

A200RWT Series

-55°C to +125°C Temp Range Single Output, 2W DIP 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:

- 2W Output Power
- -55 °C to +125 °C Temp. Range
- 1,500 VDC Isolation
- 2:1 Input Range
- Compact DIP Case
- Single Regulated Output
- 1.0 MH MTBF
- 20 Standard Models
- Industry Standard Pin-Out



RoHS Compliant

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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	
	15 VDC Input	12.0	15.0	24.0	
	24 VDC Input	18.0	24.0	36.0	
	48 VDC Input	36.0	48.0	72.0	
Input Filter	π (Pi) Filter				
Reverse Polarity Input Current				0.5	A
Short Circuit Input Power				2,000	mW

Output

Parameter	Conditions	Min.	Typ.	Max.	Units
Output Voltage Accuracy			±1.0	±3.0	%
Line Regulation	Vin = Min to Max		±0.2	±0.5	%
Load Regulation	Iout = 10% to 100%		±0.5	±0.75	%
Ripple & Noise (20 MHz) (Note 1)			80	150	mV P - P
Output Power Protection		120			%
Temperature Coefficient				±0.03	%/°C
Output Short Circuit	Continuous				

General

Parameter	Conditions	Min.	Typ.	Max.	Units
Isolation Voltage		1,500			VDC
Isolation Resistance	500 VDC	1,000			MΩ
Isolation Capacitance	100 kHz, 1V		20	30	pF
Switching Frequency		80		200	kHz

Environmental

Parameter	Conditions	Min.	Typ.	Max.	Units
Operating Temperature Range		-55		+125	°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 9.45 mm)				
Case Material	Metal (UL94-V0)				
Weight	0.42 Oz (12g)				

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	
	15 VDC Input	-0.7		30.0	
	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
Internal Power Dissipation	All Models			3,000	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)		Voltage (VDC)	Current (mA, Max)	Current (mA, Min)		
	Nominal	Range	Full-Load	No-Load					
A201RWT	5	4.5 - 9.0	597	80	5.0	400	40	67	1,000
A202RWT	5	4.5 - 9.0	579	80	9.0	220	22	69	1,000
A203RWT	5	4.5 - 9.0	555	80	12.0	165	16	72	1,000
A204RWT	5	4.5 - 9.0	533	80	15.0	133	14	75	1,000
A211RWT	12	9.0 - 18.0	222	50	5.0	400	40	75	500
A212RWT	12	9.0 - 18.0	222	50	9.0	220	22	75	500
A213RWT	12	9.0 - 18.0	216	50	12.0	165	16	77	500
A214RWT	12	9.0 - 18.0	208	50	15.0	133	14	80	500
A221RWT	15	12.0 - 24.0	177	40	5.0	400	40	75	500
A222RWT	15	12.0 - 24.0	169	40	9.0	220	22	79	500
A223RWT	15	12.0 - 24.0	166	40	12.0	165	16	80	500
A224RWT	15	12.0 - 24.0	165	40	15.0	133	14	81	500
A231RWT	24	18.0 - 36.0	107	30	5.0	400	40	78	250
A232RWT	24	18.0 - 36.0	104	30	9.0	220	22	80	250
A233RWT	24	18.0 - 36.0	100	30	12.0	165	16	83	250
A234RWT	24	18.0 - 36.0	98	30	15.0	133	14	85	250
A241RWT	48	36.0 - 72.0	55	25	5.0	400	40	76	125
A242RWT	48	36.0 - 72.0	51	25	9.0	220	22	81	125
A243RWT	48	36.0 - 72.0	51	25	12.0	165	16	82	125
A244RWT	48	36.0 - 72.0	50	25	15.0	133	14	83	125

Notes:

- Output load regulation is specified for a load change of 10% to 100%.
- 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.
- These units should not be operated with a load under the specified minimum. Operation at no-load may cause damage to the unit.
- 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	Input Capacitor	Vout	Output Capacitor
5 VDC	100 μF	5 VDC	100 μF
12 VDC	100 μF	9 VDC	
15 VDC	100 μF	12 VDC	
24 VDC	10 μF	15 VDC	
48 VDC	10 μF		

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

- 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

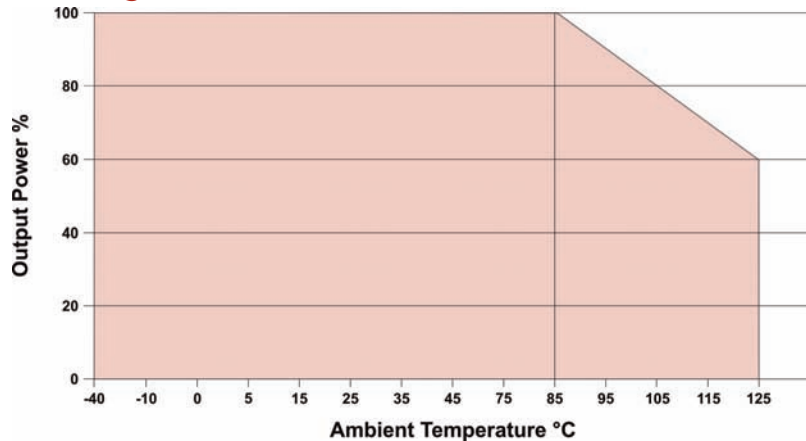
Pin	Function	Pin	Function
2	-Vin	14	+Vout
3	-Vin	15	NC
9	NC	16	-Vout
10	NC	22	+Vin
11	NC	23	+Vin

Note: NC = No Connection

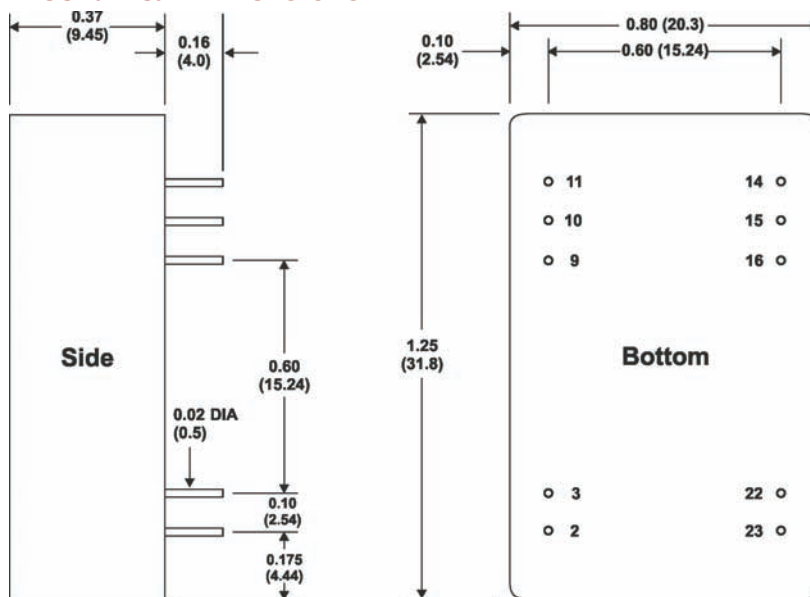
Mechanical Notes:

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

Derating Curve



Mechanical Dimensions



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