



## AM1LS-XZ

SMD

The new AM1LS-XZ is a brand-new DC/DC converter that offers much greater cost effectiveness due to material normalization and production automation also leading to improved reliability and performance. Offering a commercial input voltage range of 5VDC and an output voltage 5V, this series will offer many benefits to your new system design.

This new series offers great operating temperatures, from -40°C to 105°C with full power up to 85°C. It also features an isolation of 1500VDC for improved reliability and system safety. Furthermore, a higher MTBF of 3500,000h, output short circuit protection (OSCP) come standard with the series.

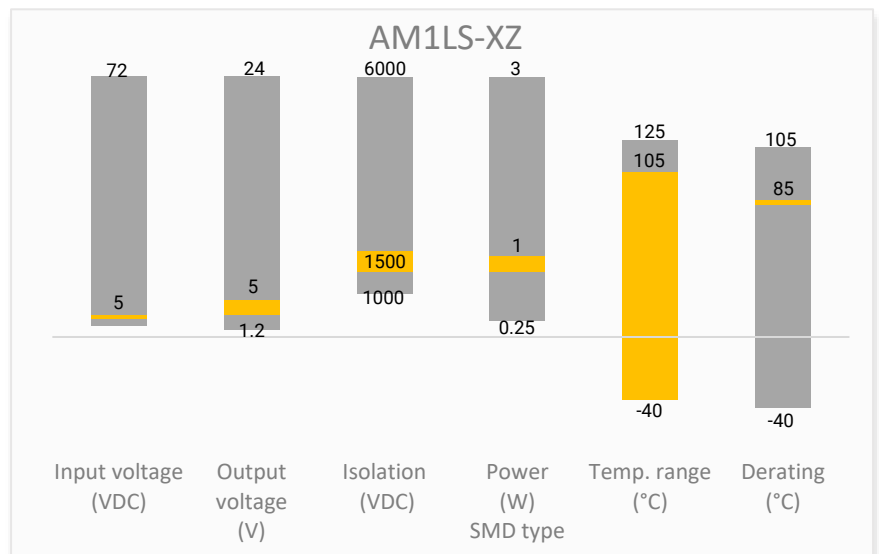
The AM1LS-XZ is perfect for information technology, instrumentation, communication and civil applications.

## Features

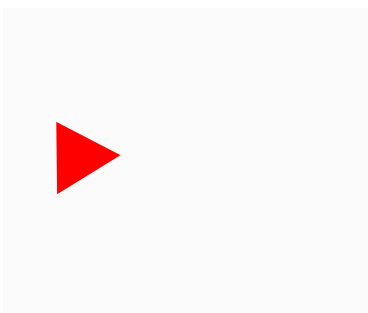
- No load input current as low as 5mA
- Operating Temp: -40 °C to +105 °C
- High I/O isolation voltage : 1500 VDC
- Output short circuit protection
- High efficiency up to 82%
- SMD type package, Industry standard pin-out



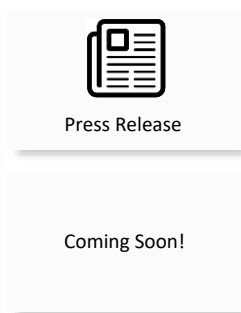
## Summary



## Training



Product Training Video  
(click to open)



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)	Isolation (VDC)	Maximum Capacitive Load (μF)	Efficiency (%) Full Load Typ.
			No Load	Full Load				
AM1LS-0505SXZ	5 (4.5 ~ 5.5)	5	10	286	200	1500	2400	82

Input Specification				
Parameters	Conditions	Typical	Maximum	Units
Voltage range		4.5 – 5.5		VDC
Filter	Capacitor			
Absolute maximum rating	1 sec, max	-0.7 ~ 9		VDC
Input reflected ripple current		15		mA

Output Specification				
Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy	See Typical Characteristic			
Line regulation	Input voltage change : 1%		1.2	%
Load regulation	10 ~ 100% load	10	15	%
Short circuit protection	Continuous, auto-recovery			
Temperature coefficient	Full load	±0.02		%/°C
Ripple & Noise	20MHz bandwidth	30	75	mV pk-pk

Note: Please refer to application notes for Ripple & Noise test information.

Isolation Specification				
Parameters	Conditions	Typical	Maximum	Units
Tested I/O voltage	60 sec, 1mA max	1500		VDC
Resistance	Input to output resistance at 500Vdc	>1000		MOhm
Capacitance	Input to output, 100KHz/0.1V	20		pF

General Specifications				
Parameters	Conditions	Typical	Maximum	Units
Switching frequency	Full load, nominal input voltage	270		KHz
Operating temperature	See derating graph	-40 to +100		°C
Storage temperature		-55 to +125		°C
Case temperature rise	Ta = 25°C	15		°C
Maximum case temperature			120	°C
Reflow Temperature	Maximum duration ≤60s over 217°C		245	°C
Lead-free reflow solder process	IPC/JEDEC J-STD-020D.1			
Cooling	Free air convection			
Humidity	Non-condensing		95	% RH
Case material	Heat resistant black Plastic (flammability to UL 94V-0)			
Weight		1.4		g
Dimensions (L x W x H)	0.5 x 0.44 x 0.25 inches, 12.70 x 11.20 x 6.25mm			
MTBF	> 3 500 000 hrs (MIL-HDBK -217F, t=+25°C) / Full Load			
Moisture sensitivity level (MSL)	IPC/JEDEC J-STD-020D.1	Level 1		

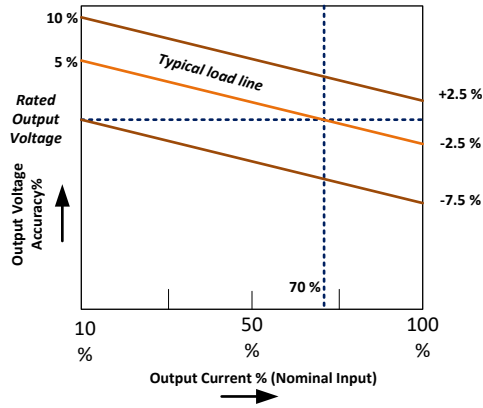
All specifications in this datasheet are measured at an ambient temperature of 25°C, humidity<75%, nominal input voltage and at rated output load unless otherwise specified.

### Safety Specifications

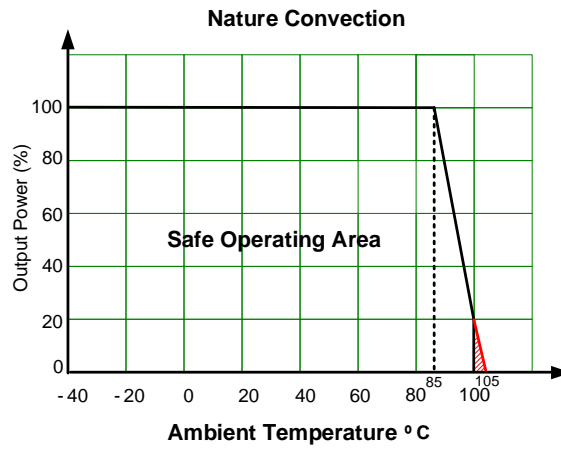
#### Parameters

Agency approvals	UL 62368-1	
Standards	EMC - Conducted and radiated emission	CISPR32/EN55032, Class B with recommended circuit
	Electrostatic Discharge Immunity	IEC 61000-4-2 Air ±8KV, Contact ±4KV, Criteria B

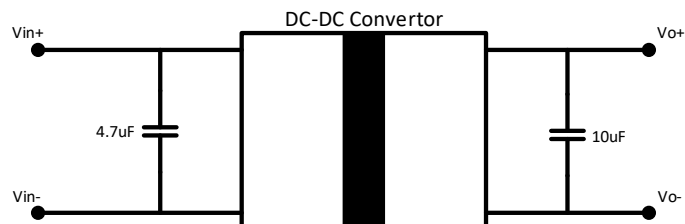
### Typical Characteristic



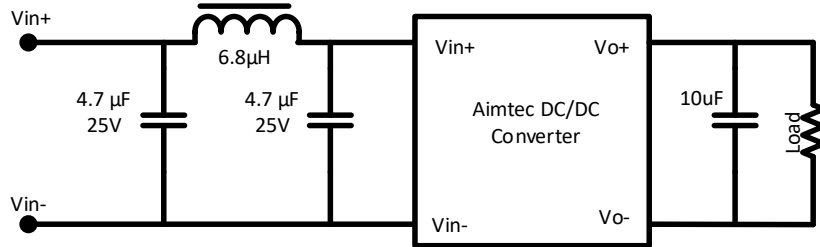
### Derating



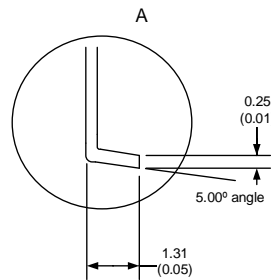
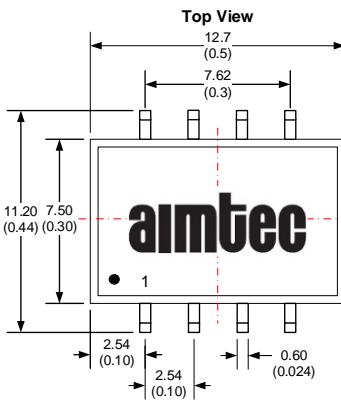
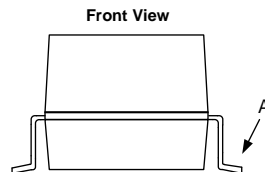
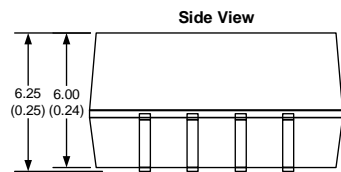
### Typical Application Circuit



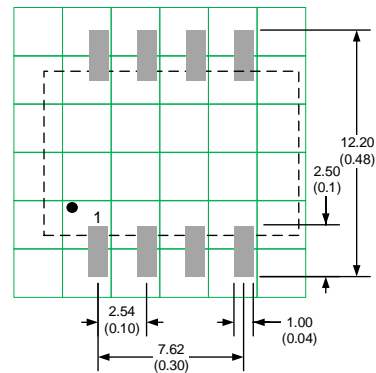
## EMI Recommended Circuit



## Dimensions



Notes:  
All dimensions are typical in millimeters (inches).  
Pin section tolerances :  $\pm 0.10$  ( $\pm 0.004$ )  
General tolerances :  $\pm 0.25$  ( $\pm 0.01$ )



Note: Grid 2.54\*2.54mm

Pin Out Specifications	
Pin	Single
1	-V Input
2	+V Input
4	-V Output
5	+V Output
Other Pins	NC
NC: Pin to be isolated from circuitry	

**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).