

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 (mA)		Isolation (VDC)	Efficiency (%)
					Full Load typ.	No Load max.		
AM2S-0503SZ	4.5-5.5	3.3	400	470	338	32	1000	78
AM2S-0505SZ	4.5-5.5	5	400	470	494	30	1000	81
AM2S-0507SZ	4.5-5.5	7.2	278	470	500	40	1000	80
AM2S-0509SZ	4.5-5.5	9	222	470	482	30	1000	83
AM2S-0512SZ	4.5-5.5	12	167	470	476	38	1000	84
AM2S-0515SZ	4.5-5.5	15	133	470	471	35	1000	85
AM2S-0518SZ	4.5-5.5	18	111	470	500	28	1000	80
AM2S-0524SZ	4.5-5.5	24	83	470	465	35	1000	86
AM2S-1203SZ	10.8-13.2	3.3	400	470	152	20	1000	72
AM2S-1205SZ	10.8-13.2	5	400	470	206	25	1000	81
AM2S-1207SZ	10.8-13.2	7.2	278	470	208	20	1000	80
AM2S-1209SZ	10.8-13.2	9	222	470	200	23	1000	83
AM2S-1212SZ	10.8-13.2	12	167	470	196	20	1000	85
AM2S-1215SZ	10.8-13.2	15	133	470	196	20	1000	85
AM2S-1218SZ	10.8-13.2	18	111	470	198	18	1000	84
AM2S-1224SZ	10.8-13.2	24	83	470	196	30	1000	85
AM2S-2403SZ	21.6-26.4	3.3	400	470	68	7	1000	81
AM2S-2405SZ	21.6-26.4	5	400	470	100	9	1000	83
AM2S-2407SZ	21.6-26.4	7.2	278	470	102	12	1000	82
AM2S-2409SZ	21.6-26.4	9	222	470	98	10	1000	85
AM2S-2412SZ	21.6-26.4	12	167	470	97	12	1000	86
AM2S-2415SZ	21.6-26.4	15	133	470	98	8	1000	86
AM2S-2418SZ	21.6-26.4	18	111	470	100	12	1000	83
AM2S-2424SZ	21.6-26.4	24	83	470	95	10	1000	88
AM2S-4803SZ	43.2-52.8	3.3	400	470	37	10	1000	74
AM2S-4805SZ	43.2-52.8	5	400	470	53	5	1000	79
AM2S-4807SZ	43.2-52.8	7.2	278	470	50	8	1000	83
AM2S-4809SZ	43.2-52.8	9	222	470	50	5	1000	83
AM2S-4812SZ	43.2-52.8	12	167	470	51	5	1000	81
AM2S-4815SZ	43.2-52.8	15	133	470	51	7	1000	82
AM2S-4818SZ	43.2-52.8	18	111	470	51	7	1000	82
AM2S-4824SZ	43.2-52.8	24	83	470	48	6	1000	86
AM2S-0503SH30Z	4.5-5.5	3.3	400	470	338	32	3000	78
AM2S-0505SH30Z	4.5-5.5	5	400	470	494	30	3000	81
AM2S-0507SH30Z	4.5-5.5	7.2	278	470	500	40	3000	80
AM2S-0509SH30Z	4.5-5.5	9	222	470	482	30	3000	83
AM2S-0512SH30Z	4.5-5.5	12	167	470	476	38	3000	84
AM2S-0515SH30Z	4.5-5.5	15	133	470	471	35	3000	85
AM2S-0518SH30Z	4.5-5.5	18	111	470	500	28	3000	80
AM2S-0524SH30Z	4.5-5.5	24	83	470	465	35	3000	86
AM2S-1203SH30Z	10.8-13.2	3.3	400	470	152	20	3000	72
AM2S-1205SH30Z	10.8-13.2	5	400	470	206	25	3000	81
AM2S-1207SH30Z	10.8-13.2	7.2	278	470	208	20	3000	80
AM2S-1209SH30Z	10.8-13.2	9	222	470	200	23	3000	83
AM2S-1212SH30Z	10.8-13.2	12	167	470	196	20	3000	85

Models
Single Output (continued)

Model	Input Voltage (V)	Output Voltage (V)	Output Current Max (mA)	Capacitive Load, Max (µF)	Input Current (mA)		Isolation (VDC)	Efficiency (%)
					Full Load typ.	No Load max.		
AM2S-1215SH30Z	10.8-13.2	15	133	470	196	20	3000	85
AM2S-1218SH30Z	10.8-13.2	18	111	470	198	18	3000	84
AM2S-1224SH30Z	10.8-13.2	24	83	470	196	30	3000	85
AM2S-2403SH30Z	21.6-26.4	3.3	400	470	68	7	3000	81
AM2S-2405SH30Z	21.6-26.4	5	400	470	100	9	3000	83
AM2S-2407SH30Z	21.6-26.4	7.2	278	470	102	12	3000	82
AM2S-2409SH30Z	21.6-26.4	9	222	470	98	10	3000	85
AM2S-2412SH30Z	21.6-26.4	12	167	470	97	12	3000	86
AM2S-2415SH30Z	21.6-26.4	15	133	470	97	8	3000	86
AM2S-2418SH30Z	21.6-26.4	18	111	470	100	12	3000	83
AM2S-2424SH30Z	21.6-26.4	24	83	470	95	10	3000	88
AM2S-4803SH30Z	43.2-52.8	3.3	400	470	37	10	3000	74
AM2S-4805SH30Z	43.2-52.8	5	400	470	53	5	3000	79
AM2S-4807SH30Z	43.2-52.8	7.2	278	470	50	8	3000	83
AM2S-4809SH30Z	43.2-52.8	9	222	470	50	5	3000	83
AM2S-4812SH30Z	43.2-52.8	12	167	470	51	5	3000	81
AM2S-4815SH30Z	43.2-52.8	15	133	470	51	7	3000	82
AM2S-4818SH30Z	43.2-52.8	18	111	470	51	7	3000	82
AM2S-4824SH30Z	43.2-52.8	24	83	470	48	6	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	VDC
	24	21.6-25.4	-0.7 - 28	VDC
	48	43.2-52.8	-0.7 - 54	VDC
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		VDC
	24 Vin	0-28		VDC
	48 Vin	0-54		VDC
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	20...100% load (3.3V Output Models)	±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.

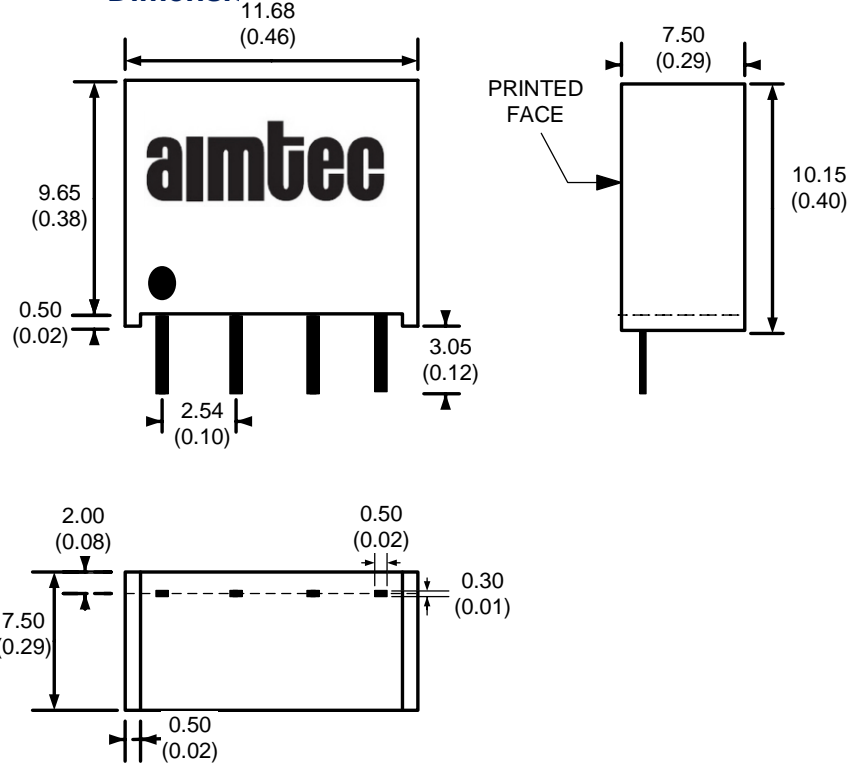
Safety Specifications

Parameters		
Agency Approval	CE	
Standards	EN55032 (Radiated Emissions) class B	
	EN55032 (Conducted Emissions) class B (with the Application Circuit)	
	Electrostatic Discharge Immunity	IEC 61000-4-2 Criteria A
	RF, Electromagnetic Field Immunity	IEC 61000-4-3 Criteria A
	Electrical Fast Transient/Burst Immunity	IEC 61000-4-4 Criteria A (with a 470µF/100V filter capacitor)
	Surge Immunity	IEC 61000-4-5 Criteria A (with a 470µF/100V filter capacitor)
	RF, Conducted Disturbance Immunity	IEC 61000-4-6 Criteria A
Power frequency Magnetic Field Immunity	IEC 61000-4-8 Criteria A	

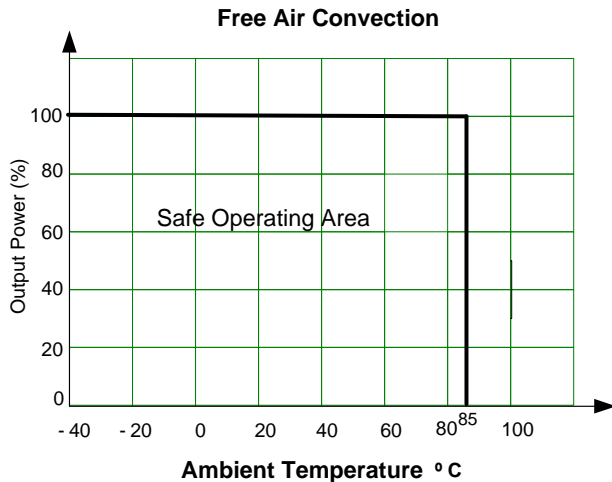
Pin Out Specifications

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

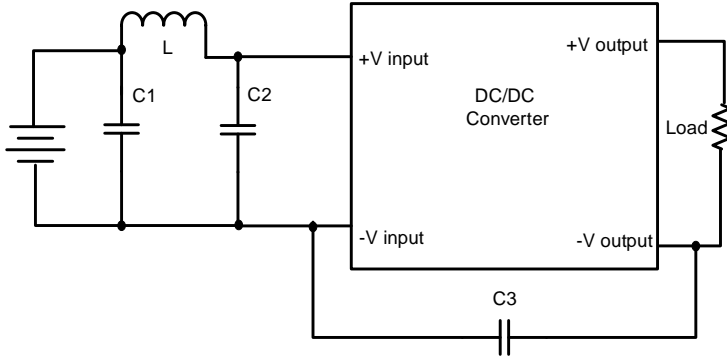
Dimensions



Derating

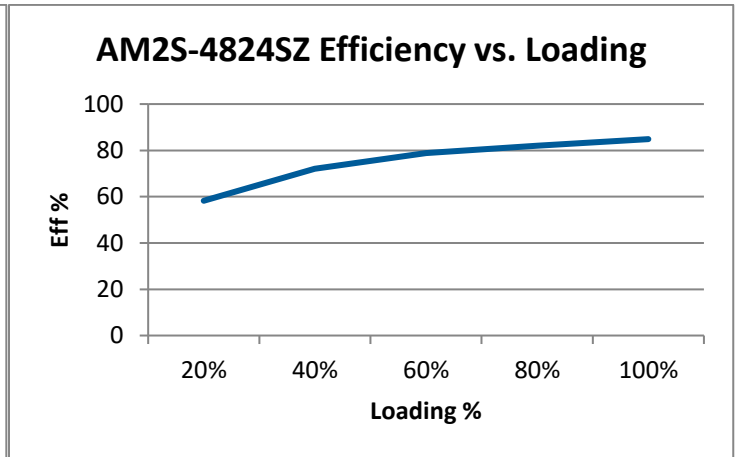
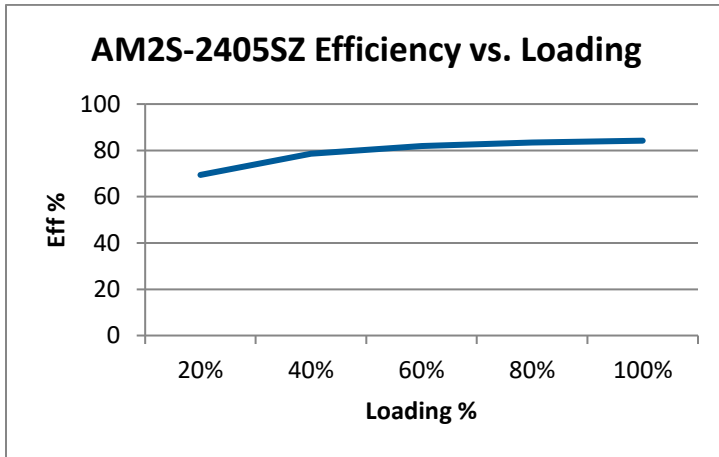
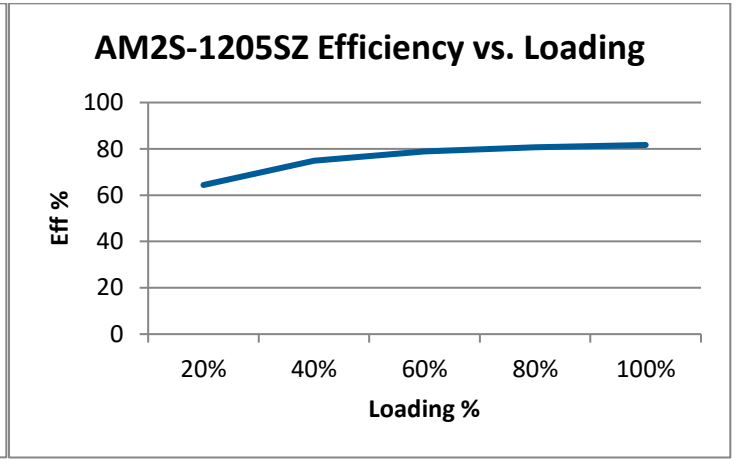
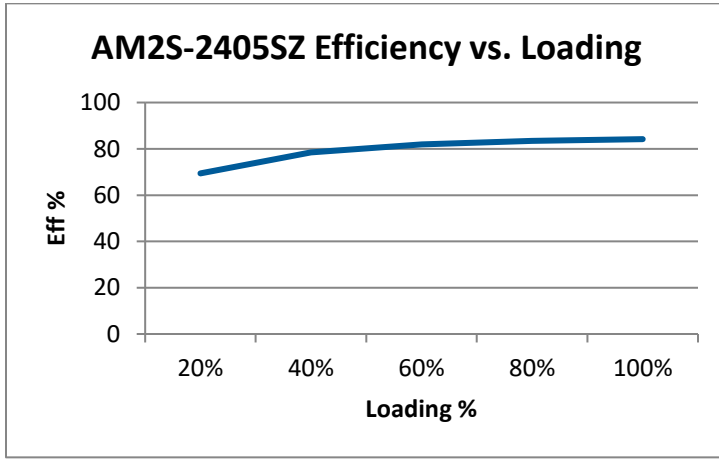


Application Circuit, & Conducted Emissions



Vin	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	10uF/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 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.