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AM1LD-NZ



SMD Package

The AM1LD-NZ is a 1W SMD DC/DC converter that offers great cost savings thanks to an improved manufacturing process. It also features excellent reliability and performance while offering a standard input voltage range of 5VDC as well as an output voltage of 5V. This low height profile design will surely benefit your new system design.

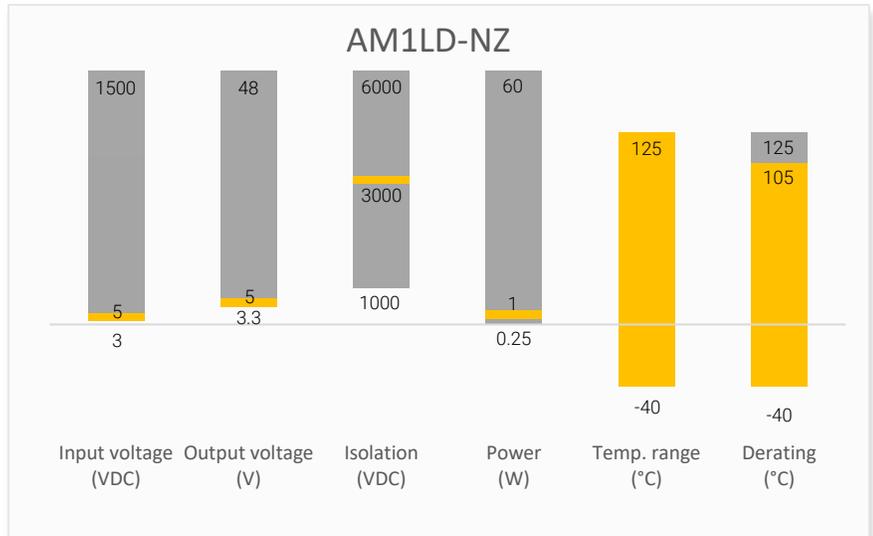
This new series offers great operating temperatures, from -40 to 125°C with full power up to 105°C. Also, an isolation of 3000VDC for improved reliability and system safety as well as a great 7,500,000h MTBF come standard.

The AM1LD-NZ is suitable for instrumentation, industrial controls, communication and IoT applications.

Features

- High I/O Isolation 3000VDC/1500VAC
- Continuous Short circuit protection
- Operating Temp: -40 °C to +125 °C
- Low profile case height: 3.1mm
- Compact Footprint and high-power Density
- Efficiency up to 85%
- Unregulated output

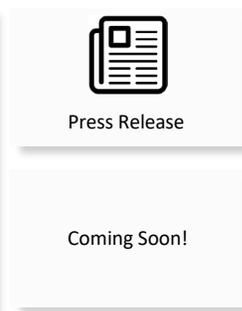
Summary



Training



Product Training Video
(click to open)



Application Notes

Applications



IoT



Industrial



Telecom



Portable Equipment

Models & Specifications



Single Output

Model	Input Voltage (VDC)	Output Voltage (VDC)	Input Current No Full load max (mA)	Output Current max (mA)	Isolation (VDC)	Maximum capacitive Load (μF)	Efficiency Typ. (%)
AM1LD-0505SNZ	5 (4.5 – 5.5)	5	15/247	200	3000	2400	85

Input Specification

Parameters	Conditions	Typical	Maximum	Units
Filter	Capacitor			
Absolute maximum rating	Maximum duration 1s	>0.7	9	VDC
Input reflected ripple current		10		mA pk-pk

Isolation Specification

Parameters	Conditions	Typical	Maximum	Units
Tested I/O voltage	60 sec, leakage ≤ 1mA	3000		VDC
	60 sec, leakage ≤ 1mA	1500		VAC
Resistance	500VDC	>1000		MΩ
Capacitance	100kHz/0.1V	8		pF

Output Specification

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy	See output voltage tolerance		±10	%
Line regulation	Per 1% Vin change		1.2	%
Load regulation	10-100% load	8	15	%
Temperature coefficient		±0.02		%/°C
Ripple & Noise*		30	75	mV pk-pk
Minimum load		10		%

* Ripple and Noise are measured at 20MHz bandwidth. Please refer to the application note for specific details.

General Specifications

Parameters	Conditions	Typical	Maximum	Units
Switching frequency	Full load	300		KHz
Short circuit protection	Continuous, Auto recovery			
Operating temperature	With derating at 105°C	-40 to +125		°C
Storage temperature		-55 to +125		°C

Maximum Case temperature		135		°C
Reflow soldering temperature	Maximum duration 60s when over 217°C		245	°C
Soldering method	IPC/JEDEC J-STD-020D.1.			
Cooling	Free air convection			
Humidity	Non-condensing		95	% RH
Moisture sensitivity level	Level 3			
Vibration test	10-150Hz, 5G, 0.75mm, 90min along all axis			
Case material	Black plastic (flammability to UL 94V-0)			
Weight		0.5		g
Dimensions (L x W x H)	0.35 x 0.28 x 0.12 inches	9.00 x 7.00 x 3.10 mm		
MTBF	7 500 000 hrs (MIL-HDBK -217F, t=+25°C) / Full Load			

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.

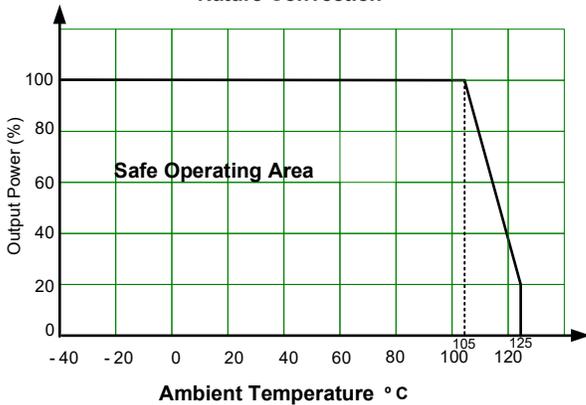
Safety Specifications

Parameters

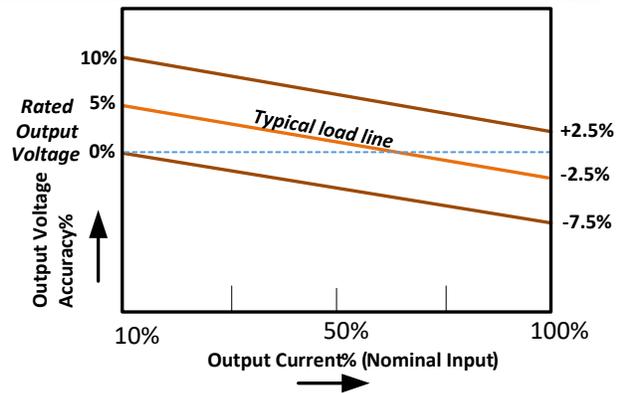
Agency approvals	EN 62368-1	
Standards	Information technology Equipment	Design to meet IEC 62368-1, UL 62368-1
	EMC - Conducted and radiated emission	CISPR32 / EN55032, class B with the recommended EMI circuit
	Electrostatic Discharge Immunity	IEC 61000-4-2 Contact ±8KV, Criteria B
	RF, Electromagnetic Field Immunity	IEC 61000-4-3 10V/m, Criteria A
	RF, Conducted Disturbance Immunity	IEC 61000-4-6 3Vr.m.s, Criteria A

Derating

Nature Convection

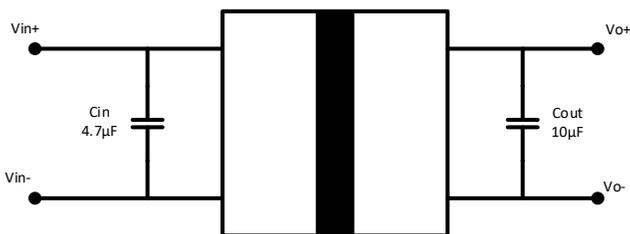


Output voltage tolerance

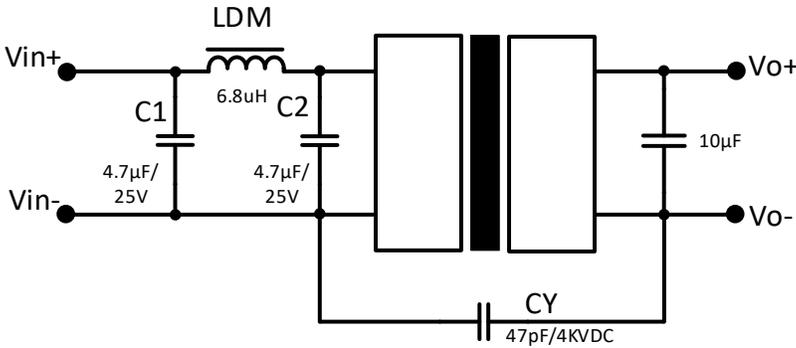


Typical application circuit

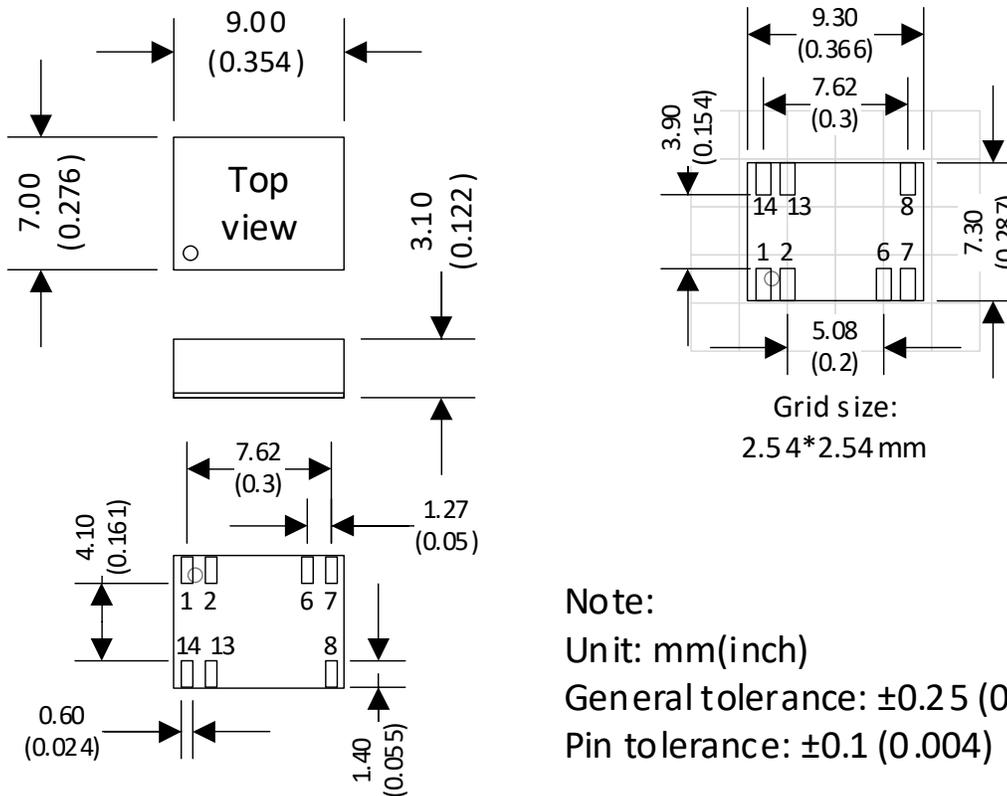
Single



EMI Recommended circuit



Dimensions



Pin Out Specifications	
Pin	Single
1	-Input
2	-Input
6	-V Output
7	-V Output
8	+V Output
13	+Input
14	+Input

Note:

Unit: mm(inch)

General tolerance: ± 0.25 (0.01)

Pin tolerance: ± 0.1 (0.004)

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.