Click to ORDER samples

AM1LS-LPVZ

SMD

The new AM1LS-LPVZ is a DC/DC converter that offers much greater cost effectiveness due to material normalization and production automation which increases the reliability and performance of this new component. Offering a commercial input voltage range of 5VDC and an output voltage range from 3.3-24V, 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 100°C. It also features an isolation of 3000VDC for improved reliability and system safety. Furthermore, a higher MTBF of 3500,000h and output short circuit protection (OSCP) come standard with the series.

The AM1LS-LPVZ is suitable for information technology, instrumentation, industrial applications, communication and civil applications.

Features

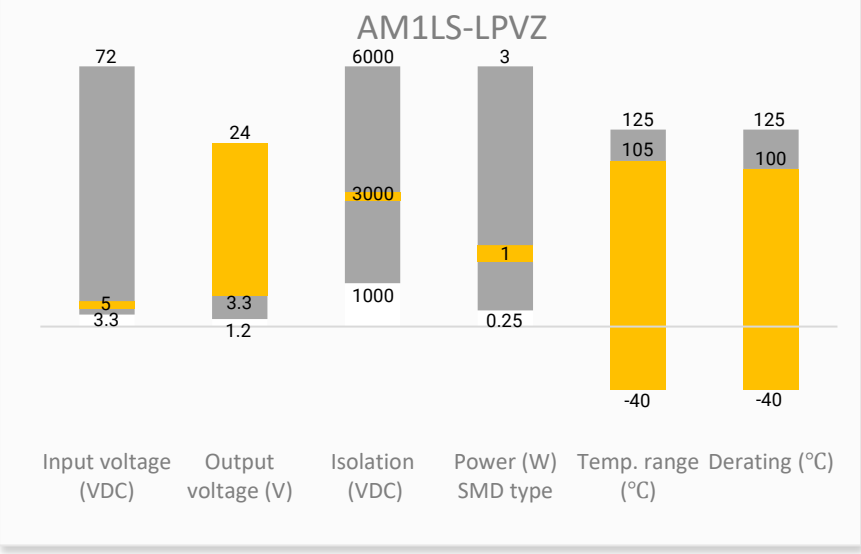
- No load input current as low as 3mA
- Operating Temp: -40 °C to +105 °C
- High I/O isolation voltage: 3000 VDC
- Output short circuit protection
- High efficiency up to 85%
- SMD type package, Industry standard pin-out

RoHS

3yr Warranty

CE

Summary



Training

Product Training Video (click to open)

Press Release

Coming Soon!

Application Notes

Applications

IoT

Industrial

Telecom

Instrumentation

Models & Specifications

Single Output

Model	Input Voltage (VDC)	Output Voltage (VDC)	Input Current Max (mA)		Output Current (mA)		Isolation (VDC)	Maximum Capacitive Load (µF)	Efficiency Full Load Typ. (%)
			No Load	Full Load	No Load	Full Load			
AM1LS-0503SH30LPVZ	5 (4.5-5.5)	3.3	5	270	30	303	3000	2400	74
AM1LS-0505SH30LPVZ	5 (4.5-5.5)	5	5	270	20	200	3000	2400	82
AM1LS-0509SH30LPVZ	5 (4.5-5.5)	9	12	241	12	111	3000	1000	83
AM1LS-0512SH30LPVZ	5 (4.5-5.5)	12	12	241	9	84	3000	560	83
AM1LS-0515SH30LPVZ	5 (4.5-5.5)	15	18	241	7	67	3000	560	83
AM1LS-0524SH30LPVZ	5 (4.5-5.5)	24	18	241	4	42	3000	220	85

Dual Output

Model	Input Voltage (VDC)	Output Voltage (VDC)	Input Current Max (mA)		Output Current (mA)		Isolation (VDC)	Maximum Capacitive Load (µF)	Efficiency Full Load Typ. (%)
			No Load	Full Load	No Load	Full Load			
AM1LS-0503DH30LPVZ	5 (4.5-5.5)	±3.3	5	270	±15	±151	3000	1200	74
AM1LS-0505DH30LPVZ	5 (4.5-5.5)	±5	5	270	±10	±100	3000	1200	82
AM1LS-0509DH30LPVZ	5 (4.5-5.5)	±9	12	241	±6	±56	3000	470	83
AM1LS-0512DH30LPVZ	5 (4.5-5.5)	±12	12	241	±5	±42	3000	220	83
AM1LS-0515DH30LPVZ	5 (4.5-5.5)	±15	18	241	±4	±34	3000	220	83

Input Specification

Parameters	Conditions	Typical	Maximum	Units
Filter	Capacitor			
Absolute maximum rating	Maximum duration 1s	> -0.7	9	VDC
Input reflected ripple current		15		mA

Output Specification

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy	See Typical Characteristic			
Line regulation	Per 1% Vin change, 3.3Vout models		±1.5	%
	Per 1% Vin change, Others		±1.2	%
Load regulation	10-100% load, 3.3Vout models	15	20	%
	10-100% load, 5Vout models	10	15	%
	10-100% load, 9Vout models	9	10	%
	10-100% load, 12Vout models	8	10	%
	10-100% load, 15Vout models	7	10	%
	10-100% load, 24Vout models	6	10	%
Temperature coefficient	Full load	±0.03		%/ °C
Ripple & Noise*	24Vout models	50	100	mV pk-pk
	others	30	75	mV pk-pk

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

Isolation Specification

Parameters	Conditions	Typical	Maximum	Units
Tested I/O voltage	60 sec, 1mA max	>3000		VDC
Resistance	Input to output resistance at 500Vdc	>1000		MOhm
Capacitance	Input to output, 100KHz/0.1V	20		pF

General Specifications

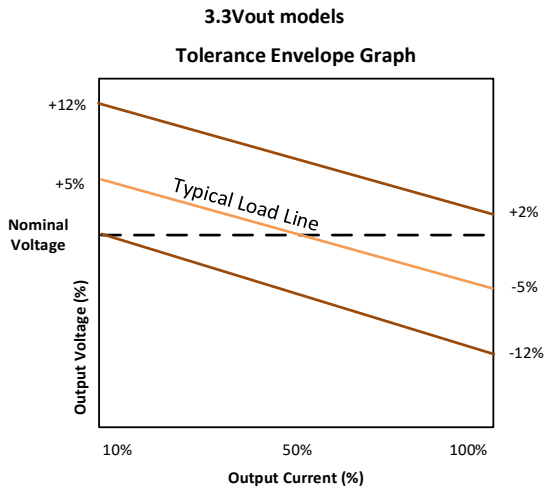
Parameters	Conditions	Typical	Maximum	Units
Switching frequency	Full load, nominal input voltage	270		KHz
Operating temperature	See derating graph	-40 to +105		°C
Storage temperature		-55 to +125		°C
Case temperature rise	Ambient temp 25°C, 3.3Vout models	25		°C
	Ambient temp 25°C, others	15		°C
Reflow Temperature	Maximum duration ≤60s over 217°C.		245	°C
Lead-free reflow solder process	IPC/JEDEC J-STD-020D.1			
Short circuit protection	Continuous, auto-recovery			
Cooling	Free air convection			
Vibration	10-150Hz, 5G, 0.75mm, along all axis			
Humidity	Non-condensing		95	% RH
Case material	Heat resistant black Plastic (flammability to UL 94V-0)			
Weight		1.6		g
Dimensions (L x W x H)	0.60 x 0.45 x 0.29inches (15.24 x 11.40 x 7.25mm)			
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		

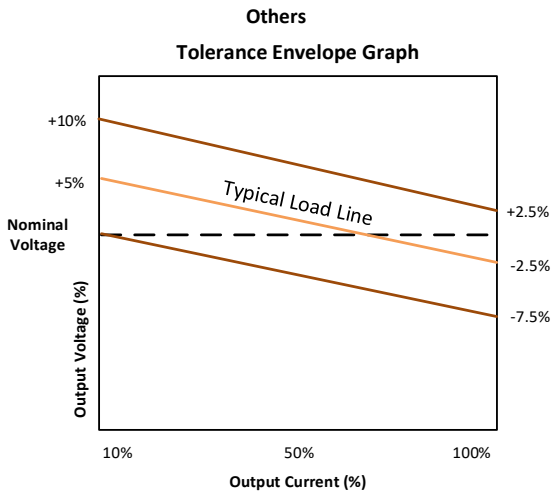
All specifications in this datasheet are measured at an ambient temperature of 25°C, humidity<75%, nominal input voltage and at rated output load unless otherwise specified.

Safety Specifications

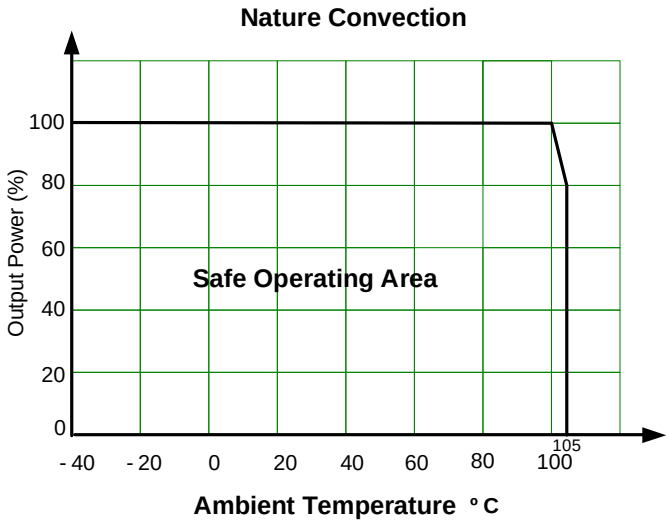
Parameters		
Standards	Design to meet IEC62368-1/UL62368-1/EN62368-1	
	EMC - Conducted and radiated emission	CISPR32/EN55032, Class B the recommended EMI circuit
	Electrostatic Discharge Immunity	IEC 61000-4-2 Air ±8KV, Contact ±4KV, Criteria B

Typical Characteristic

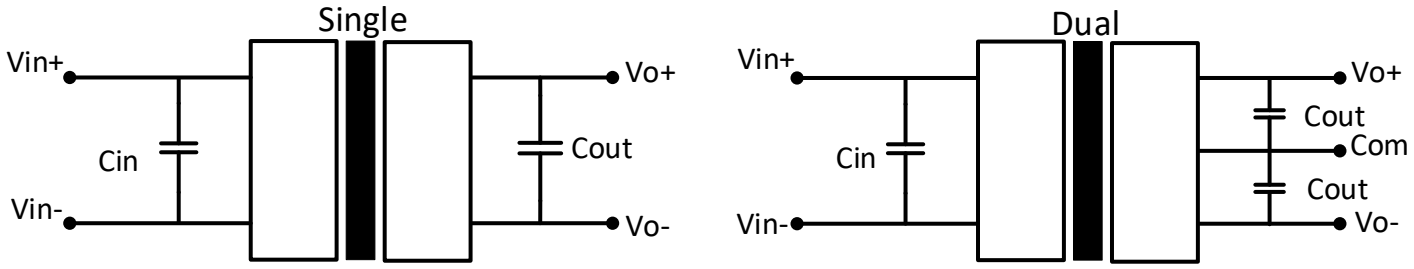




Derating

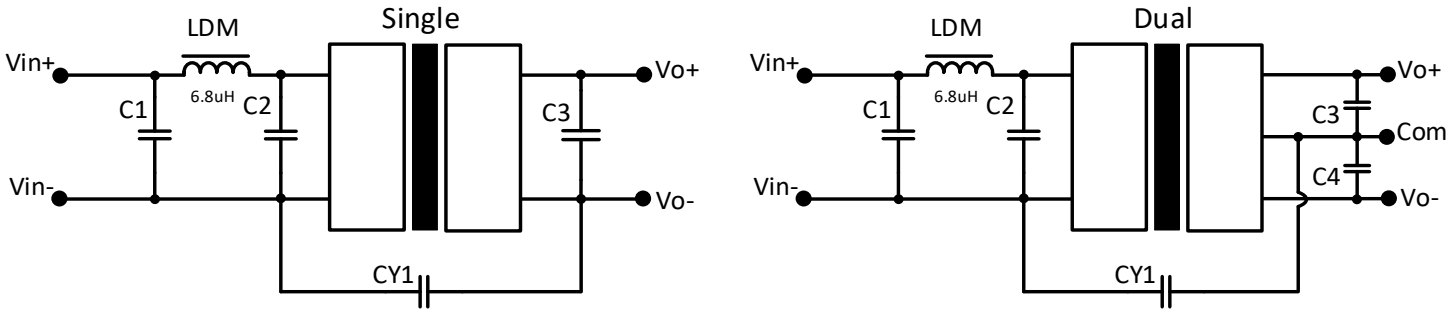


Typical Application Circuit



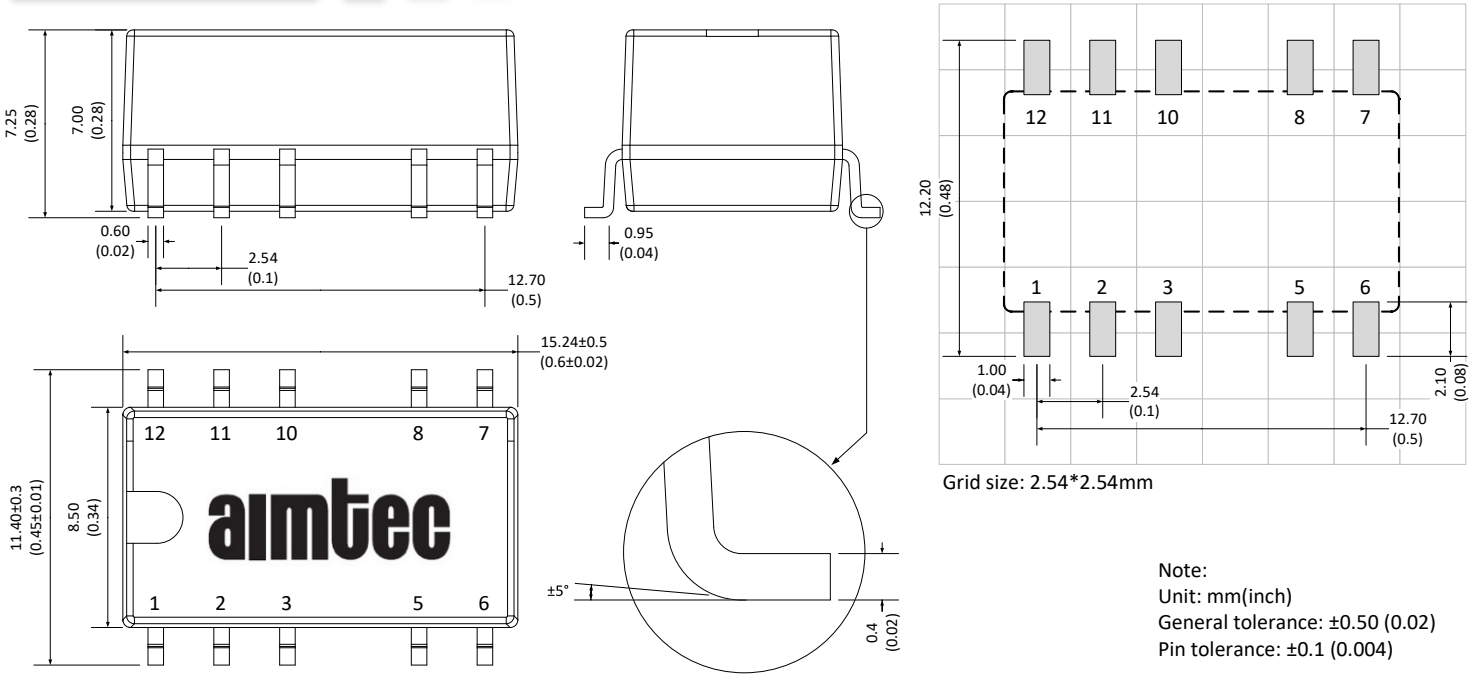
Cin	Vout	Cout
4.7 µF/16V	3.3 V	10µF/16V
	5 V	10µF/16V
	9 V	4.7µF/16V
	12 V	2.2µF/25V
	15 V	1µF/25V
	24V	0.47µF/50V

EMI Recommended Circuit



Output voltage	C1/C2	C3/C4	CY1
3.3V	4.7µF/50V	Refer to Cout in typical circuit	N/C
5V			N/C
9V			1nF/4KV
12V			1nF/4KV
15V			1nF/4KV
24V			1nF/4KV

Dimensions



Grid size: 2.54*2.54mm

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

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