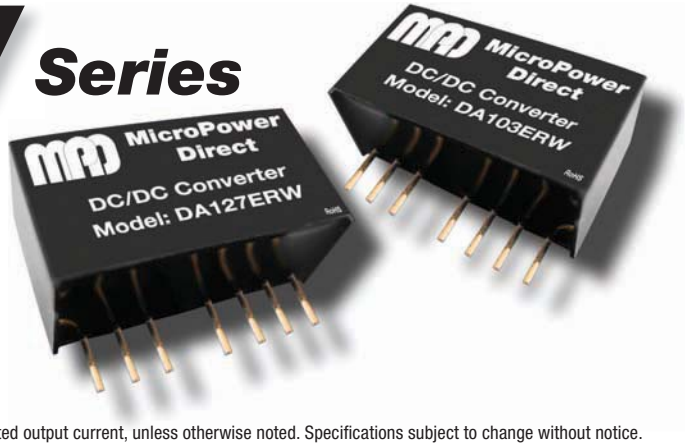
DA100ERW Series

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

Another Cost Cutter Product From MPD

MicroPower Direct

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	
No-Load Power Consumption			120		mW

Output

Parameter	Conditions	Min.	Typ.	Max.	Units
Output Voltage Accuracy			±1.0	±3.0	%
Output Voltage Balance			±1.0		%
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)	See Note 1		25	75	mV P - P
Temperature Coefficient				±0.03	%/°C
Output Short Circuit	Continuous (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		35		pF
Switching Frequency			300		kHz

Environmental

Parameter	Conditions	Min.	Typ.	Max.	Units
Operating Temperature Range	Ambient	-40	+25	+85	°C
Storage Temperature Range		-50		+125	°C
Cooling	Free Air Convection				
Humidity	RH, Non-condensing			95	%

Physical

Case Size	0.866 x 0.374 x 0.472 Inches (22.0 x 12.0 x 9.50 mm)
Case Material	Non-Conductive Black Plastic (UL94-V0)
Weight	0.17 Oz (5.0g)

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

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

Model Selection Guide

Model Number	Input				Output			Capcitive Load (µF, 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						
DA102ERW	5	4.5 - 9.0	277	40	5.0	200.0	20.0	680	72	750
DA103ERW	5	4.5 - 9.0	263	40	12.0	83.0	8.0	470	76	750
DA104ERW	5	4.5 - 9.0	266	40	15.0	67.0	7.0	330	75	750
DA106ERW	5	4.5 - 9.0	277	40	±5.0	±100.0	±10.0	±330	72	750
DA107ERW	5	4.5 - 9.0	263	40	±12.0	±42.0	±4.0	±220	76	750
DA108ERW	5	4.5 - 9.0	263	40	±15.0	±33.0	±3.0	±150	76	750
DA112ERW	12	9.0 - 18.0	109	20	5.0	200.0	20.0	680	76	400
DA113ERW	12	9.0 - 18.0	104	20	12.0	83.0	8.0	470	80	400
DA114ERW	12	9.0 - 18.0	104	20	15.0	67.0	7.0	330	80	400
DA116ERW	12	9.0 - 18.0	109	20	±5.0	±100.0	±10.0	±330	76	400
DA117ERW	12	9.0 - 18.0	104	20	±12.0	±42.0	±4.0	±220	80	400
DA118ERW	12	9.0 - 18.0	104	20	±15.0	±33.0	±3.0	±150	80	400
DA122ERW	24	18.0 - 36.0	54	10	5.0	200.0	20.0	680	76	150
DA123ERW	24	18.0 - 36.0	51	10	12.0	83.0	8.0	470	81	150
DA124ERW	24	18.0 - 36.0	51	10	15.0	67.0	7.0	330	81	150
DA126ERW	24	18.0 - 36.0	53	10	±5.0	±100.0	±10.0	±330	78	150
DA127ERW	24	18.0 - 36.0	51	10	±12.0	±42.0	±4.0	±220	81	150
DA128ERW	24	18.0 - 36.0	51	10	±15.0	±33.0	±3.0	±150	81	150
DA132ERW	48	36.0 - 72.0	27	5	5.0	200.0	20.0	680	76	75
DA133ERW	48	36.0 - 72.0	26	5	12.0	83.0	8.0	470	80	75
DA134ERW	48	36.0 - 72.0	26	5	15.0	67.0	7.0	330	80	75
DA136ERW	48	36.0 - 72.0	27	5	±5.0	±100.0	±10.0	±330	76	75
DA137ERW	48	36.0 - 72.0	26	5	±12.0	±42.0	±4.0	±220	80	75
DA138ERW	48	36.0 - 72.0	26	5	±15.0	±33.0	±3.0	±150	80	75

Notes:

1. 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.
2. These units should not be operated with a load under 10% of full load. Operation at no-load may cause damage to the unit.
3. 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.
   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.

Vin	Input Capacitor	Vout	Output Capacitor
5 VDC	100 µF	5 VDC	47 µF
12 VDC	100 µF	12 VDC	47 µF
24 VDC	10 µF	15 VDC	47 µF
48 VDC	10 µF		

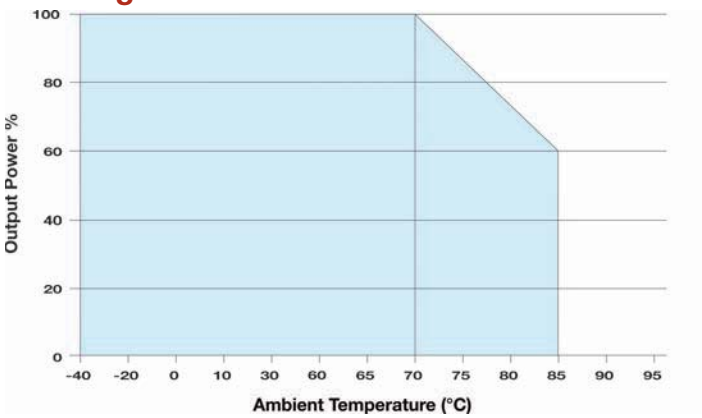
	Output Voltage			
	5V	12V	15V	24V
CS (µF)	47 - 100	22 - 47		

4. Dual output units may be connected to provide a 10V, 24V, or 30 VDC output. To do this, connect the load across the +Vout and -Vout outputs and float the output common.
5. 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. Exceeding 20 mA could cause damage to the unit.

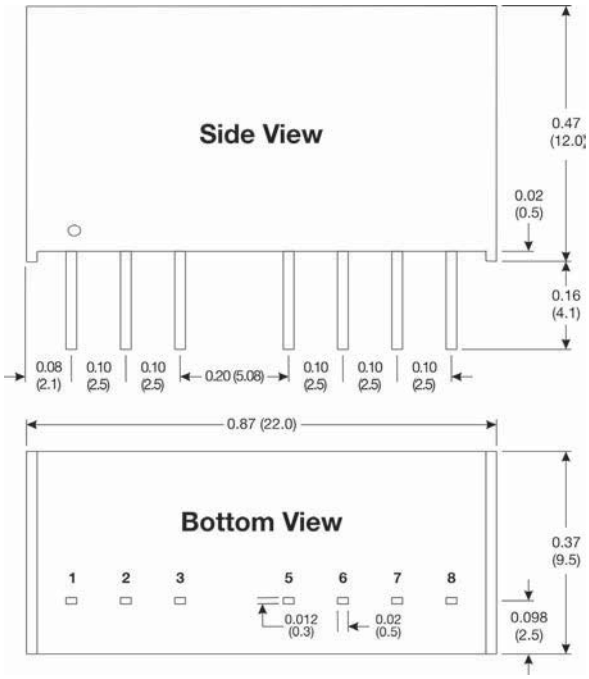
	Min	Max
On	<0.6 VDC to Open Circuit	
Off	2.7 VDC	15.0 VDC

6. 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.

Derating Curve



Mechanical Dimensions



Mechanical Notes:

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

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