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AM3S-Z



SIP4

Aimtec is pleased to introduce its latest 3W single output high isolation DC/DC converter in a compact SIP4 package. With various input voltage options like 5V, 12V and 24VDC, 3000VDC isolation and an unregulated output, the AM3S-Z will offer benefits to your new system design. This is the smallest high isolation 3W DC/DC converter in the Aimtec's SIP4 package family!

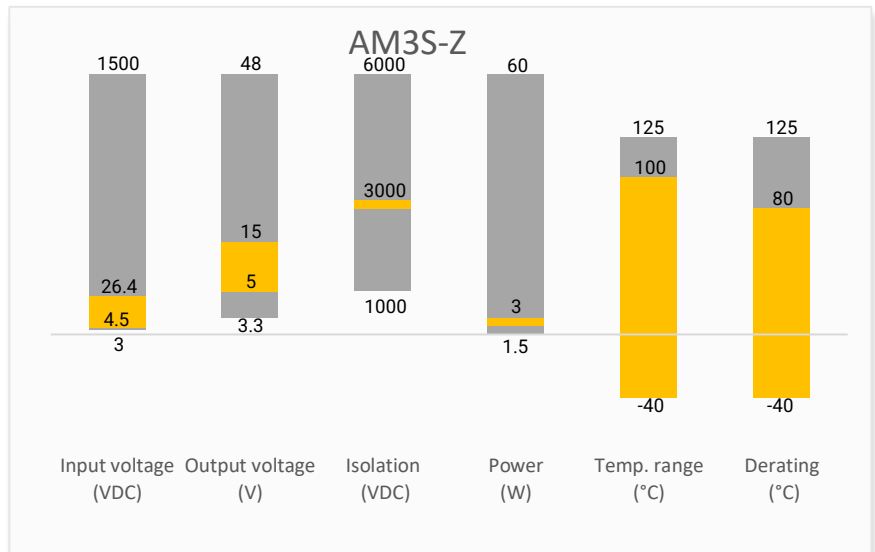
This compact design comes with a high efficiency up to 91%, no minimum load requirement and continuous short circuit protection. Furthermore, the ambient operating temperature is from -40°C to +100°C with full power up to 90°C.

This innovative series can be used for applications that have limited board space such as mobile device chargers, portable electronics, IoT and wireless applications.

Features

- Operating Temp: -40 °C to +100 °C
- High isolation voltage: 3000VDC
- Low ripple & noise, 100mV(p-p), max.
- Unregulated Output
- Efficiency up to 91%
- SIP4 type package

Summary



Training



Product Training Video
(click to open)



Press Release

Coming Soon!

Application Notes

Applications



Power Grid



Industrial



Telecom



Instrumentation

Models & Specifications

Single Output							
Model	Input Voltage (VDC)	Output Voltage (VDC)	Input Current Max (mA)		Output Current Max (mA)	Maximum Capacitive Load (μF)	Efficiency (%) Full Load
			No Load	Full Load			
AM3S-0505SH30Z	5 (4.5-5.5)	5	50	723	600	3300	83
AM3S-0509SH30Z	5 (4.5-5.5)	9	60	690	333	1200	87
AM3S-0512SH30Z	5 (4.5-5.5)	12	55	682	250	1000	88
AM3S-0515SH30Z	5 (4.5-5.5)	15	60	682	200	820	88
AM3S-1205SH30Z	12 (10.8-13.2)	5	25	294	600	3300	85
AM3S-1209SH30Z	12 (10.8-13.2)	9	30	281	333	1200	89
AM3S-1212SH30Z	12 (10.8-13.2)	12	30	278	250	1000	90
AM3S-1215SH30Z	12 (10.8-13.2)	15	30	275	200	820	91
AM3S-2405SH30Z	24 (21.6-26.4)	5	15	147	600	3300	85
AM3S-2409SH30Z	24 (21.6-26.4)	9	15	141	333	1200	89
AM3S-2412SH30Z	24 (21.6-26.4)	12	15	139	250	1000	90
AM3S-2415SH30Z	24 (21.6-26.4)	15	15	138	200	820	91

Input Specification				
Parameters	Conditions	Typical	Maximum	Units
Filter	Capacitors			
Start-up time	Nominal input, Constant resistive load	20		ms
Input reflected ripple current*		20		mA pk-pk
Absolute maximum rating (100ms)	5Vin model		7	VDC
	12Vin model		15	VDC
	24Vin model		28	VDC

* Measured with a simulated source inductance of 12μH and a source capacitor 10μF with ESR<1Ω at 100KHz.

Isolation Specification				
Parameters	Conditions	Typical	Maximum	Units
Tested I/O voltage	60 sec	3000		VDC
Resistance		≥1000		MΩ
Capacitance			65	pF

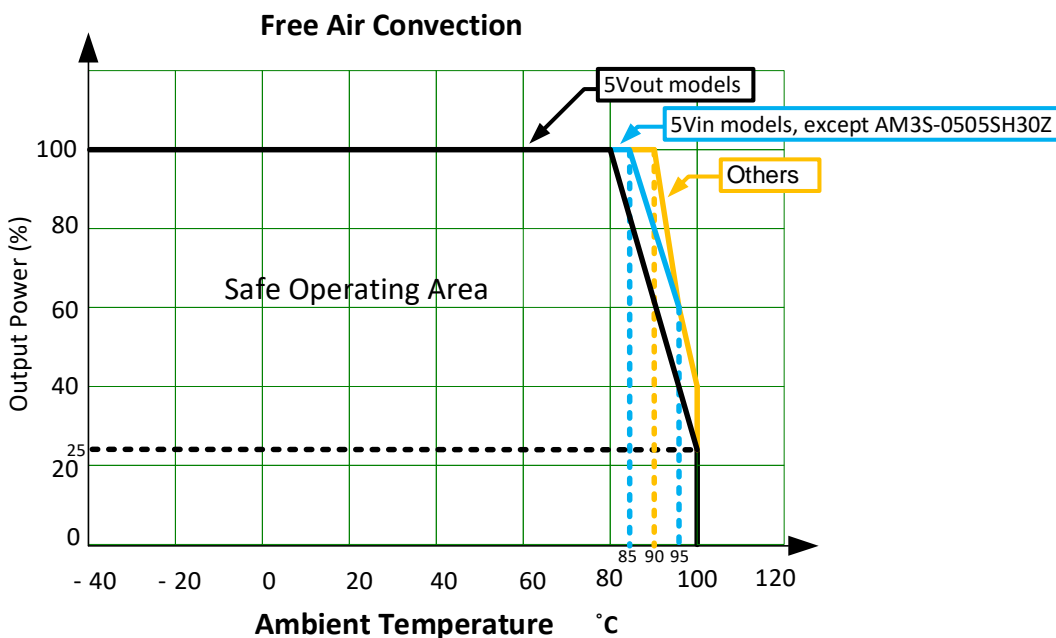
Output Specification				
Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy			± 3	%
Line regulation			± 1.2	%/1%Vin change
Load regulation	10 ~ 100% load		± 10	%
Ripple & Noise*	20MHz bandwidth		100	mV pk-pk

* Ripple and Noise are measured at 20MHz bandwidth by using a 0.1μF (M/C) and 10μF (E/C) capacitor

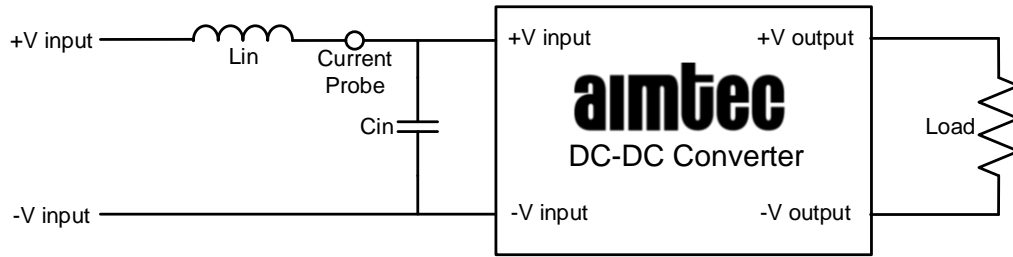
General Specifications				
Parameters	Conditions	Typical	Maximum	Units
Switching frequency		40 to 70		KHz
Operating temperature	With derating	-40 to +100		°C
Storage temperature		-55 to +125		°C
Maximum case temperature			115	°C
Reflow temperature			260	°C
Temperature coefficient		± 0.02		%/°C
Cooling	Nature Convection (30-65LFM)			
Humidity	Non-condensing		95	% RH
Base material	Plastic (UL94V-0)			
Weight		2.2		g
Dimensions (L x W x H)	0.46 x 0.29 x 0.40 inches (11.68 x 7.5 x 10.15mm)			
MTBF	> 6 700 000 hrs (MIL-HDBK -217F, t=+25°C)			

Safety Specifications		
Parameters		
Standards	Design to meet IEC/EN/UL 60950-1,62368-1	
	EMI - Conducted and radiated emission	EN55032, CLASS B with recommended 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 recommended circuit
	Surge Immunity	IEC 61000-4-5, Criteria A with recommended circuit
	RF, Conducted Disturbance Immunity	IEC 61000-4-6, Criteria A
	Power Frequency Magnetic Field Immunity	IEC 61000-4-8, Criteria A

Derating

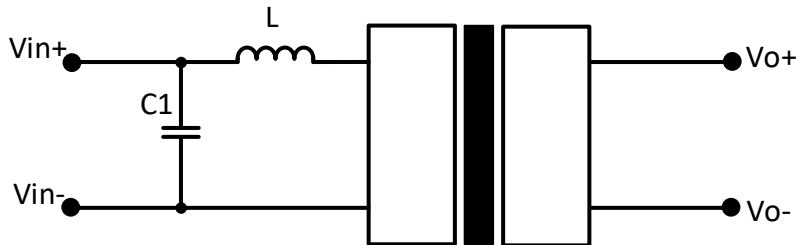


Input Reflected Ripple Current



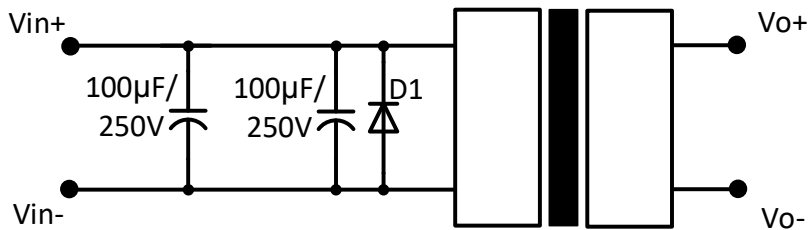
L_{in} : 12 μ H / C_{in} : 10 μ F, ESR<1.0 Ω at 100KHz

EMI Application Circuit (Conducted Emissions)



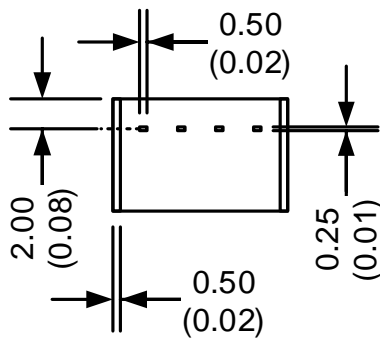
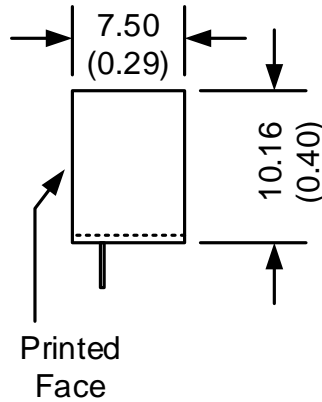
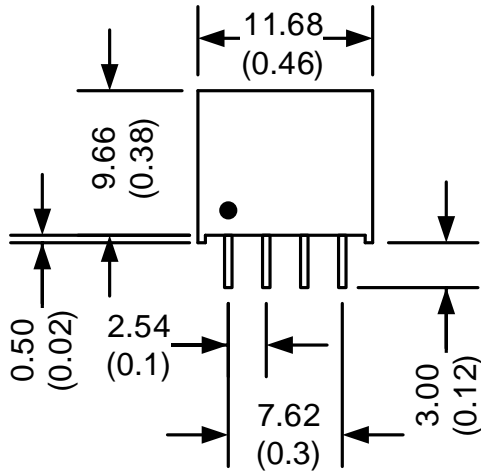
Model	C1	L
5VDC input	1206, 2.2 μ H, 50V	2.2 μ H
12/24VDC input	1206, 4.7 μ H, 50V	4.7 μ H

EFT & Surge Application Circuit



Model	D1
5VDC input	SMDJ8.0A
12VDC input	SMDJ16A
24VDC input	SMDJ30A

Dimensions



Unit: mm(inch)

Case tolerance: $\pm 0.5(0.02)$

Pin tolerance: $\pm 0.05(0.002)$

Pin pitch and length tolerance: $\pm 0.35(0.014)$

Pin to case tolerance: $\pm 0.5(0.02)$

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

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.