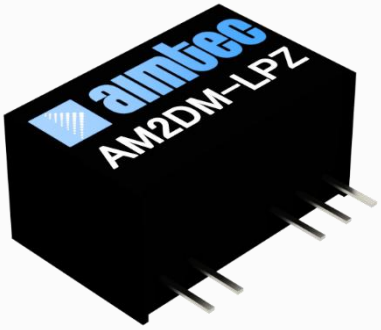
Click to ORDER samples

AM2DM-LPZ



SIP7 Package

The AM2DM-LPZ is a 2W SIP7 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 5-24VDC as well as an output voltage of -15 to 24V. This compact SIP7 design will surely benefit your new system design.

This new series offers great operating temperatures, from -40 to 105°C with full power up to 85°C. Also, an isolation of 4200VAC or 6000VDC for improved reliability and system safety as well as a great 19,360,000h MTBF come standard.

The AM2DM-LPZ is suitable for many applications such as medical collection isolation, high voltage collection circuits, and IGBT drive circuits.

Features

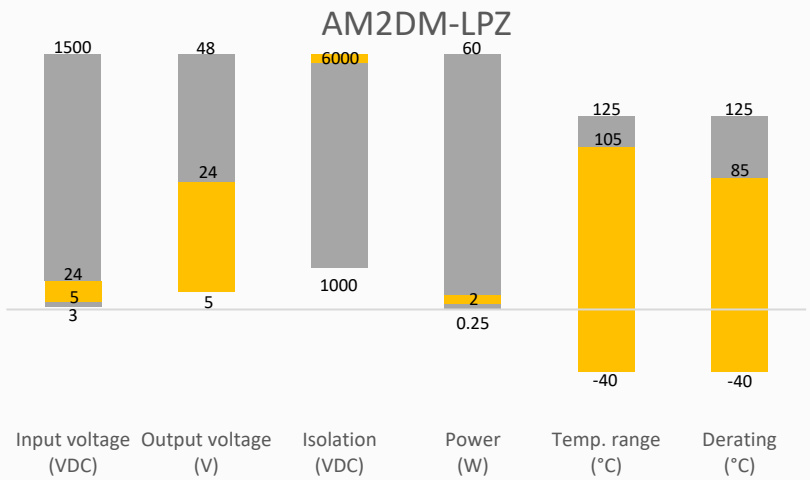
- High I/O Isolation of 4200VAC or 6000VDC
- Continuous Short circuit protection
- Operating Temp: -40 °C to +105 °C
- Industry standard SIP7 pin-out
- Efficiency up to 83%
- Unregulated output
- Leakage current < 2µA
- Designed to meet UL/EN/ES 60601-1, EN/IEC 62368-1

RoHS

3yr Warranty

CE

Summary



Training

Product Training Video (click to open)

Press Release

Coming Soon!

Application Notes

Applications

Industrial

Portable Equipment

Medical

IoT

Models & Specifications

Single Output

Model	Input Voltage (VDC)	Output Voltage (VDC)	Input Current Full | No load typ. (mA)	Output Current max | min (mA)*	Isolation (VDC)	Maximum capacitive Load (µF)	Efficiency Typ. (%)
AM2DM-0505SH60LPZ	5 (4.5-5.5)	5	453 / 98	400 / 8	6000	220	80
AM2DM-0509SH60LPZ	5 (4.5-5.5)	9	453 / 98	222 / 6	6000	220	80
AM2DM-0512SH60LPZ	5 (4.5-5.5)	12	453 / 98	168 / 4	6000	220	82
AM2DM-0515SH60LPZ	5 (4.5-5.5)	15	453 / 98	136 / 3	6000	220	82
AM2DM-1205SH60LPZ	12 (10.8-13.2)	5	199 / 70	400 / 8	6000	220	81
AM2DM-1209SH60LPZ	12 (10.8-13.2)	9	199 / 70	222 / 6	6000	220	80
AM2DM-1212SH60LPZ	12 (10.8-13.2)	12	199 / 70	168 / 4	6000	220	83
AM2DM-1215SH60LPZ	12 (10.8-13.2)	15	199 / 70	136 / 3	6000	220	80
AM2DM-2405SH60LPZ	24 (21.6-26.4)	5	101 / 35	400 / 8	6000	220	80
AM2DM-2409SH60LPZ	24 (21.6-26.4)	9	101 / 35	222 / 6	6000	220	80
AM2DM-2412SH60LPZ	24 (21.6-26.4)	12	101 / 35	168 / 4	6000	220	82
AM2DM-2415SH60LPZ	24 (21.6-26.4)	15	101 / 35	136 / 3	6000	220	81
AM2DM-2424SH60LPZ	24 (21.6-26.4)	24	101 / 35	83 / 2	6000	220	81

* Performance will be degraded if the load is not within the output current range.

Dual Output

Model	Input Voltage (VDC)	Output Voltage (VDC)	Input Current Full | No load typ. (mA)	Output Current max | min (mA)*	Isolation (VDC)	Maximum capacitive Load (µF)	Efficiency Typ. (%)
AM2DM-0505DH60LPZ	5 (4.5-5.5)	±5	453 / 98	±200 / ±4	6000	100	81
AM2DM-0509DH60LPZ	5 (4.5-5.5)	±9	453 / 98	±110 / ±3	6000	100	81
AM2DM-0512DH60LPZ	5 (4.5-5.5)	±12	453 / 98	±80 / ±2	6000	100	82
AM2DM-0515DH60LPZ	5 (4.5-5.5)	±15	453 / 98	±70 / ±2	6000	100	82
AM2DM-1205DH60LPZ	12 (10.8-13.2)	±5	199 / 70	±200 / ±4	6000	100	80
AM2DM-1209DH60LPZ	12 (10.8-13.2)	±9	199 / 70	±110 / ±3	6000	100	81
AM2DM-1212DH60LPZ	12 (10.8-13.2)	±12	199 / 70	±80 / ±2	6000	100	83
AM2DM-1215DH60LPZ	12 (10.8-13.2)	±15	199 / 70	±70 / ±2	6000	100	80
AM2DM-2405DH60LPZ	24 (21.6-26.4)	±5	101 / 35	±200 / ±4	6000	100	80
AM2DM-2409DH60LPZ	24 (21.6-26.4)	±9	101 / 35	±110 / ±3	6000	100	81
AM2DM-2412DH60LPZ	24 (21.6-26.4)	±12	101 / 35	±80 / ±2	6000	100	82
AM2DM-2415DH60LPZ	24 (21.6-26.4)	±15	101 / 35	±70 / ±2	6000	100	81

* Performance will be degraded if the load is not within the output current range.

Input Specification

Parameters	Conditions	Typical	Maximum	Units
Filter	Capacitor			
Absolute maximum rating	Maximum duration 1s, 5Vin	> -0.7	9	VDC
	Maximum duration 1s, 12Vin	> -0.7	18	VDC
	Maximum duration 1s, 24Vin	> -0.7	30	VDC
Input reflected ripple current		15		mA
Hot Plug		Unavailable		

Isolation Specification

Parameters	Conditions	Typical	Maximum	Units
Tested I/O voltage	60 sec, leakage ≤ 1mA	4200		VAC
		6000		VDC
Patient leakage current	250VAC, 50/60Hz		2	µA
Resistance	500VDC	>1000		MΩ
Capacitance	100kHz/0.1V	4		pF

Output Specification

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy		See output voltage tolerance		
Line regulation	Per 1% Vin change		1.5	%
Load regulation	10-100% load, 5V output models		20	%
	10-100% load, other output models		15	%
Ripple & Noise*		100	150	mV p-p
Temperature coefficient	100% full load	±0.02		%/°C

* Ripple and Noise are measured at 20MHz bandwidth. Please refer to the application note for specific details.
Dual output models need to operate with balanced load. The load difference between two outputs over 10% may cause unstable operating of the converter.

General Specifications

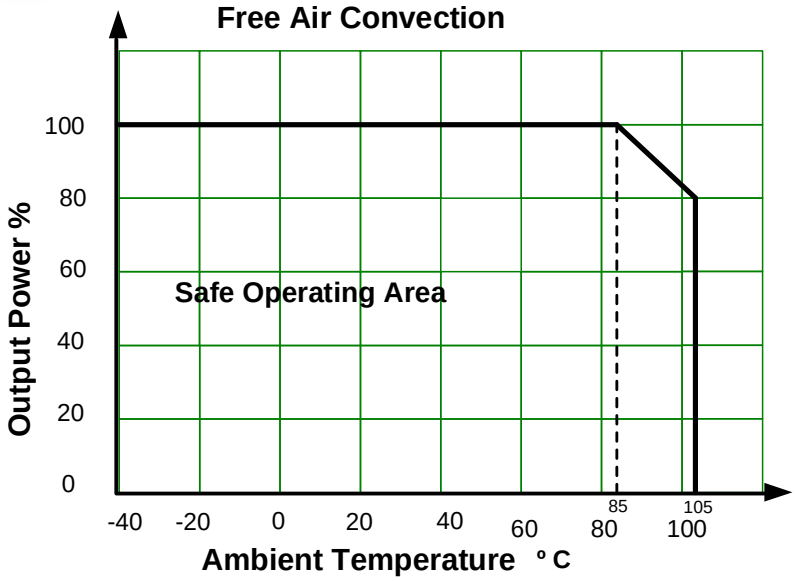
Parameters	Conditions	Typical	Maximum	Units
Switching frequency	100% load, nominal input voltage	220		KHz
Short circuit protection	Continuous, Auto recovery			
Operating temperature	Derating when operating temperature ≥85°C	-40 to +105		°C
Storage temperature		-55 to +125		°C
Case temperature rise	100% load	25		°C
Manual soldering temperature	1.5mm away from case, duration ≤ 10sec		300	°C
Cooling	Free air convection			
Humidity	Non-condensing	>5	95	% RH
Vibration	10-150Hz, 5G, 0.75mm along X, Y and Z			
Case material	Black plastic (flammability to UL 94V-0)			
Weight		4.2		g
Dimensions (L x W x H)	0.77 x 0.39 x 0.49 inches (19.50 x 9.80 x 12.50 mm)			
MTBF	19 360 000 hrs (MIL-HDBK -217F, t=+25°C) / Full Load			
Creepage & clearance distance	Minimum of 5 mm			

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.

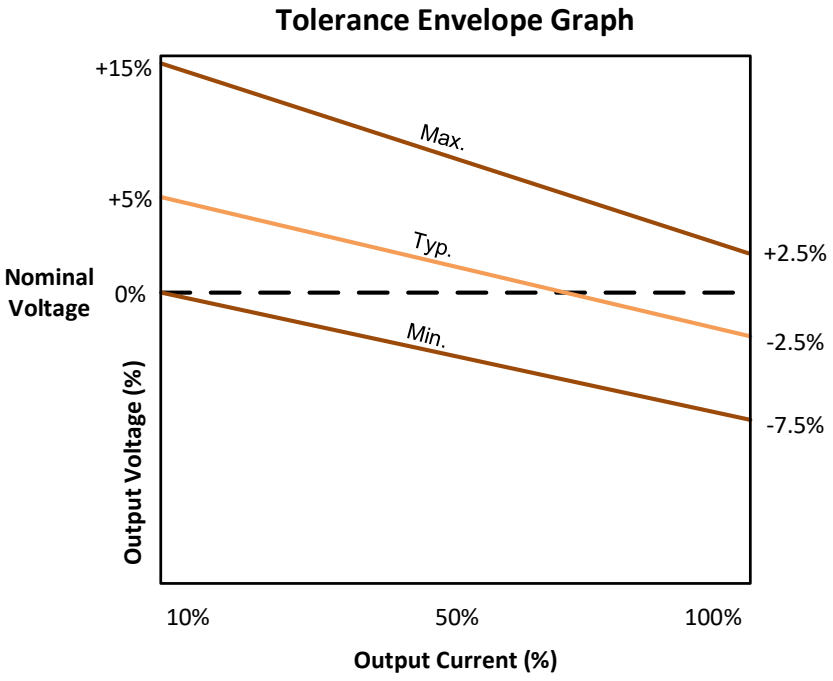
Safety Specifications

Parameters		
Standards	Designed to meet UL/EN/ES 60601-1	
	Information technology equipment	Designed to meet EN/IEC 62368-1
	EMC - Conducted and radiated emission	CISPR32 / EN55032 class B with the recommended EMI circuit EN 60601-1-2, CISPR 11 class B with the recommended EMI circuit
	Electrostatic Discharge Immunity	EN60601-1-2 (IEC 61000-4-2) Air ±15KV, Contact ±8KV, Criteria B

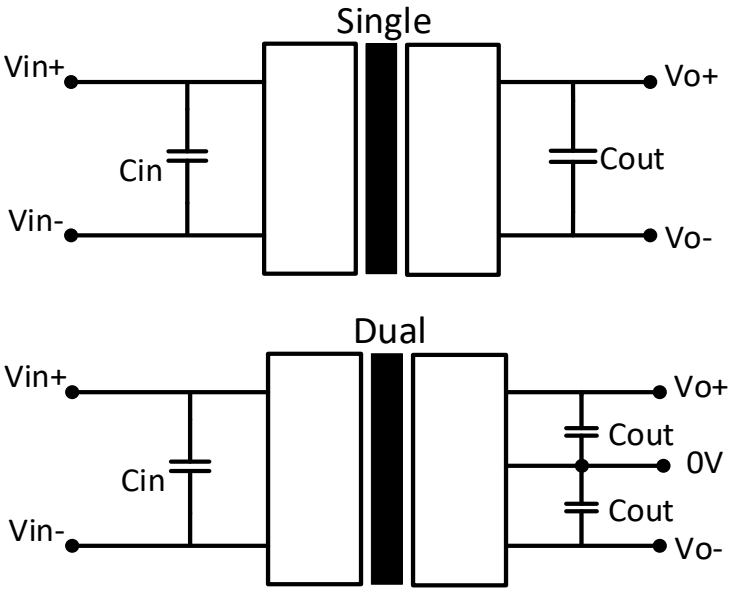
Derating



Output voltage tolerance



Typical application circuit

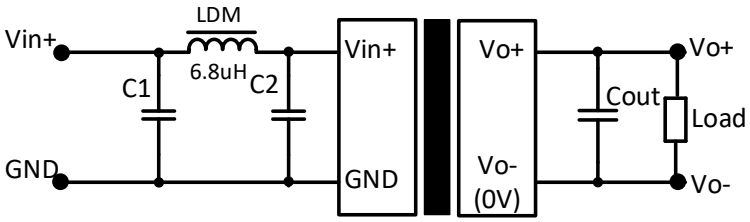


Vin	Cin
5VDC	4.7µF/16V
12VDC	2.2µF/25V
24VDC	1µF/50V

Vout	Cout
5VDC	10µF/16V
9VDC	2.2µF/25V
12VDC	2.2µF/25V
15VDC	1µF/25V
24VDC	1µF/25V

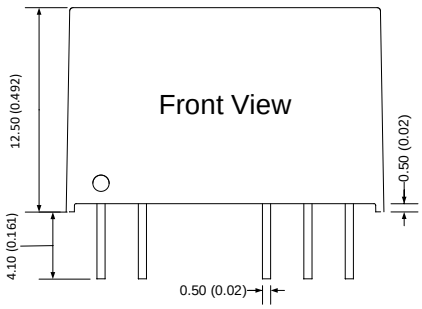
Dual Vout	Cout
±5/±9VDC	4.7µF/16V
±12/±15VDC	1µF/25V

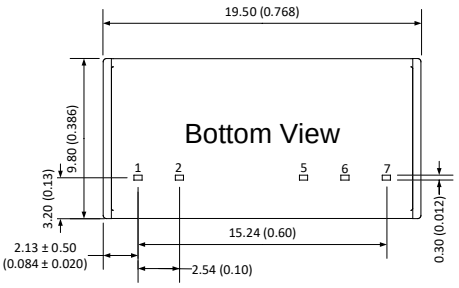
Recommended EMI circuit

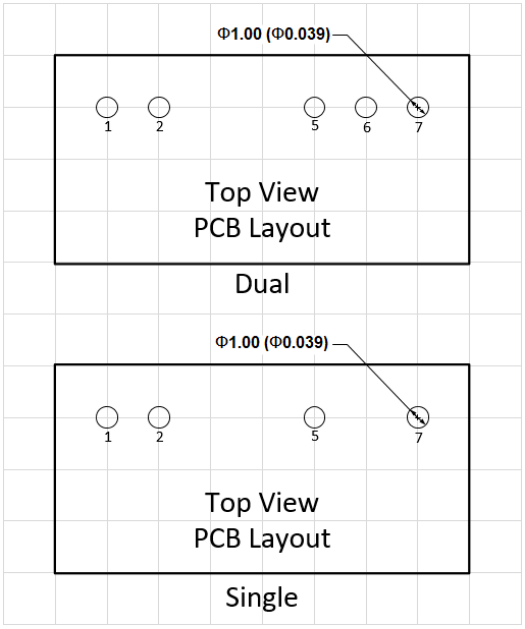


Input Voltage		5/12/15/24 VDC
Component	C1/C2	4.7µF/50V
	Cout	Reference Cout in Table 1
	LDM	6.8µH

Dimensions







Pin Out Specifications		
Pin	Single output	Dual output
1	+V Input	+V Input
2	-V Input	-V Input
5	-V Output	-V Output
6	No pin	Common
7	+V Output	+V Output

Note:
Grid 2.54 x 2.54mm
Unit: mm(inch)
Pin section tolerances: ±0.10(±0.004)
General tolerances: ±0.50(±0.020)

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.