A600ERWI Series

High Isolation, 6W Single & Dual Output DC/DC Converters

A Cost Cutter Product

Key Features:

- 6W Output Power
- 3,000 Isolation
- 2:1 Input Voltage Range
- Efficiency to 86%
- 28 Standard Models
- Single & Dual Outputs
- 1.0 MH MTBF
- Industry Standard Pin-Out

RoHS

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	
Input Filter	LC Filter				

Output

Parameter	Conditions	Min.	Typ.	Max.	Units
Output Voltage Accuracy	Positive		±1.0	±3.0	%
	Negative		±3.0	±5.0	
Output Voltage Balance	Dual Output , Balanced Loads		±0.5		%
Line Regulation	Vin = Min to Max		±0.2	±0.5	%
Load Regulation	Iout = 10% to 100%		±0.5	±1.0	%
Ripple (20 MHz)	See Note 1		20	50	mV P - P
Noise (20 MHz)	See Note 1		75	150	mV P - P
Output Power Protection			120		% I_{OUT}
Temperature Coefficient			±0.02		%/°C
Output Short Circuit Protection	Continuous (Autorecovery)				

General

Parameter	Conditions	Min.	Typ.	Max.	Units
Isolation Voltage (Input/Output)	60 Seconds	3,000			VDC
Isolation Resistance	500 VDC	1,000			MΩ
Isolation Capacitance	100 kHz/1V		125		pF
Switching Frequency			300		kHz

Environmental

Parameter	Conditions	Min.	Typ.	Max.	Units
Operating Temperature Range	Ambient	-40		+71	°C
Storage Temperature Range		-55		+125	°C
Cooling	Free Air Convection				
Humidity	RH, Non-condensing		95		%

Physical

Case Size	1.25 x 0.80 x 0.37 Inches (31.8 x 20.3 x 9.5 mm)
Case Material	Non-Conductive Black Plastic (UL94V-0)
Weight	0.58 Oz (17g)

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.

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Model Selection Guide

Model Number	Input				Output			Efficiency (%, Typ)	Fuse Rating Slow-Blow (mA)	Max Cap. Load (µF Max)
	Voltage (VDC)		Current (mA)		Voltage (VDC)	Current (mA, Max)	Current (mA, Min)			
	Nominal	Range	Full-Load	No-Load						
A601ERWI	5	4.5 - 9.0	1,579	40	5.0	1,200	120	76	3,000	1,000
A602ERWI	5	4.5 - 9.0	1,500	40	12.0	500	50	80	3,000	470
A603ERWI	5	4.5 - 9.0	1,463	40	15.0	400	40	82	3,000	330
A604ERWI	5	4.5 - 9.0	1,445	40	24.0	250	25	83	3,000	220
A605ERWI	5	4.5 - 9.0	1,579	40	±5.0	±600	±60	76	3,000	±680
A606ERWI	5	4.5 - 9.0	1,500	40	±12.0	±250	±25	80	3,000	±330
A607ERWI	5	4.5 - 9.0	1,463	40	±15.0	±200	±20	82	3,000	±220
A611ERWI	12	9.0 - 18.0	641	30	5.0	1,200	120	78	1,500	1,000
A612ERWI	12	9.0 - 18.0	610	30	12.0	500	50	82	1,500	470
A613ERWI	12	9.0 - 18.0	595	30	15.0	400	40	84	1,500	330
A614ERWI	12	9.0 - 18.0	588	30	24.0	250	25	83	1,500	220
A615ERWI	12	9.0 - 18.0	641	30	±5.0	±600	±60	78	1,500	±680
A616ERWI	12	9.0 - 18.0	610	30	±12.0	±250	±25	82	1,500	±330
A617ERWI	12	9.0 - 18.0	595	30	±15.0	±200	±20	84	1,500	±220
A621ERWI	24	18.0 - 36.0	312	20	5.0	1,200	120	80	750	1,000
A622ERWI	24	18.0 - 36.0	298	20	12.0	500	50	84	750	470
A623ERWI	24	18.0 - 36.0	291	20	15.0	400	40	86	750	330
A624ERWI	24	18.0 - 36.0	294	20	24.0	250	25	85	750	220
A625ERWI	24	18.0 - 36.0	312	20	±5.0	±600	±60	80	750	±680
A626ERWI	24	18.0 - 36.0	298	20	±12.0	±250	±25	84	750	±330
A627ERWI	24	18.0 - 36.0	291	20	±15.0	±200	±20	86	750	±220
A631ERWI	48	36.0 - 72.0	156	10	5.0	1,200	120	80	500	1,000
A632ERWI	48	36.0 - 72.0	149	10	12.0	500	50	84	500	470
A633ERWI	48	36.0 - 72.0	145	10	15.0	400	40	86	500	330
A634ERWI	48	36.0 - 72.0	147	10	24.0	250	25	85	500	220
A635ERWI	48	36.0 - 72.0	156	10	±5.0	±600	±60	80	500	±680
A636ERWI	48	36.0 - 72.0	149	10	±12.0	±250	±25	84	500	±330
A637ERWI	48	36.0 - 72.0	145	10	±15.0	±200	±20	86	500	±220

Notes:

1. Output load regulation is specified for a load change of 10% to 100%.
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 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.

Vin	Input Capacitor	Vout	Output Capacitor
5 VDC	100 µF	5 VDC	10.0 µF/ 100 mA
12 VDC	100 µF	12 VDC	10.0 µF/ 100 mA
24 VDC	10 - 47 µF	15 VDC	10.0 µF/ 100 mA
48 VDC	10 - 47 µF	24 VDC	10.0 µF/ 100 mA

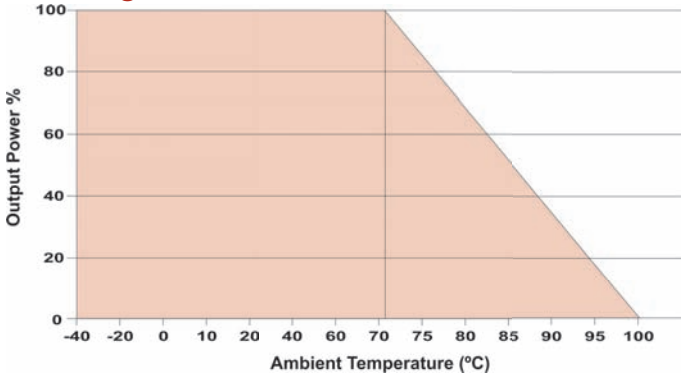
4. Dual output units may be connected to provide a 10V, 24V or 30 VDC output. To do this, connect the load across the positive (+Vout) and negative (-Vout) outputs and float the output common
5. It is recommended that a fuse be used on the input of a power supply for protection. See the Model Selection table above for the correct rating.

Pin Connections

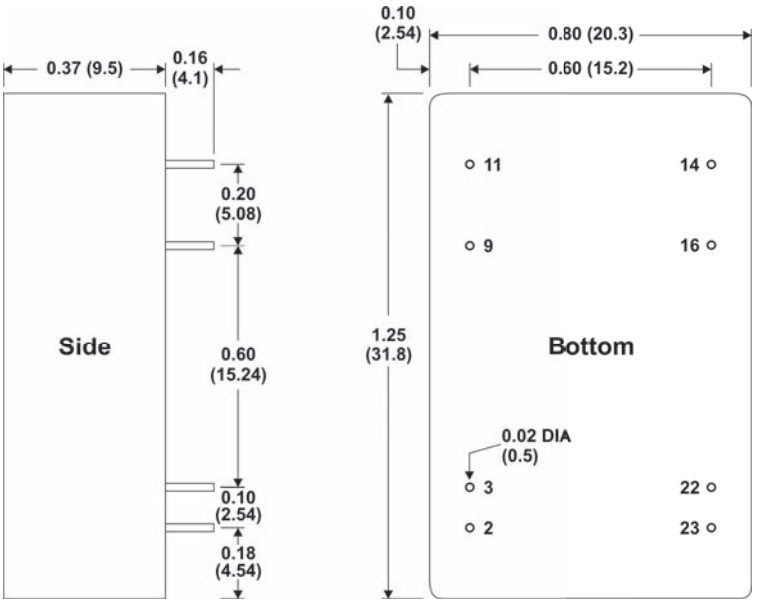
Pin	Single	Dual
2, 3	-Vin	-Vin
9	No Pin	Common
11	NC	-Vout
14	+Vout	+Vout
16	-Vout	Common
22, 23	+Vin	+Vin

NC: No Connection

Derating Curve



Mechanical Dimensions



Mechanical Notes:

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

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