A100ERU Series

Single & Dual Output, 1.5W Ultra-Wide Input Range DC/DC Converters



A Cost Cutter Product

Key Features:

- 1.5W Output Power
- 4:1 Input Voltage Range
- 1,500 VDC Isolation
- -40ºC to +85ºC Temp Range
- Compact DIP Case
- Single & Dual Outputs
- 1.0 MH MTBF
- Industry Standard Pin-Out
- ***Low, Low Cost!***

RoHS

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 (See Note 1)	24 VDC Input	9.0	24.0	36.0	VDC
	48 VDC Input	18.0	48.0	72.0	
Input Filter	Capacitors				
Short Circuit Input Power			1,000		mW

Output

Parameter	Conditions	Min.	Typ.	Max.	Units
Output Voltage Accuracy			±1.0	±3.0	%
Output Voltage Balance	Dual Output , Balanced Loads		±3.0		%
Line Regulation	Vin = Min to Max		±0.2	±0.75	%
Load Regulation	Iout = 10% to 100%		±0.5	±2.0	%
Noise (20 Hz - 300 kHz)	See Note 2		50	100	mV P - P
Ripple (DC - 20 MHz)				50	mV P - P
Output Power Protection		120			%
Temperature Coefficient				±0.03	%/ºC
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		pF
Switching Frequency				550	kHz

Environmental

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

Physical

Case Size (See Note 3)	1.25 x 0.80 x 0.37 Inches (31.8 x 20.3 x 9.5 mm)
Case Material (See Note 3)	Non-Conductive Black Plastic (UL94V-0)
Weight	0.52 Oz (15g)

Reliability Specifications

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

Absolute Maximum Ratings

Parameter	Conditions	Min.	Typ.	Max.	Units
Input Voltage Surge (1 Sec)	24 VDC Input	-0.7		50.0	VDC
	48 VDC Input	-0.7		100.0	
Lead Temperature	1.5 mm From Case For 10 Sec			300	ºC
Internal Power Dissipation	All Models			1,500	mW

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

MicroPower Direct
292 Page Street
Suite D
Stoughton, MA 02072
USA

T: (781) 344-8226
F: (781) 344-8481
E: sales@micropowerdirect.com
W: www.micropowerdirect.com

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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					
A101ERU	24	9.0 - 36.0	86	20	3.3	500	50.0	73	200
A102ERU	24	9.0 - 36.0	83	20	5.0	300	30.0	75	200
A103ERU	24	9.0 - 36.0	80	20	9.0	167	17.0	78	200
A104ERU	24	9.0 - 36.0	78	20	12.0	125	12.0	80	200
A105ERU	24	9.0 - 36.0	77	20	15.0	100	10.0	81	200
A106ERU	24	9.0 - 36.0	85	20	±5.0	±150	±15.0	73	200
A107ERU	24	9.0 - 36.0	80	20	±12.0	±63	±6.0	78	200
A108ERU	24	9.0 - 36.0	79	20	±15.0	±50	±5.0	79	200
A111ERU	48	18.0 - 72.0	43	10	3.3	500	50.0	72	150
A112ERU	48	18.0 - 72.0	42	10	5.0	300	30.0	74	150
A113ERU	48	18.0 - 72.0	40	10	5.0	167	17.0	77	150
A114ERU	48	18.0 - 72.0	39	10	12.0	125	12.0	79	150
A115ERU	48	18.0 - 72.0	39	10	15.0	100	10.0	80	150
A116ERU	48	18.0 - 72.0	43	10	±5.0	±150	±15.0	72	150
A117ERU	48	18.0 - 72.0	40	10	±12.0	±63	±6.0	77	150
A118ERU	48	18.0 - 72.0	40	10	±15.0	±50	±5.0	78	150

For models with a metal case, add an "M" to the model number (ie: A115ERUM)

Notes:

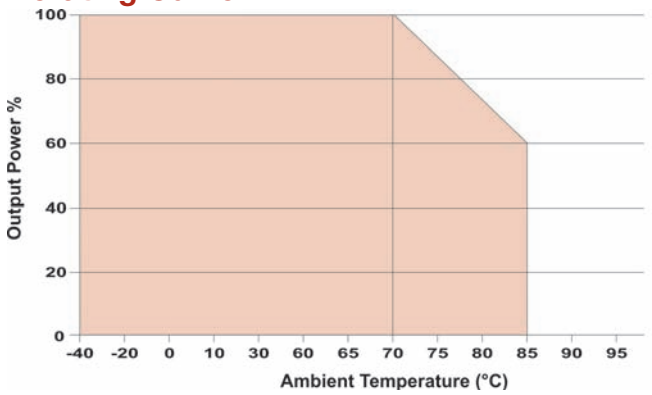
1. Exceeding the input range by a significant margin may damage the units. For 24V input the input voltage should not exceed 40V; for 48V models it should not exceed 80V.
2. When measuring output ripple, it is recommended that an external 0.33 μF ceramic capacitor be placed from the +Vout pin to the -Vout pin for single output units and from each output to common for dual output units.
3. The optional metal package is nickel plated steel. Dimensions are 1.25 x 0.80 x 0.39 Inches (31.8 x 20.3 x 10.0 mm).
4. These units should not be operated with a load under the specified minimum. Operation at no-load will increase ripple significantly and may cause damage to the unit.
5. 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:

Vin (VDC)	Input Capacitor		Vout (VDC)	Output Capacitor	
				0 to +70ºC (Electrolytic)	-40 to +85ºC (Tantalum)
24	Sing	10 μF	3.3	100 μF	47 μF
	Dual	10 ~ 47 μF	5	100 μF	47 μF
48	Sing	10 μF	12	100 μF	47 μF
	Dual	10 ~ 47 μF	15	100 μF	47 μF

For applications requiring very low output noise levels, a simple LC filter should be effective.

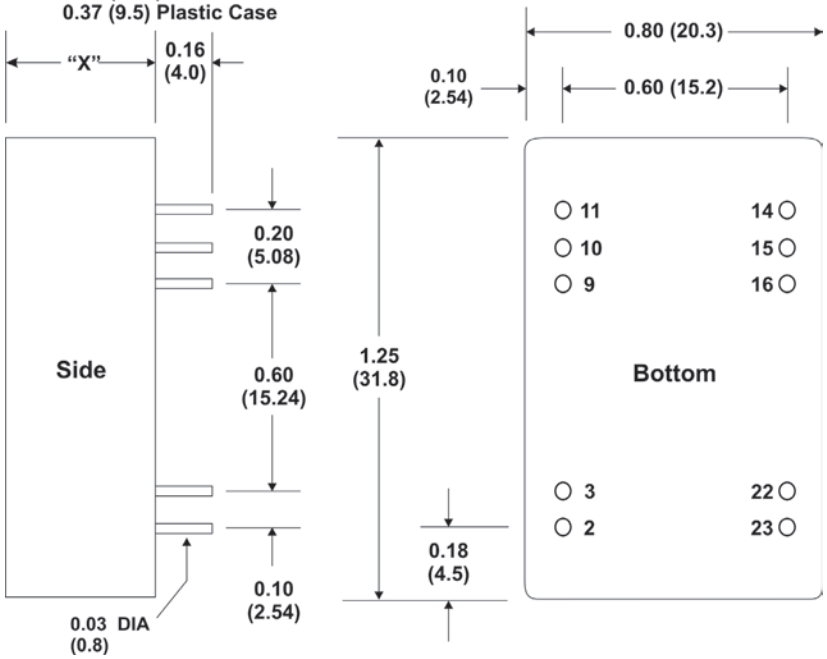
6. It is recommended that a fuse be used on the input of a power supply for protection. See the Model Selection table above for the correct rating.

Derating Curve



Mechanical Dimensions

"X" = 0.39 (10.0) Metal Case
0.37 (9.5) Plastic Case



Mechanical Notes:

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

Pin Connections

Pin	Single	Dual
2, 3	-Vin	-Vin
9	No Pin	Common
10	NC	NC
11	NC	-Vout
14	+Vout	+Vout
15	NC	NC
16	-Vout	Common
22, 23	+Vin	+Vin

NC: No Connection

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292 Page Street Ste D Stoughton, MA 02072 • TEL: (781) 344-8226 • FAX: (781) 344-8481 • E-Mail: sales@micropowerdirect.com