



MicroPower Direct



5 - 6 Watts Wide Input Range
Single and Dual Output
DC/DC Converters
A500RW Series

Key Features

- 24 Pin DIP Compatible Case
- Up to 6W Output Power
- 2:1 Input Voltage Range
- 1500 VDC I/O Isolation
- High Efficiency to 86%
- Low Cost

Electrical Specifications

Specifications typical @ +25°C with nominal input voltage & rated output current, unless otherwise noted. Specifications subject to change without notice.

Input

Parameter	Nominal Input	Min.	Typ.	Max.	Units
Input Start Voltage	12 VDC Input Models	4.5	6.0	8.0	VDC
	24 VDC Input Models	8.0	12.0	16.0	
	48 VDC Input Models	16.0	24.0	32.0	
Input Filter	π Filter				
Reverse Polarity Input Current				1.0	A
Short Circuit Input Power	All Models		1000	1500	mW

Output

Parameter	Conditions	Min.	Typ.	Max.	Units
Output Voltage Accuracy			±0.5	±4.0	%
Output Voltage Balance	Dual Output, Balanced Load		±1.0	±3.0	%
Line Regulation	For V_{in} = Min to Max		±0.2	±0.5	%
Load Regulation	For I_{out} = 10% to 100%		±0.2	±0.5	%
Ripple & Noise (20 MHz)			40	50	mV Pk-Pk
Ripple & Noise (20 MHz)	Over Line, Load & Temp.			75	mV Pk-Pk
Ripple & Noise (20 MHz)				5	mV rms
Output Power Protection		120			%
Transient Recovery Time (Note 2)	25% Load Step Change		150	300	μSec
Transient Response Deviation	25% Load Change		2.0	6.0	%
Temperature Coefficient			±0.01	±0.02	%/°C
Output Short Circuit Protection	Continuous				

General

Parameter	Conditions	Min.	Typ.	Max.	Units
Isolation Voltage	60 Seconds	1500			VDC
Isolation Resistance	500 VDC	1000			MΩ
Isolation Capacitance	100 kHz, 1V		380	500	pF
Switching Frequency			300		kHz

Environmental

Parameter	Conditions	Min.	Typ.	Max.	Units
Operating Temperature		-25	+25	+71	°C
Storage Temperature		-40		+125	°C
Humidity				95	%
Cooling	Free Air Convection				

Physical Characteristics

Case Size	1.25 x 0.8 x 0.40 Inches (31.8 x 20.3 x 10.2 mm)
Case Material	Metal with Non-Conductive Base
Weight	0.49 Oz (14.0g)

Absolute Maximum Ratings

Parameter	Nominal Input	Min.	Typ.	Max.	Units
Input Voltage Surge (1Sec)	12 VDC Input Models	-0.7		25.0	VDC
	24 VDC Input Models	-0.7		50.0	
	48 VDC Input Models	-0.7		100.0	
Internal Power Dissipation	All Models			2500	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.
	Nominal Voltage (VDC)		Current (mA)		Reflected Ripple Current (mA, Typ.)	Voltage (VDC)	Current (mA, Max.)	
	Nominal	Range	Full-Load	No-Load				
A501RW	12	9 - 18	429.0	20.0	25.0	3.3	1200	77
A502RW	12	9 - 18	514.0	20.0	25.0	5.0	1000	81
A503RW	12	9 - 18	595.0	20.0	25.0	12.0	500	84
A504RW	12	9 - 18	595.0	20.0	25.0	15.0	400	84
A505RW	12	9 - 18	514.0	20.0	25.0	±5.0	±500	81
A506RW	12	9 - 18	595.0	20.0	25.0	±12.0	±250	84
A507RW	12	9 - 18	595.0	20.0	25.0	±15.0	±200	84
A511RW	24	18 - 36	209.0	5.0	15.0	3.3	1200	79
A512RW	24	18 - 36	251.0	5.0	15.0	5.0	1000	83
A513RW	24	18 - 36	291.0	5.0	15.0	12.0	500	86
A514RW	24	18 - 36	291.0	5.0	15.0	15.0	400	86
A515RW	24	18 - 36	251.0	5.0	15.0	±5.0	±500	83
A516RW	24	18 - 36	291.0	5.0	15.0	±12.0	±250	86
A517RW	24	18 - 36	291.0	5.0	15.0	±15.0	±200	86
A521RW	48	36 - 75	104.0	3.0	10.0	3.3	1200	79
A522RW	48	36 - 75	126.0	3.0	10.0	5.0	1000	83
A523RW	48	36 - 75	145.0	3.0	10.0	12.0	500	86
A524RW	48	36 - 75	145.0	3.0	10.0	15.0	400	86
A525RW	48	36 - 75	126.0	3.0	10.0	±5.0	±500	83
A526RW	48	36 - 75	145.0	3.0	10.0	±12.0	±250	86
A527RW	48	36 - 75	145.0	3.0	10.0	±15.0	±200	86

Note:

- For proper operation, a minimum output load of 10% must be maintained on each output.
- Transient Recovery Time is measured to within a 1% error band for an output load step change of 75% to 100%.

Input Voltage Range Vs Output Load

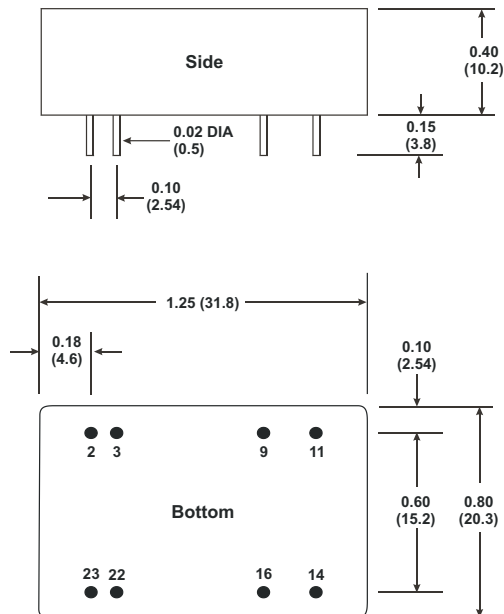
Nominal Input	Input Voltage Range vs Output Load @:				
	20% Load	40% Load	60% Load	80% Load	100% Load
12 VDC	8.0 - 22.0	8.2 - 21.0	8.4 - 20.0	8.6 - 19.0	9.0 - 18.0
24 VDC	16.4 - 44.0	16.4 - 42.0	16.8 - 40.0	17.2 - 38.0	18.0 - 36.0
48 VDC	32.0 - 88.0	32.8 - 84.0	33.6 - 80.0	34.4 - 76.0	36.0 - 72.0

Pin Connections

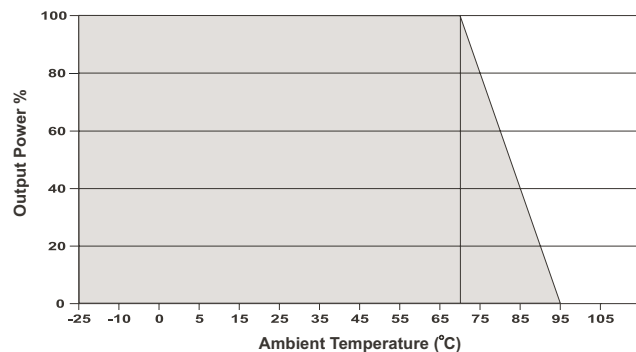
Pin	Single	Dual
2, 3	-V _{in}	-V _{in}
9	No Pin	Common
11	NC	-V _{out}
14	+V _{out}	+V _{out}
16	-V _{out}	Common
22,23	+V _{in}	+V _{in}

NC = No Connection

Mechanical Dimensions



Derating Curve



Note: All dimensions are typical in inches (mm).
Tolerance x.xx = ±0.01 (±0.25)
Pin 1 is marked by a "dot" or indentation on the top of the unit



**MicroPower
Direct**

171 Tosca Drive, Stoughton, MA 02072
Phone: (781) 344 - 8226 Fax: (781) 344 - 8481
Web: www.micropowerdirect.com
E-Mail: sales@micropowerdirect.com