

## Series AM2S-Z

### 2 Watt | DC-DC Converter



#### FEATURES:

- RoHS Compliant
- 4 Pin SIP Package
- Ultra Miniature Package
- High Efficiency up to 84%
- 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)	Capacitive Load, Max (µF)	Input Current Full   No Load (mA)	Isolation (VDC)	Efficiency (%)
AM2S-0503SZ	4.5-5.5	3.3	400	470	487 35	1000	78
AM2S-0505SZ	4.5-5.5	5	400	470	487 35	1000	81
AM2S-0507SZ	4.5-5.5	7.2	278	470	152 35	1000	80
AM2S-0509SZ	4.5-5.5	9	222	470	213 35	1000	83
AM2S-0512SZ	4.5-5.5	12	167	470	208 35	1000	84
AM2S-0515SZ	4.5-5.5	15	133	470	203 35	1000	85
AM2S-0518SZ	4.5-5.5	18	111	470	198 35	1000	80
AM2S-0524SZ	4.5-5.5	24	83	470	198 35	1000	86
AM2S-1203SZ	10.8-13.2	3.3	400	470	198 20	1000	72
AM2S-1205SZ	10.8-13.2	5	400	470	203 20	1000	81
AM2S-1207SZ	10.8-13.2	7.2	278	470	120 20	1000	80
AM2S-1209SZ	10.8-13.2	9	222	470	170 20	1000	85
AM2S-1212SZ	10.8-13.2	12	167	470	166 20	1000	85
AM2S-1215SZ	10.8-13.2	15	133	470	162 20	1000	85
AM2S-1218SZ	10.8-13.2	18	111	470	158 20	1000	84
AM2S-1224SZ	10.8-13.2	24	83	470	158 25	1000	85
AM2S-2403SZ	21.6-26.4	3.3	400	470	158 18	1000	81
AM2S-2405SZ	21.6-26.4	5	400	470	162 18	1000	83
AM2S-2407SZ	21.6-26.4	7.2	278	470	74 18	1000	82
AM2S-2409SZ	21.6-26.4	9	222	470	104 18	1000	85
AM2S-2412SZ	21.6-26.4	12	167	470	104 18	1000	86
AM2S-2415SZ	21.6-26.4	15	133	470	99 18	1000	86
AM2S-2418SZ	21.6-26.4	18	111	470	99 18	1000	83
AM2S-2424SZ	21.6-26.4	24	83	470	99 18	1000	88
AM2S-4803SZ	43.2-52.8	3.3	400	470	99 10	1000	74
AM2S-4805SZ	43.2-52.8	5	400	470	99 10	1000	79
AM2S-4807SZ	43.2-52.8	7.2	278	470	38 10	1000	83
AM2S-4809SZ	43.2-52.8	9	222	470	53 10	1000	83
AM2S-4812SZ	43.2-52.8	12	167	470	52 10	1000	81
AM2S-4815SZ	43.2-52.8	15	133	470	51 10	1000	82
AM2S-4818SZ	43.2-52.8	18	111	470	52 10	1000	82
AM2S-4824SZ	43.2-52.8	24	83	470	51 10	1000	86
AM2S-0503SH30Z	4.5-5.5	3.3	400	470	487 35	3000	78
AM2S-0505SH30Z	4.5-5.5	5	400	470	487 35	3000	81
AM2S-0507SH30Z	4.5-5.5	7.2	278	470	152 35	3000	80
AM2S-0509SH30Z	4.5-5.5	9	222	470	213 35	3000	83
AM2S-0512SH30Z	4.5-5.5	12	167	470	208 35	3000	84
AM2S-0515SH30Z	4.5-5.5	15	133	470	203 35	3000	85
AM2S-0518SH30Z	4.5-5.5	18	111	470	198 35	3000	80
AM2S-0524SH30Z	4.5-5.5	24	83	470	198 35	3000	86
AM2S-1203SH30Z	10.8-13.2	3.3	400	470	198 20	3000	72
AM2S-1205SH30Z	10.8-13.2	5	400	470	203 20	3000	81
AM2S-1207SH30Z	10.8-13.2	7.2	278	470	120 20	3000	80
AM2S-1209SH30Z	10.8-13.2	9	222	470	170 20	3000	85
AM2S-1212SH30Z	10.8-13.2	12	167	470	166 20	3000	85

**Models**  
**Single Output (continued)**

Model	Input Voltage (V)	Output Voltage (V)	Output Current Max (mA)	Capacitive Load, Max (µF)	Input Current Full   No Load (mA)	Isolation (VDC)	Efficiency (%)
AM2S-1215SH30Z	10.8-13.2	15	133	470	162 20	3000	85
AM2S-1218SH30Z	10.8-13.2	18	111	470	158 20	3000	84
AM2S-1224SH30Z	10.8-13.2	24	83	470	158 25	3000	85
AM2S-2403SH30Z	21.6-26.4	3.3	400	470	158 18	3000	81
AM2S-2405SH30Z	21.6-26.4	5	400	470	162 18	3000	83
AM2S-2407SH30Z	21.6-26.4	7.2	278	470	74 18	3000	82
AM2S-2409SH30Z	21.6-26.4	9	222	470	104 18	3000	85
AM2S-2412SH30Z	21.6-26.4	12	167	470	104 18	3000	86
AM2S-2415SH30Z	21.6-26.4	15	133	470	99 18	3000	86
AM2S-2418SH30Z	21.6-26.4	18	111	470	99 18	3000	83
AM2S-2424SH30Z	21.6-26.4	24	83	470	99 18	3000	88
AM2S-4803SH30Z	43.2-52.8	3.3	400	470	99 10	3000	74
AM2S-4805SH30Z	43.2-52.8	5	400	470	99 10	3000	79
AM2S-4807SH30Z	43.2-52.8	7.2	278	470	38 10	3000	83
AM2S-4809SH30Z	43.2-52.8	9	222	470	53 10	3000	83
AM2S-4812SH30Z	43.2-52.8	12	167	470	52 10	3000	81
AM2S-4815SH30Z	43.2-52.8	15	133	470	51 10	3000	82
AM2S-4818SH30Z	43.2-52.8	18	111	470	52 10	3000	82
AM2S-4824SH30Z	43.2-52.8	24	83	470	51 10	3000	86

**Input Specifications**

Parameters	Nominal	Typical	Maximum	Units
Voltage range	5	4.5-5.5	-0.7 - 7	VDC
	12	10.8-13.2	-0.7 - 15	
	24	21.6-25.4	-0.7 - 28	
	48	43.2-52.8	-0.7 - 54	
Filter	Capacitor			
Turn on Transient Process Time			25	ms
Start-up time		200		ms
Absolute Maximum Rating	5 Vin	0-7		VDC
	12 Vin	0-15		
	24 Vin	0-28		
	48 Vin	0-54		
Peak Input Voltage time		100		ms

**Isolation Specifications**

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

**Output Specifications**

Parameters	Conditions	Typical	Maximum	Units
Voltage Accuracy		±3		%
Short Circuit Protection		Momentary (1sec)		
Over Current Protection		110% Iout max		
Line Voltage Regulation	For 1.0% of Vin	±1.2		%
Load Voltage Regulation	20...100% load	±10		%
Load Voltage Regulation (3.3V Output Models)	20...100% load	±20		%
Temperature Coefficient		±0.02		%/°C
Ripple & Noise	At 20MHz Bandwidth	150		mV p-p
Rising Time		100		ms

**General Specifications**

Parameters	Conditions	Typical	Maximum	Units
Switching Frequency	100% load	70		KHz

Operating Temperature	-40 to +85	°C
Storage Temperature	-40 to +125	°C
Max Case Temperature	100	°C
Cooling	Free air convection	
Humidity	95	%
Case material	Plastic UL94-VO	
Weight	1.9	g
Dimensions(L x W x H)	0.46 x 0.29 x 0.40 inches	11.68 x 7.50 x 10.15 mm
MTBF	>1121 000hrs(MIL-HDBK -217F, Ground Benign, t=+25°C)	

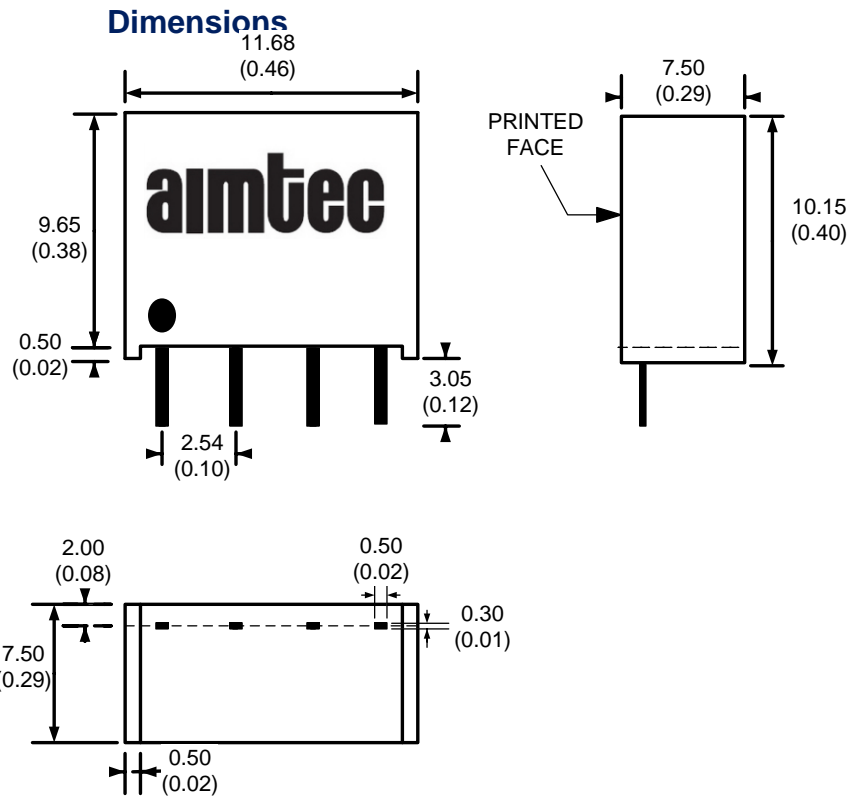
NOTE: All specifications in this datasheet are measured at an ambient temperature of 25°C, humidity<75%, nominal input voltage and at rated output load unless otherwise specified.

## Safety Specifications

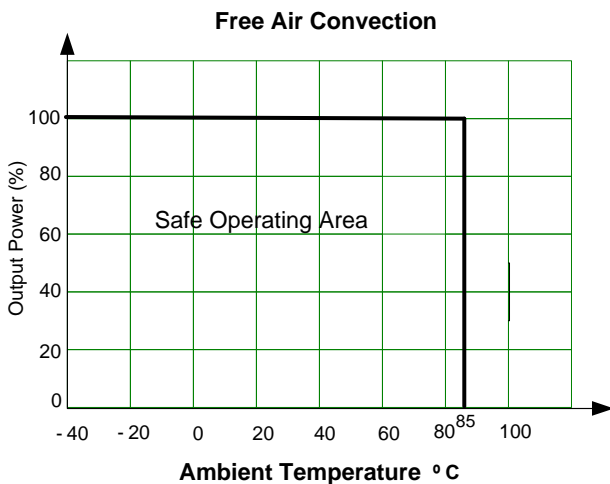
Parameters	
Agency Approval	CE
Standards	EN55032 (Radiated Emissions) class B
	EN55024 (Noise Immunity)
	IEC61000-4-2(ESD)
	IEC61000-4-3(Radiated immunity)

## Pin Out Specifications

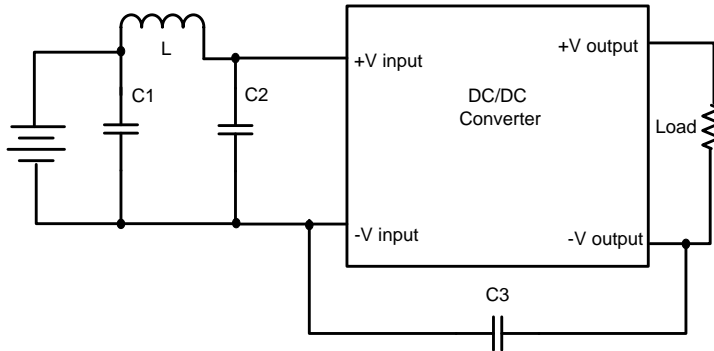
Pin	1000 and 3000VDC
1	-V Input
2	+V Input
3	-V Output
4	+V Output



## Derating

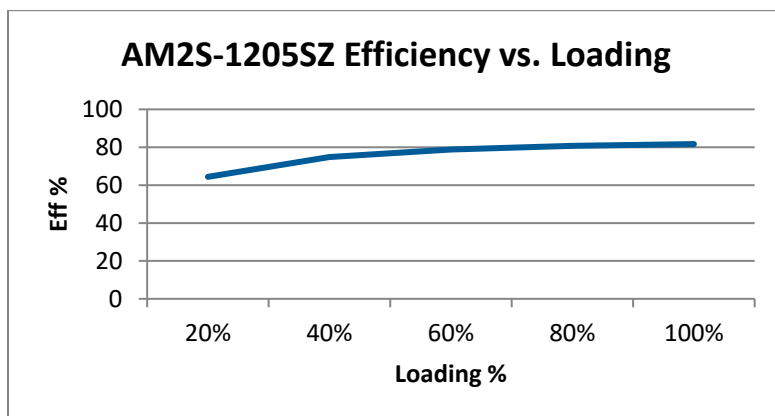
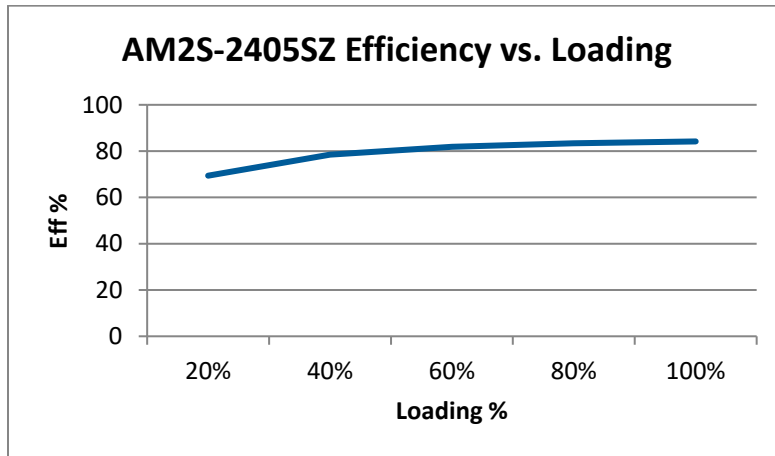


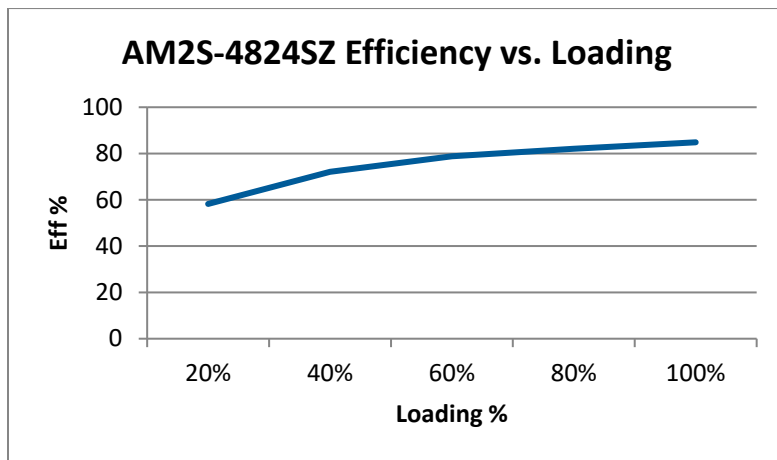
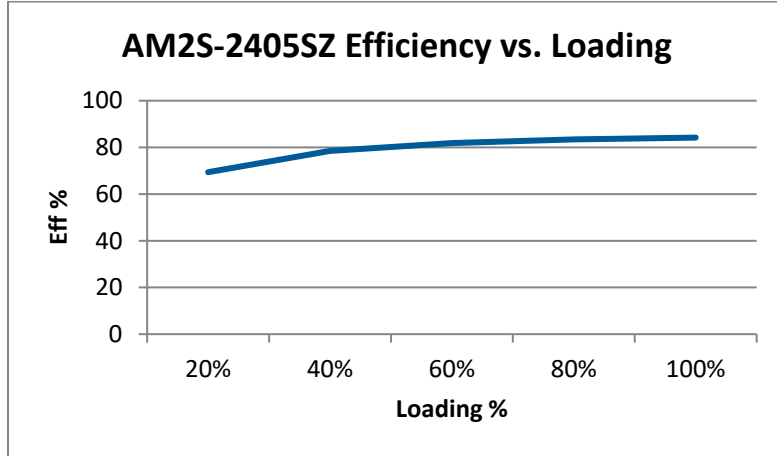
**Application Circuit, & Conducted Emissions**



Input Voltage (VDC)	C1	L	C2	C3
5	2.2uF/100V	18uH	N/A	N/A
12	2.2uF/100V	18uH	N/A	N/A
15	2.2uF/100V	18uH	N/A	N/A
24	2.2uF/100V	18uH	2.2uF/100V	470pF/2KV
48	2.2uF/100V	18uH	2.2uF/100V	470pF/2KV

**Typical Efficiency Example Charts**





**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](http://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 than the ones listed in this datasheet. **7.** Warranty is in accordance with Aimtec's standard Terms of Sale available at [www.aimtec.com](http://www.aimtec.com).