A800ERW Series

Low Cost, 8W DIP Wide Input Range DC/DC Converters



Key Features:

- 8W Output Power
- 2:1 Input Voltage Range
- 1,500 VDC Isolation
- -40°C Operation
- Compact DIP Case
- Single & Dual Outputs
- 1.0 MH MTBF
- Industry Standard Pin-Out
- ***Lowest 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	75.0	
Input Filter	π (Pi) Filter				
Reverse Polarity Input Current				1.0	A
Short Circuit Input Power			1,000	3,000	mW

Output

Parameter	Conditions	Min.	Typ.	Max.	Units
Output Voltage Accuracy			±2.0		%
Output Voltage Balance	Dual Output , Balanced Loads		±2.0		%
Line Regulation	Vin = Min to Max			±0.5	%
Load Regulation, Single Output	Iout = 25% to 100%			±0.5	%
Load Regulation, Dual Output	Iout = 25% to 100%			±2.0	%
Ripple & Noise (20 MHz) (Note 1)	3.3 VDC, 5 VDC Output			80	mV P - P
Ripple & Noise (20 MHz)	All Other Outputs.			1	% P - P
Output Power Protection		110			%
Transient Recovery Time (Note 2)	50% Load Step Change			300	μSec
Transient Response Deviation			±2.0	±6.0	%
Temperature Coefficient				±0.05	%/°C
Output Short Circuit	Continuous				

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		380		pF
Switching Frequency			300		kHz

Environmental

Parameter	Conditions	Min.	Typ.	Max.	Units
Operating Temperature Range	Ambient	-40	+25	+75	°C
Operating Temperature Range	Case	-40		+95	°C
Storage Temperature Range		-40		+115	°C
Cooling	Free Air Convection				
Humidity	RH, Non-condensing			95	%

Physical

Case Size	1.25 x 0.80 x 0.50 Inches (31.8 x 20.3 x 12.7 mm)
Case Material	Non-Conductive Black Plastic (UL94-V0)
Weight	0.56 Oz (16g)

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		16.0	VDC
	12 VDC Input	-0.7		25.0	
	24 VDC Input	-0.7		50.0	
	48 VDC Input	-0.7		100.0	
Lead Temperature	1.5 mm From Case For 10 Sec			260	°C
Internal Power Dissipation	All Models			2,500	mW

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

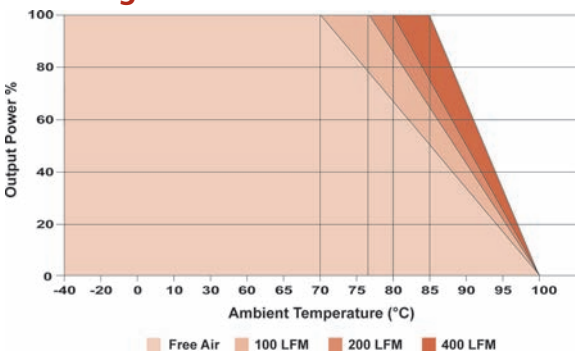
Model Selection Guide

Model Number	Input					Output			Efficiency (%, Typ)	Fuse Rating Slow-Blow (mA)
	Voltage (VDC)		Current (mA)		Reflected Ripple Current (mA, Typ)	Voltage (VDC)	Current (mA, Max)	Current (mA, Min)		
	Nominal	Range	Full-Load	No-Load						
A801ERW	5	4.5 - 9.0	1430	50	25	3.3	1,600.0	60.0	74	4,000
A802ERW	5	4.5 - 9.0	2030	50	25	5.0	1,600.0	50.0	79	4,000
A803ERW	5	4.5 - 9.0	1920	50	25	12.0	660.0	25.0	83	4,000
A804ERW	5	4.5 - 9.0	1920	50	25	15.0	530.0	20.0	83	4,000
A805ERW	5	4.5 - 9.0	2030	50	25	±5.0	±800.0	±80.0	79	4,000
A806ERW	5	4.5 - 9.0	1930	50	25	±12.0	±330.0	±33.5	82	4,000
A807ERW	5	4.5 - 9.0	1930	50	25	±15.0	±260.0	±26.0	82	4,000
A811ERW	12	9.0 - 18.0	666	20	15	3.3	1,200.0	60.0	75	2,000
A812ERW	12	9.0 - 18.0	833	20	15	5.0	1,000.0	50.0	80	2,000
A813ERW	12	9.0 - 18.0	775	20	15	12.0	660.0	25.0	86	2,000
A814ERW	12	9.0 - 18.0	775	20	15	15.0	530.0	20.0	86	2,000
A815ERW	12	9.0 - 18.0	813	20	15	±5.0	±800.0	±80.0	82	2,000
A816ERW	12	9.0 - 18.0	775	20	15	±12.0	±330.0	±33.5	86	2,000
A817ERW	12	9.0 - 18.0	775	20	15	±15.0	±260.0	±26.0	86	2,000
A821ERW	24	18.0 - 36.0	321	10	10	3.3	1,200.0	60.0	78	1,000
A822ERW	24	18.0 - 36.0	397	10	10	5.0	1,000.0	50.0	84	1,000
A823ERW	24	18.0 - 36.0	387	10	10	12.0	660.0	25.0	86	1,000
A824ERW	24	18.0 - 36.0	387	10	10	15.0	530.0	20.0	86	1,000
A825ERW	24	18.0 - 36.0	397	10	10	±5.0	±800.0	±80.0	84	1,000
A826ERW	24	18.0 - 36.0	387	10	10	±12.0	±330.0	±33.5	86	1,000
A827ERW	24	18.0 - 36.0	387	10	10	±15.0	±260.0	±26.0	86	1,000
A831ERW	48	36.0 - 75.0	160	6	100	3.3	1,200.0	60.0	78	500
A832ERW	48	36.0 - 75.0	198	6	100	5.0	1,000.0	50.0	84	500
A833ERW	48	36.0 - 75.0	194	6	100	12.0	660.0	25.0	86	500
A834ERW	48	36.0 - 75.0	194	6	100	15.0	530.0	20.0	86	500
A835ERW	48	36.0 - 75.0	198	6	100	±5.0	±800.0	±80.0	84	500
A836ERW	48	36.0 - 75.0	194	6	100	±12.0	±330.0	±33.5	86	500
A837ERW	48	36.0 - 75.0	194	6	100	±15.0	±260.0	±26.0	86	500

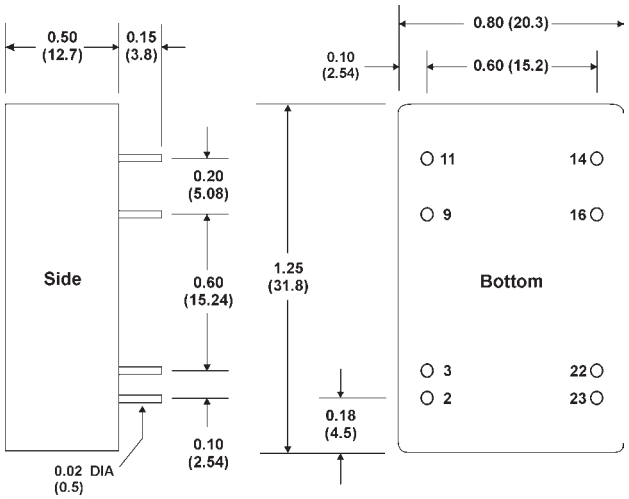
Notes:

1. When measuring output ripple, it is recommended that an external 0.47 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. For noise sensitive applications, the use of 3.3 µF capacitors will reduce the output ripple.
2. Transient recovery is measured to within a 1% error band for a load step change of 50% to 100%.
3. Operation at no-load will not damage these units. However, they may not meet all specifications.
4. Dual output units may be connected to provide a 10 VDC, 24 VDC or 30 VDC output. To do this, connect the load across the positive (+Vout) and negative (-Vout) outputs and float the output common.
5. The converter should be connected to a low ac-impedance source. An input source with a highly inductive impedance may affect the stability of the converter. In applications where the converter output loading is high and input power is supplied over long lines, it may be necessary to use a capacitor on the input to insure start-up.
   In this case, it is recommended that a low ESR (ESR <1.0Ω at 100 kHz) capacitor be mounted close to the converter. For 5V input units a 10 µF is recommended, for 12V input units, a 3.3 µF; and for 24V & 48V units a 2.2 µF.
6. It is recommended that a fuse be used on the input of a power supply for protection. See the table above for the correct rating.

Derating Curve



Mechanical Dimensions



Pin Connections

Pin	Single	Dual
2, 3	-Vin	-Vin
9	No Pin	Common
11	NC	-Vout

Pin	Single	Dual
14	+Vout	+Vout
16	-Vout	Common
22, 23	+Vin	+Vin

NC: No Connection

Mechanical Notes:

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

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