ERW	12	9.0 - 18.0	106	20	12.0	83.0	8.0	78	400
D114ERW	12	9.0 - 18.0	106	20	15.0	67.0	12.0	78	400
D115ERW	12	9.0 - 18.0	108	20	24.0	42.0	4.0	77	400
D116ERW	12	9.0 - 18.0	111	20	±5.0	±100.0	±10.0	75	400
D117ERW	12	9.0 - 18.0	108	20	±12.0	±42.0	±4.0	77	400
D118ERW	12	9.0 - 18.0	110	20	±15.0	±33.0	±3.0	76	400
D119ERW	12	9.0 - 18.0	108	20	±24.0	±21.0	±2.0	77	400
D121ERW	24	18.0 - 36.0	60	10	3.3	303.0	30.0	70	150
D122ERW	24	18.0 - 36.0	57	10	5.0	200.0	20.0	73	150
D123ERW	24	18.0 - 36.0	53	10	12.0	83.0	8.0	78	150
D124ERW	24	18.0 - 36.0	55	10	15.0	67.0	12.0	76	150
D125ERW	24	18.0 - 36.0	54	10	24.0	42.0	4.0	77	150
D126ERW	24	18.0 - 36.0	55	10	±5.0	±100.0	±10.0	76	150
D127ERW	24	18.0 - 36.0	54	10	±12.0	±42.0	±4.0	78	150
D128ERW	24	18.0 - 36.0	53	10	±15.0	±33.0	±3.0	78	150
D129ERW	24	18.0 - 36.0	53	10	±24.0	±21.0	±2.0	78	150
D131ERW	48	36.0 - 72.0	29	5	3.3	303.0	30.0	71	75
D132ERW	48	36.0 - 72.0	29	5	5.0	200.0	20.0	73	75
D133ERW	48	36.0 - 72.0	27	5	12.0	83.0	8.0	78	75
D134ERW	48	36.0 - 72.0	27	5	15.0	67.0	12.0	76	75
D135ERW	48	36.0 - 72.0	27	5	24.0	42.0	4.0	78	75
D136ERW	48	36.0 - 72.0	28	5	±5.0	±100.0	±10.0	75	75
D137ERW	48	36.0 - 72.0	27	5	±12.0	±42.0	±4.0	78	75
D138ERW	48	36.0 - 72.0	27	5	±15.0	±33.0	±3.0	78	75
D139ERW	48	36.0 - 72.0	27	5	±24.0	±21.0	±2.0	76	75

Notes:

- When measuring output ripple, it is recommended that an external ceramic capacitor (approx. 1 μF to 10 μF) be placed from the +Vout pin to the -Vout pin for single output units and from each output to common for dual output units.
- 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 are specified for operation without external components. However, in some applications the addition of input/output capacitors will enhance stability and reduce output ripple. Recommended capacitor values are given in the table at right.

Vin	Input Capacitor	Vout	Output Capacitor	
			0 - 70°C (Electrolytic)	-40 - 85°C (Tantalum)
12 VDC	100 μF	5 VDC	100 μF	47 μF
15 VDC	100 μF	12 VDC	100 μF	47 μF
24 VDC	10 μF	15 VDC	100 μF	47 μF
48 VDC	10 μF			

Output ripple on single output units may be further enhanced by using the CS terminal (single output units operated at 50% load or below should use this function). A low ESR capacitor is connected between the CS pin and the -Vout pin (the anode of the capacitor is connected to the -Vout pin). Recommended capacitor values are given in the table above. If not used, the CS pin should be left open.

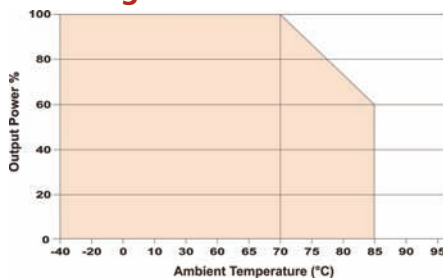
	Output Voltage				
	3.3V	5V	12V	15V	24V
CS	47 μF - 100 μF		22 μF - 47 μF		

- Dual output units may be connected to provide a 10V, 24V, 30V or 48 VDC output. To do this, connect the load across the +Vout and -Vout outputs and float the output common.
- The remote on/off control pin is referenced to the -Vin pin. Input current to the pin should be between 5 - 10 mA with a maximum of 20 mA.
- 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.

Mechanical Notes:

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

Derating Curve

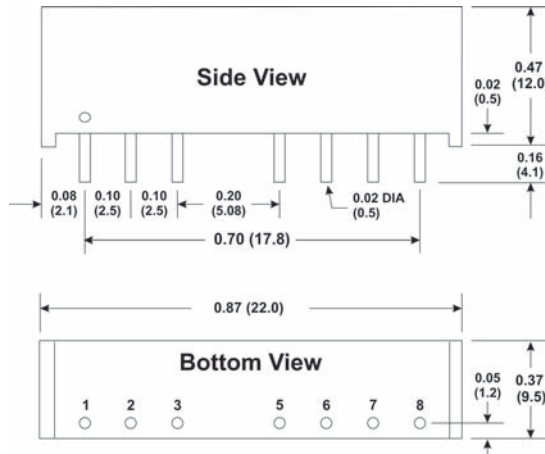


Pin Connections

Pin	Single	Dual
1	-Vin	-Vin
2	+Vin	+Vin
3	Remote ON/OFF	
5	NF	NF
6	+Vout	+Vout
7	-Vout	Common
8	CS	-Vout

NF = No Function

Mechanical Dimensions



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