

## **Series AM1S-Z**

## 1 Watt | DC-DC Converter



#### **FEATURES:**

- · RoHS compliant
- 4 Pin SIP Package
- Low ripple and noise
- High efficiency up to 78%
- Operating temperature -40°C to + 85°C
- Input / Output isolation 1000 and 3000VDC
   Pin compatible with multiple manufacturers



# Models Single output

Model	Input – Voltage (V)	Output Voltage (V)	Output Current max (mA)	Isolation (VDC)	Max Capacitve Load (μF)	Efficiency (%)
AM1S-0503SZ	4.5-5.5	3.3	300	1000	220	72
AM1S-0505SZ	4.5-5.5	5	200	1000	220	75
AM1S-0507SZ	4.5-5.5	7.2	140	1000	220	76
AM1S-0509SZ	4.5-5.5	9	110	1000	220	77
AM1S-0512SZ	4.5-5.5	12	83	1000	220	78
AM1S-0515SZ	4.5-5.5	15	67	1000	220	78
AM1S-0518SZ	4.5-5.5	18	56	1000	220	78
AM1S-0524SZ	4.5-5.5	24	42	1000	220	78
AM1S-1203SZ	10.8-13.2	3.3	300	1000	220	72
AM1S-1205SZ	10.8-13.2	5	200	1000	220	75
AM1S-1207SZ	10.8-13.2	7.2	140	1000	220	76
AM1S-1209SZ	10.8-13.2	9	110	1000	220	77
AM1S-1212SZ	10.8-13.2	12	83	1000	220	78
AM1S-1215SZ	10.8-13.2	15	67	1000	220	78
AM1S-1218SZ	10.8-13.2	18	56	1000	220	78
AM1S-1224SZ	10.8-13.2	24	42	1000	220	78
AM1S-2403SZ	21.6-26.4	3.3	300	1000	220	72
AM1S-2405SZ	21.6-26.4	5	200	1000	220	75
AM1S-2407SZ	21.6-26.4	7.2	140	1000	220	76
AM1S-2409SZ	21.6-26.4	9	110	1000	220	77
AM1S-2412SZ	21.6-26.4	12	83	1000	220	78
AM1S-2415SZ	21.6-26.4	15	67	1000	220	78
AM1S-2418SZ	21.6-26.4	18	56	1000	220	78
AM1S-2424SZ	21.6-26.4	24	42	1000	220	78
AM1S-4803SZ	43.2-52.8	3.3	300	1000	220	72
AM1S-4805SZ	43.2-52.8	5	200	1000	220	75
AM1S-4807SZ	43.2-52.8	7.2	140	1000	220	76
AM1S-4809SZ	43.2-52.8	9	110	1000	220	77
AM1S-4812SZ	43.2-52.8	12	83	1000	220	78
AM1S-4815SZ	43.2-52.8	15	67	1000	220	78
AM1S-4818SZ	43.2-52.8	18	56	1000	220	78
AM1S-4824SZ	43.2-52.8	24	42	1000	220	78
	43.2-32.0	24	42	1000	220	70
AM1S-0503SH30Z	4.5-5.5	3.3	300	3000	220	72
AM1S-0505SH30Z	4.5-5.5	5	200	3000	220	75
AM1S-0507SH30Z	4.5-5.5	7.2	140	3000	220	76
AM1S-0509SH30Z	4.5-5.5	9	110	3000	220	77
AM1S-0512SH30Z	4.5-5.5	12	83	3000	220	78
AM1S-0515SH30Z	4.5-5.5	15	67	3000	220	78
AM1S-0518SH30Z	4.5-5.5	18	56	3000	220	78
AM1S-0524SH30Z	4.5-5.5	24	42	3000	220	78
M1S-1203SH30Z	10.8-13.2	3.3	300	3000	220	72
M1S-1205SH30Z	10.8-13.2	5	200	3000	220	75
AM1S-1207SH30Z	10.8-13.2	7.2	140	3000	220	76
M1S-1209SH30Z	10.8-13.2	9	110	3000	220	77
AM1S-1212SH30Z	10.8-13.2	12	83	3000	220	78
AM1S-1215SH30Z	10.8-13.2	15	67	3000	220	78
AM1S-1218SH30Z	10.8-13.2	18	56	3000	220	78
AM1S-1224SH30Z	10.8-13.2	24	42	3000	220	78





Models

Single output (continued)

Model	Input – Voltage (V)	Output Voltage (V)	Output Current max (mA)	Isolation (VDC)	Max Capacitve Load (μF)	Efficiency (%)
AM1S-2403SH30Z	21.6-26.4	3.3	300	3000	220	72
AM1S-2405SH30Z	21.6-26.4	5	200	3000	220	75
AM1S-2407SH30Z	21.6-26.4	7.2	140	3000	220	76
AM1S-2409SH30Z	21.6-26.4	9	110	3000	220	77
AM1S-2412SH30Z	21.6-26.4	12	83	3000	220	78
AM1S-2415SH30Z	21.6-26.4	15	67	3000	220	78
AM1S-2418SH30Z	21.6-26.4	18	56	3000	220	78
AM1S-2424SH30Z	21.6-26.4	24	42	3000	220	78
AM1S-4803SH30Z	43.2-52.8	3.3	300	3000	220	72
AM1S-4805SH30Z	43.2-52.8	5	200	3000	220	75
AM1S-4807SH30Z	43.2-52.8	7.2	140	3000	220	76
AM1S-4809SH30Z	43.2-52.8	9	110	3000	220	77
AM1S-4812SH30Z	43.2-52.8	12	83	3000	220	78
AM1S-4815SH30Z	43.2-52.8	15	67	3000	220	78
AM1S-4818SH30Z	43.2-52.8	18	56	3000	220	78
AM1S-4824SH30Z	43.2-52.8	24	42	3000	220	78

Input Specifications

Parameters	Nominal	Typical	Maximum	Units
Voltage range	5 12 24 48	4.5-5.5 10.8-13.2 21.6-26.4 43.2-52.8		VDC
Filter		Capacitor		
Turn on Transient process time			25	ms
Start up time		200		ms
Absolute Maximum Rating	5 Vin 12 Vin 24 Vin 48 Vin	0-7 0-15 0-28 0-54		VDC
Peak Input Voltage time		100		ms

**Isolation Specifications** 

Parameters	Conditions	Typical	Rated	Units
Tested I/O voltage	3 sec		1000 and 3000	VDC
Resistance		> 1000		MOhm
Capacitance		60		pF

**Output Specifications** 

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy		±3		%
Short Circuit protection		Momentary (1	sec)	
Line voltage regulation (Single)	For 1% change of Vin	±1.2		% of Vin
Load voltage regulation (Single)	Load 20 - 100%	±10		%
Load voltage regulation (Single) 3.3V output model	Load 20 - 100%	±20		%
Temperature coefficient		±0.02		%/°C
Ripple & Noise	At 20MHz Bandwidth	100		mV p-p
Capacitive load			220	μF
Rising time		50		ms



### 1 Watt | DC-DC Converter

**General Specifications** 

Parameters	Conditions	Typical	Maximum	Units
Switching frequency	100% load	80		KHz
Operating temperature	Full Load without Derating	-40 to +8	35	°C
Storage temperature		-55 to +1	25	°C
Max Case temperature			100	°C
Cooling	Free air convection			
Humidity			95	%
Case material		Non-conductive black	plastic UL94-VO	
Weight		1.8		g
Dimensions (L x W x H)	0.46 x 0.24 x 0.38 inches 11.68 x 6.00 x 9.65 mm			
MTBF	>1 191 000 hrs (MIL-HDBK -217F, Ground Benign, t=+25°C)			

NOTE: All specifications are measured at an ambient temperature of 25°C, humidity<75%, nominal input voltage and at rated output load unless otherwise specified.

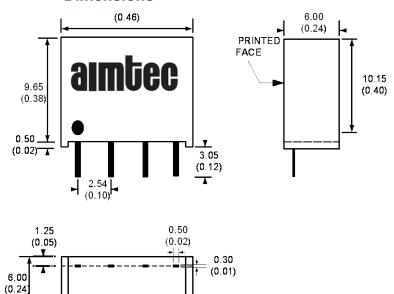
**Safety Specifications** 

Standards	
Agency approvals	CE
Safety	EN55022 (Radiated Emissions) class B
	EN55024 (Noise Immunity), IEC61000-4-2(ESD)
	IEC61000-4-3(Radiated immunity)

### **Pin Out Specifications**

Pin	Single		
1	- V Input		
2	+V Input		
3	- V Output		
4	+V Output		

### **Dimensions**



NOTE: 1. Datasheets are updated as needed and as such, specifications are subject to change without notice. Once printed or downloaded, datasheets are no longer controlled by Aimtec; refer to www.aimtec.com for the most current product specifications. 2. Product labels shown, including safety agency certifications on labels, may vary based on the date manufactured. 3. Mechanical drawings and specifications are for reference only. 4. All specifications are measured at an ambient temperature of 25°C, humidity<75%, nominal input voltage and at rated output load unless otherwise specified. 5. Aimtec may not have conducted destructive testing or chemical analysis on all internal components and chemicals at the time of publishing this document. CAS numbers and other limited information are considered proprietary and may not be available for release. 6. This product is not designed for use in critical life support systems, equipment used in hazardous environments, nuclear control systems or other such applications which necessitate specific safety and regulatory standards other the ones listed in this datasheet. 7. Warranty is in accordance with Aimtec's standard Terms of Sale available at www.aimtec.com.

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