

A1100RW Series

Miniature, 10W DIP Single & Dual Output DC/DC Converters



Electrical Specifications

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

Key Features:

- 10W Output Power
- Compact DIP Case
- 2:1 Input Voltage Range
- Single & Dual Outputs
- 1,500 VDC Isolation
- Meets EN55022 Class "A"
- 1.0 MH MTBF
- Industry Standard Pin-Out

Input

Parameter	Conditions	Min.	Typ.	Max.	Units
Input Start Voltage	12 VDC Input	7.0	8.0	9.0	VDC
	24 VDC Input	14.0	16.0	18.0	
	48 VDC Input	30.0	33.0	36.0	
Input Filter	π (Pi) Filter (Complies with EN55022 Class "A")				
Reverse Polarity Input Current				0.5	A
Short Circuit Input Power				2,500	mW

Output

Parameter	Conditions	Min.	Typ.	Max.	Units
Output Voltage Accuracy			±0.6	±1.2	%
Output Voltage Balance	Dual Output, Balanced Loads		±0.5	±1.0	%
Line Regulation	V _{in} = Min to Max		±0.3	±1.0	%
Load Regulation, 2.5 Vout Models	I _{out} = 10% to 100%		±0.7	±1.5	%
Load Regulation, All Other Models	I _{out} = 10% to 100%		±0.5	±1.2	%
Ripple & Noise (20 MHz) (Note 1)			50	85	mV P - P
Ripple & Noise (20 MHz)	Over Line, Load & Temp.			100	mV P - P
Ripple & Noise (20 MHz)				15	mV rms
Output Power Protection		110	150	180	%
Transient Recovery Time (Note 2)	25% Load Step Change		250	500	μSec
Transient Response Deviation			±3.0	±5.0	%
Temperature Coefficient			±0.01	±0.02	%/°C
Output Short Circuit	Continuous				

General

Parameter	Conditions	Min.	Typ.	Max.	Units
Isolation Voltage	60 Seconds	1,500			VDC
Isolation Voltage Test	Flash Tested for 1 Second	1,650			VDC
Isolation Resistance	500 VDC	1,000			MΩ
Isolation Capacitance	100 kHz, 1V		1,000	1,200	pF
Switching Frequency			400		kHz

Environmental

Parameter	Conditions	Min.	Typ.	Max.	Units
Operating Temperature Range	Ambient	-40	+25	+60	°C
Operating Temperature Range	Case	-40		+90	°C
Storage Temperature Range		-40		+125	°C
Cooling	Free Air Convection				
Humidity	RH, Non-condensing			95	%
Conducted EMI	EN55022 Class "A"				

Physical

Case Size	1.25 x 0.80 x 0.40 Inches (31.8 x 20.3 x 10.2 mm)
Case Material	Metal with Non-Conductive Base
Weight	0.61 Oz (17.3g)

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)	12 VDC Input	-0.7		25.0	VDC
	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.

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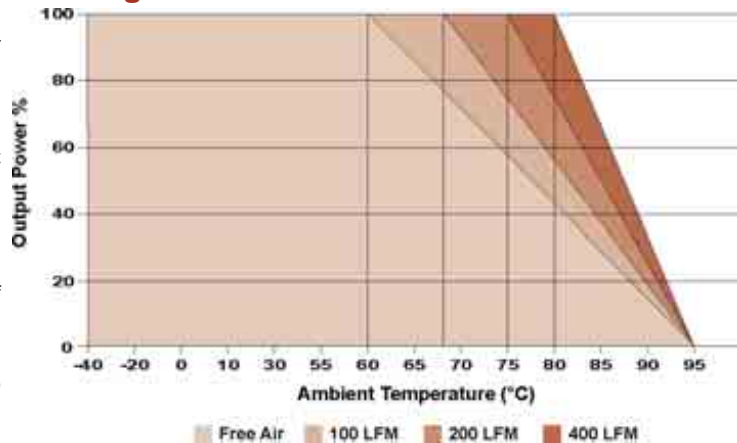
Model Selection Guide

Model Number	Input				Reflected Ripple Current (mA, Typ)	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						
A1102RW	12	9.0 - 18.0	1,006	40	60	3.3	3,000	300.0	82	2,000
A1103RW	12	9.0 - 18.0	1,004	40	60	5.0	2,000	200.0	83	2,000
A1104RW	12	9.0 - 18.0	957	40	60	12.0	833	83.0	87	2,000
A1105RW	12	9.0 - 18.0	968	40	60	15.0	666	66.6	86	2,000
A1106RW	12	9.0 - 18.0	957	40	60	±12.0	±416	±42.0	87	2,000
A1107RW	12	9.0 - 18.0	968	40	60	±15.0	±333	±33.0	86	2,000
A1111RW	24	18.0 - 36.0	377	20	40	2.5	3,000	300.0	83	1,000
A1112RW	24	18.0 - 36.0	485	20	40	3.3	3,000	300.0	85	1,000
A1113RW	24	18.0 - 36.0	479	20	40	5.0	2,000	200.0	87	1,000
A1114RW	24	18.0 - 36.0	479	20	40	12.0	833	83.0	87	1,000
A1115RW	24	18.0 - 36.0	478	20	40	15.0	666	66.6	87	1,000
A1116RW	24	18.0 - 36.0	473	20	40	±12.0	±416	±42.0	88	1,000
A1117RW	24	18.0 - 36.0	478	20	40	±15.0	±333	±33.0	87	1,000
A1121RW	48	36.0 - 75.0	188	10	40	2.5	3,000	300.0	83	500
A1122RW	48	36.0 - 75.0	243	10	40	3.3	3,000	300.0	85	500
A1123RW	48	36.0 - 75.0	239	10	40	5.0	2,000	200.0	87	500
A1124RW	48	36.0 - 75.0	240	10	40	12.0	833	83.0	87	500
A1125RW	48	36.0 - 75.0	239	10	40	15.0	666	66.6	87	500
A1126RW	48	36.0 - 75.0	236	10	40	±12.0	±416	±42.0	88	500
A1127RW	48	36.0 - 75.0	243	10	40	±15.0	±333	±33.0	87	500

Notes:

- 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.
- Transient recovery is measured to within a 1% error band for a load step change of 75% to 100%.
- Operation at no-load will not damage these units. However, they may not meet all specifications.
- Dual output units may be connected to provide a 24 VDC or 30 VDC output. To do this, connect the load across the positive (+Vout) and negative (-Vout) outputs and not the output common.
- 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 <1.0 Ω at 100 kHz) capacitor be mounted close to the converter. For 12V input units a 12 μF is recommended, for 24V input units, a 4.7 μF ; and for 48V units a 2.2 μF .
- Models with 5.1 VDC outputs are available. Please contact the factory for details.
- 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



Pin Connections

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

NC: No Connection

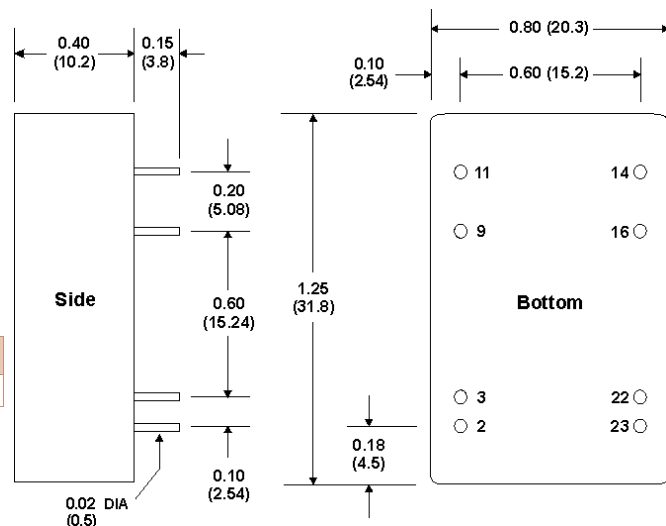
Capacitive Load

Output (VDC)	2.5	3.3	5.0	5.1	12	15	±12	±15
μF Max	2,200	2,200	2,200	2,200	820	470	±220	±150

Mechanical Notes:

- All dimensions are typical in inches (mm)
- Tolerance x.xx = ± 0.01 (± 0.25)
- Leads are tin plated for improved solderability.

Mechanical Dimensions



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