AM2LOW-Z

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SMD

Aimtec's AM2LOW-Z series is a 2W DC-DC converter, designed to offer a 4:1 ultra-wide input voltage range in a miniature SMD package with 3000VDC isolation, ideal for applications where size is the major design constraint.
The convertor has a high MTBF of 890K hours and is designed to meet the latest IEC/EN/UL 62368-1 safety standard in addition to incorporating a host of features such as Continuous short circuit protection and Undervoltage lockout protection which help engineers design safe, reliable and robust products.
The AM2LOW-Z is available with both single and dual outputs of 5,12 and 15 voltage options. It also has a CTRL pin for remote On/Off applications that can help improve end product efficiency. This product can be widely used in applications such as IoT, industrial controls, instrumentation and telecommunication.

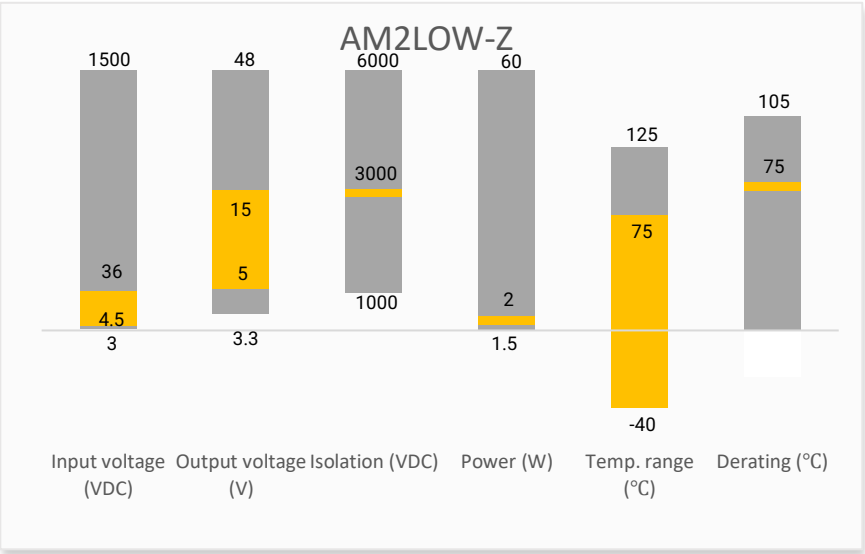
Features

- Operating Temp: -40 °C to +75 °C
- High isolation voltage: 3000VDC
- Low ripple & noise, 100mV(p-p), max.
- Unregulated Output
- Remote ON/OFF control
- SMD type package

RoHS

3yr Warranty

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			
AM2LOW-1205SH30Z	12 (4.5-18)	5	50	214	400	1000	78
AM2LOW-1212SH30Z	12 (4.5-18)	12	50	211	166.7	220	79
AM2LOW-1215SH30Z	12 (4.5-18)	15	50	206	133.3	100	81
AM2LOW-2405SH30Z	24 (9-36)	5	30	107	400	1000	78
AM2LOW-2412SH30Z	24 (9-36)	12	30	105	166.7	220	79
AM2LOW-2415SH30Z	24 (9-36)	15	30	103	133.3	100	81

Note: Use suffix "TR" for tape & reel packing (ex. AM2LOW-1205SH30ZTR).

Dual 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			
AM2LOW-1212DH30Z	12 (4.5-18)	±12	50	211	±83.3	±100	79
AM2LOW-1215DH30Z	12 (4.5-18)	±15	50	206	±66.7	±47	81
AM2LOW-2412DH30Z	24 (9-36)	±12	30	105	±83.3	±100	79
AM2LOW-2415DH30Z	24 (9-36)	±15	30	103	±66.7	±47	81

Note: Use suffix "TR" for tape & reel packing (ex. AM2LOW-1212DH30ZTR).

Input Specification

Parameters	Conditions		Typical	Maximum	Units
Filter	Capacitance Filter				
Absolute maximum rating	100ms	12VDC input models		25	VDC
		24VDC input models		50	VDC
Start up time			30		ms
Input reflected ripple current			20		mA pk-pk
Under voltage lockout	12VDC input models	ON	4.1		VDC
		OFF	3.5		
	24VDC input models	ON	8.5		
		OFF	7.0		
On/Off Control	ON – Open or high impedance; OFF – Short circuit Pin 2 and Pin 3 with 1k Ohm, idle current 3mA max.				

Isolation Specification

Parameters	Conditions	Typical	Maximum	Units
Tested I/O voltage	60 sec	3000		VDC
Resistance		≧1000		GΩ
Capacitance		25		pF

Output Specification

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy		± 1		%
Line regulation			± 0.2	%
Load regulation	0 ~ 100% load		± 0.5	%
Short circuit protection	Continues, Auto recovery			
Ripple & Noise*	20MHz bandwidth		100	mV pk-pk
Transient recovery time	Nominal input 100~25% load, 25% load step change	500		µS
Transient response deviation	Nominal input 100~25% load, 25% load step change		± 3	%

* 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		100		KHz
Operating temperature	Without derating	-40 to +75		°C
Storage temperature		-55 to +125		°C
Maximum case temperature			95	°C
Reflow temperature	10 sec.		245	°C
Temperature coefficient			± 0.03	%/°C
Lead-free reflow solder process	IPC/JEDEC J-STD-020D.1			
Cooling	Nature Convection (30~65 LFM)			
Humidity	Non-condensing		95	% RH
Moisture sensitivity level (MSL)	IPC/JEDEC J-STD-020D.1	Level 1		
Base material	Non-Conductive Black Plastic (UL94V-0)			
Weight		2		g
Dimensions (L x W x H)	0.58 x 0.56 x 0.35 inches (14.65 x 14.40 x 8.95mm)			
MTBF	> 890 000 hrs (MIL-HDBK -217F, t=+25°C)			

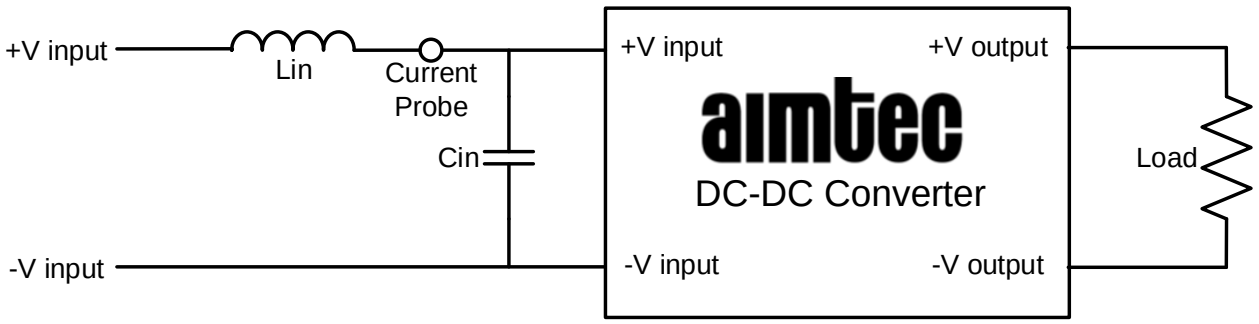
Environmental Specifications

Viberation	MIL-STD-810

Safety Specifications

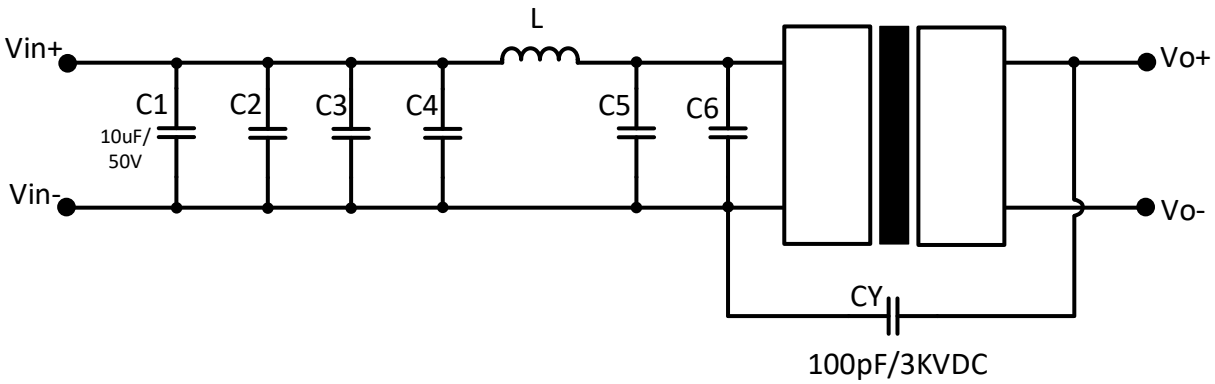
Parameters		
Standards	Design to meet IEC/EN/UL 60950-1,62368-1	
	EMI - Conducted and radiated emission	EN55032, CLASS A with recommended circuit
	Electrostatic Discharge Immunity	IEC 61000-4-2, Criteria A
	RF, Electromagnetic Field Immunity	IEC 61000-4-3, Criteria A
	Electrical Fast Transient/Burst 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
	PFMF	IEC 61000-4-8, Criteria A

Input Reflected Ripple Current



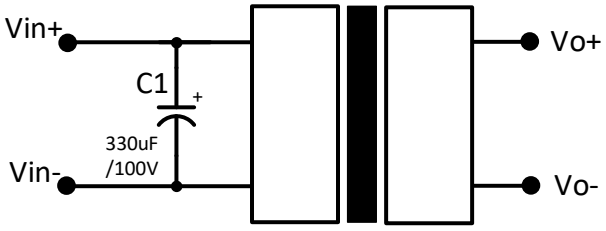
Lin: 12uH / Cin : 47uF,ESR<1.0Ω at 100KHz

EMI Application Circuit (Conducted Emissions)



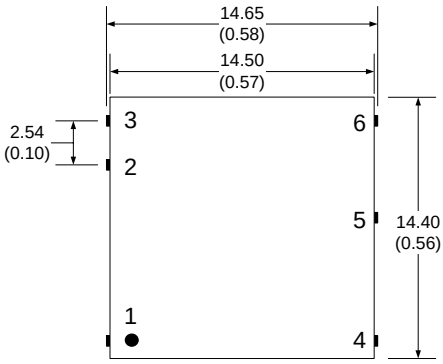
Model	C2~C6	L
12VDC input		2.2 µH
24VDC input	10µF,50V	47 µH

EFT & Surge Application Circuit

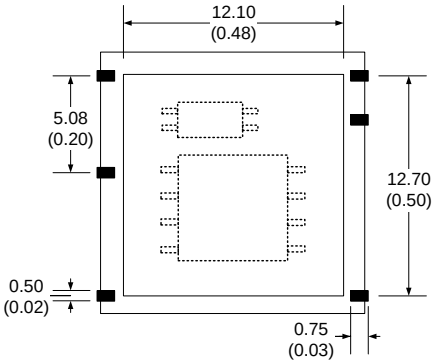


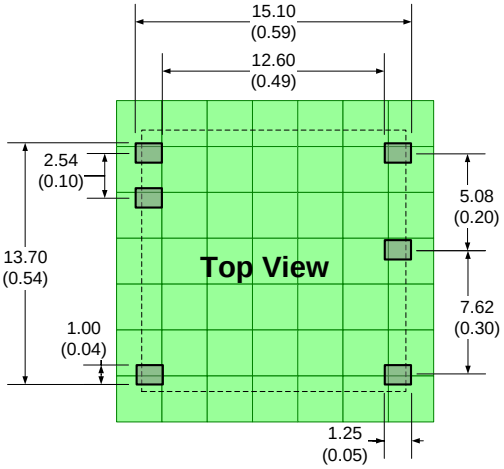
Dimensions

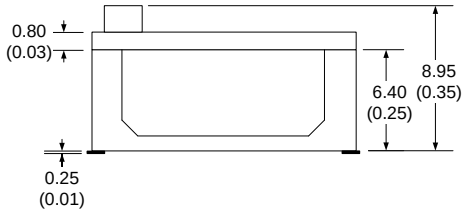
Top View



Bottom View







Pin Out Specifications		
Pin	**Single**	**Dual**
1	-V Input	-V Input
2	+V Input	+V Input
3	Remote ON/OFF	Remote ON/OFF
4	-V Output	-V Output
5	N.C	Common
6	+V Output	+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 the ones listed in this datasheet. **7.** Warranty is in accordance with Aimtec's standard Terms of Sale available at www.aimtec.com.