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AM2LS-LPZ



SMD Package

The AM2LS-LPZ is a 2W 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 5, 12, 15, 24VDC as well as an output voltage of 5-24V. This compact SMD 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 71 or 85°C. Also, an isolation of 1500VDC & 3000VDC for improved reliability and system safety as well as a great 3,500,000h MTBF come standard.

The AM2LS-LPZ is suitable for instrumentation, industrial controls, industrial applications, communication interface and IoT applications.

Features

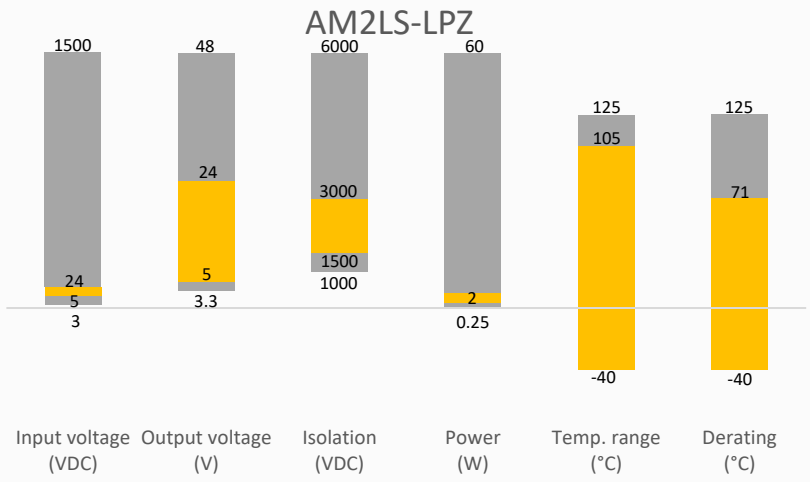
- High I/O Isolation 1500VDC & 3000VDC
- Continuous Short circuit protection
- Operating Temp: -40 °C to +105 °C
- Low profile case height: 7.25mm
- Compact footprint and high-power Density
- Efficiency up to 85%
- Unregulated output

RoHS

3yr Warranty

CE

Summary



Training



Product Training Video (click to open)

Press Release

Coming Soon!

Application Notes

Applications

IoT

Industrial

Telecom

Portable Equipment

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. (%)
AM2LS-0505SLPZ	5 (4.5-5.5)	5	477 / 8	400 / 40	1500	2400	83
AM2LS-0509SLPZ	5 (4.5-5.5)	9	471 / 8	222 / 22	1500	1000	84
AM2LS-0512SLPZ	5 (4.5-5.5)	12	471 / 8	167 / 17	1500	1000	84
AM2LS-0515SLPZ	5 (4.5-5.5)	15	466 / 8	133 / 13	1500	560	84
AM2LS-0524SLPZ	5 (4.5-5.5)	24	466 / 8	83 / 8	1500	220	84
AM2LS-1205SLPZ	12 (10.8-13.2)	5	196 / 8	400 / 40	1500	2400	83
AM2LS-1209SLPZ	12 (10.8-13.2)	9	196 / 8	222 / 22	1500	1200	84
AM2LS-1212SLPZ	12 (10.8-13.2)	12	196 / 8	167 / 17	1500	1000	84
AM2LS-1215SLPZ	12 (10.8-13.2)	15	196 / 8	133 / 13	1500	560	84
AM2LS-1224SLPZ	12 (10.8-13.2)	24	196 / 8	83 / 8	1500	220	84
AM2LS-1505SLPZ	15 (13.5-16.5)	5	161 / 8	400 / 40	1500	2400	83
AM2LS-1509SLPZ	15 (13.5-16.5)	9	161 / 8	222 / 22	1500	1200	84
AM2LS-1512SLPZ	15 (13.5-16.5)	12	161 / 8	167 / 17	1500	1000	84
AM2LS-1515SLPZ	15 (13.5-16.5)	15	161 / 8	133 / 13	1500	560	84
AM2LS-1524SLPZ	15 (13.5-16.5)	24	161 / 8	83 / 8	1500	220	84
AM2LS-2405SLPZ	24 (21.6-26.4)	5	98 / 8	400 / 40	1500	2400	83
AM2LS-2409SLPZ	24 (21.6-26.4)	9	98 / 8	222 / 22	1500	1200	83
AM2LS-2412SLPZ	24 (21.6-26.4)	12	98 / 8	167 / 17	1500	1000	84
AM2LS-2415SLPZ	24 (21.6-26.4)	15	98 / 8	133 / 13	1500	560	85
AM2LS-2424SLPZ	24 (21.6-26.4)	24	98 / 8	83 / 8	1500	220	85
AM2LS-0505SH30LPZ	5 (4.5-5.5)	5	477 / 8	400 / 40	3000	2400	83
AM2LS-0507SH30LPZ	5 (4.5-5.5)	7	477 / 8	286 / 29	3000	1000	84
AM2LS-0509SH30LPZ	5 (4.5-5.5)	9	471 / 8	222 / 22	3000	1000	84
AM2LS-0512SH30LPZ	5 (4.5-5.5)	12	471 / 8	167 / 17	3000	1000	84
AM2LS-0515SH30LPZ	5 (4.5-5.5)	15	466 / 8	133 / 13	3000	560	84
AM2LS-0524SH30LPZ	5 (4.5-5.5)	24	466 / 8	83 / 8	3000	220	83
AM2LS-1205SH30LPZ	12 (10.8-13.2)	5	196 / 8	400 / 40	3000	2400	84
AM2LS-1209SH30LPZ	12 (10.8-13.2)	9	196 / 8	222 / 22	3000	1200	84
AM2LS-1212SH30LPZ	12 (10.8-13.2)	12	196 / 8	167 / 17	3000	1000	84
AM2LS-1215SH30LPZ	12 (10.8-13.2)	15	196 / 8	133 / 13	3000	560	84
AM2LS-1224SH30LPZ	12 (10.8-13.2)	24	196 / 8	83 / 8	3000	220	83
AM2LS-1505SH30LPZ	15 (13.5-16.5)	5	161 / 8	400 / 40	3000	2400	84
AM2LS-1509SH30LPZ	15 (13.5-16.5)	9	161 / 8	222 / 22	3000	1200	84
AM2LS-1512SH30LPZ	15 (13.5-16.5)	12	161 / 8	167 / 17	3000	1000	84
AM2LS-1515SH30LPZ	15 (13.5-16.5)	15	161 / 8	133 / 13	3000	560	84
AM2LS-1524SH30LPZ	15 (13.5-16.5)	24	161 / 8	83 / 8	3000	220	83
AM2LS-2405SH30LPZ	24 (21.6-26.4)	5	98 / 8	400 / 40	3000	2400	83
AM2LS-2409SH30LPZ	24 (21.6-26.4)	9	98 / 8	222 / 22	3000	1200	84
AM2LS-2412SH30LPZ	24 (21.6-26.4)	12	98 / 8	167 / 17	3000	1000	85
AM2LS-2415SH30LPZ	24 (21.6-26.4)	15	98 / 8	133 / 13	3000	560	85
AM2LS-2424SH30LPZ	24 (21.6-26.4)	24	98 / 8	83 / 8	3000	220	83

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, 15Vin	> -0.7	21	VDC
	Maximum duration 1s, 24Vin	> -0.7	30	VDC
Input reflected ripple current		30		mA

Isolation Specification

Parameters	Conditions	Typical	Maximum	Units
Tested I/O voltage	60 sec, leakage ≤ 1mA	>1500		VDC
	60 sec, leakage ≤ 1mA for H30 models	>3000		VDC
Resistance	500VDC	>1000		MΩ
Capacitance	100kHz/0.1V	20		pF

Output Specification

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy	See output voltage tolerance	10	16	%
Line regulation	Per 1% Vin change		1.2	%
Load regulation	10-100% load, 5Vout	9	15	%
	10-100% load, 7Vout	8	12	%
	10-100% load, 9Vout	8	10	%
	10-100% load, 12Vout	7	10	%
	10-100% load, 15Vout	6	10	%
	10-100% load, 24Vout	6	10	%
Temperature coefficient		±0.02		%/°C
Ripple & Noise*		50	150	mV pk-pk
Minimum load**		10		%

* Ripple and Noise are measured at 20MHz bandwidth. Please refer to the application note for specific details.
** If the required power is less than 1% of the rated converter output, connect a bleeder resistor in parallel with the load to satisfy the minimum load requirement.

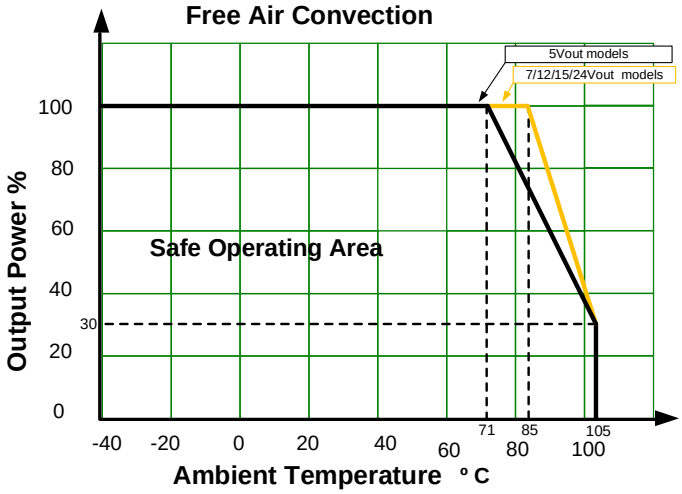
General Specifications

Parameters	Conditions	Typical	Maximum	Units
Switching frequency	Full load	260		KHz
Short circuit protection	Continuous, Auto recovery			
Operating temperature	With derating at 71°C, see derating graph	-40 to +105		°C
Storage temperature		-55 to +125		°C
Maximum Case temperature		130		°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	>5	95	% RH
Moisture sensitivity level	Level 1			
Case material	Black plastic (flammability to UL 94V-0)			
Weight		1.6		g

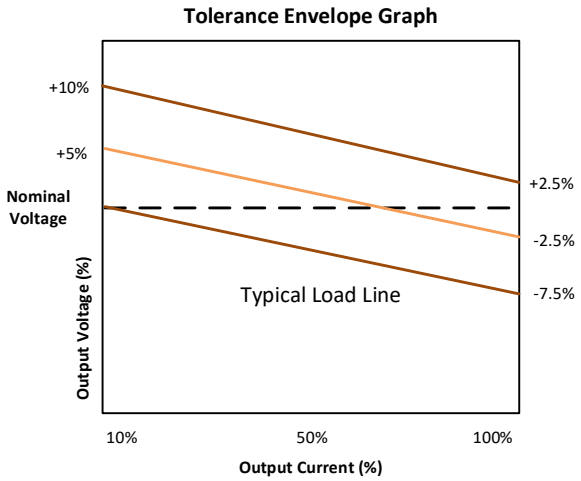
Dimensions (L x W x H)		0.53 x 0.43 x 0.29 inches (13.50 x 11.00 x 7.25 mm)
MTBF	3 500 000 hrs (MIL-HDBK -217F, t=+25°C) / Full Load	
NOTE: All specifications in this datasheet are measured at an ambient temperature of 25°C, humidity<75%, nominal input voltage and at rated output load unless otherwise specified.		

Safety Specifications		
Parameters		
Standards	Information technology Equipment	Designed to meet IEC/EN/UL62368-1
	EMC - Conducted and radiated emission	CISPR32 / EN55032, class B with the recommended EMI circuit
	Electrostatic Discharge Immunity	IEC 61000-4-2 Air ±8KV, Contact ±4KV, Criteria B

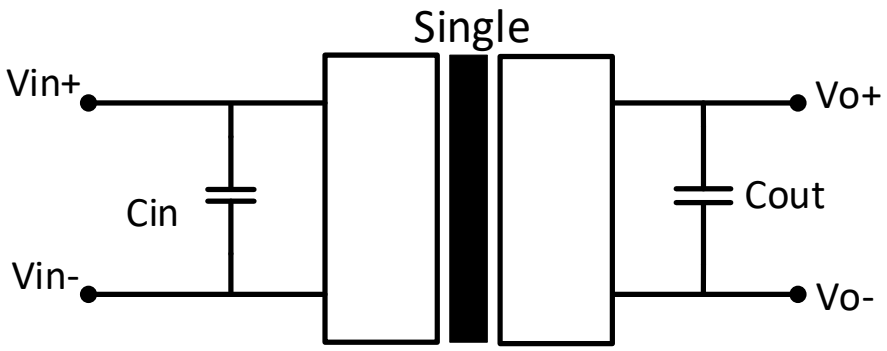
Derating



Output voltage tolerance

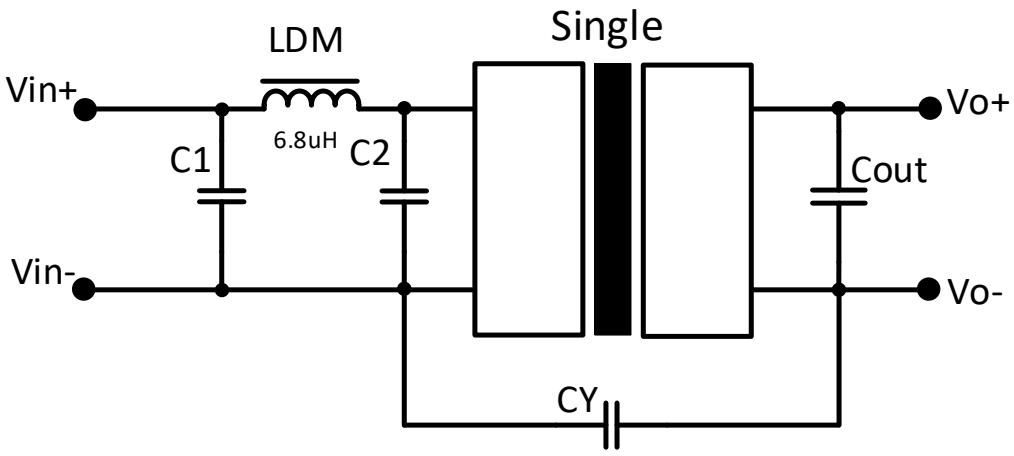


Typical application circuit



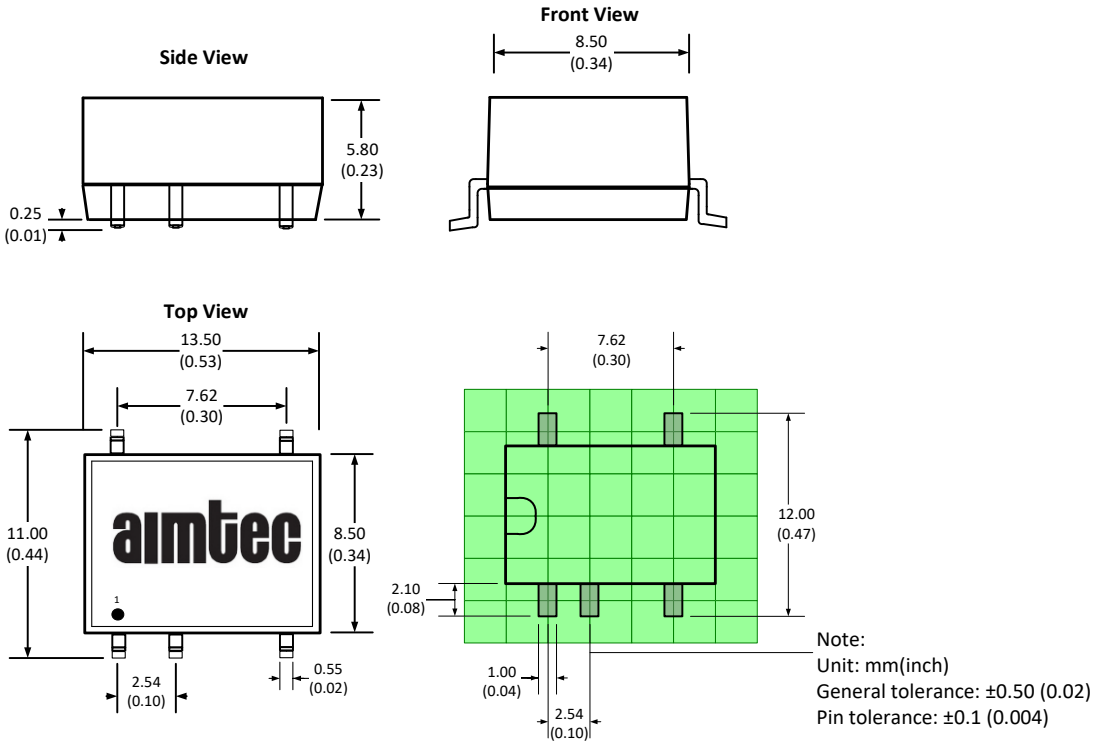
Vin	Cin	Vout	Cout
5	4.7μF/16V	5V	10μF/16V
12	2.2μF/25V	9V/12V	2.2μF/25V
15	1μF/25V	15V	1μF/25V
24	1μF/50V	24V	0.47μF/50V

EMI Recommended circuit



Vin	C1/C2	CY
5V/12V/15V/24V	4.7μF/50V	270pF/2kVdc (1.5kVdc isolation models) 270pF/4kVdc (3kVdc isolation models)

Dimensions



Note:
Unit: mm(inch)
General tolerance: ±0.50 (0.02)
Pin tolerance: ±0.1 (0.004)

Pin Out Specifications	
Pin	Single
1	-V Input
2	+V Input
3	-
4	-V Output
5	+V Output
6	-
7	-
8	NC

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