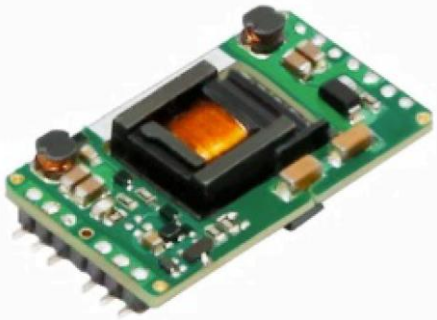
Click to ORDER samples

AM6LOW-LPZ



SMD Package

The AM6LOW-LPZ is a 6W SMD DC/DC converter that offers great cost savings thanks to an improved manufacturing process. It also features excellent reliability and performance while offering an ultra-wide input voltage range of 6-42VDC 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 85°C. It also offers an isolation of 3000VDC for improved reliability and system safety as well as a great 1,000,000h MTBF come standard.

The AM6LOW-LPZ is suitable for instrumentation, industrial controls, industrial applications, communication and IoT applications.

Features

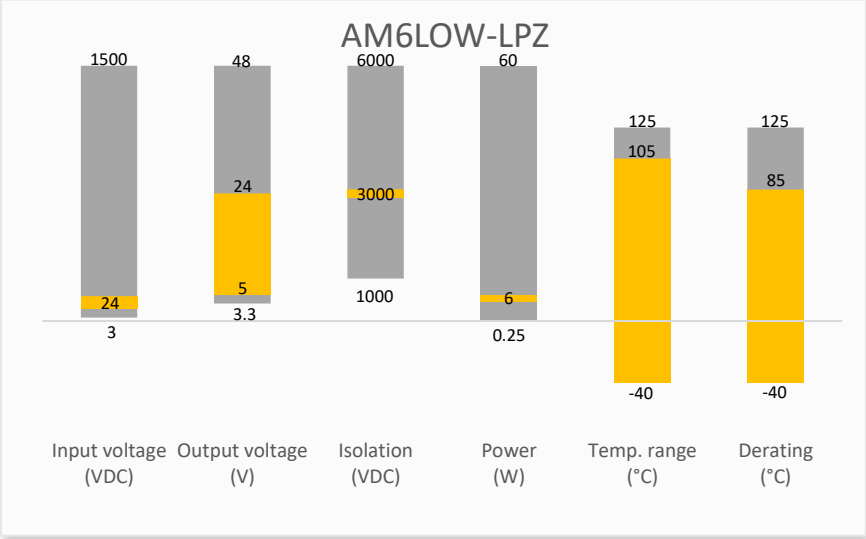
- High I/O Isolation of 3000VDC
- Continuous Short circuit protection
- Operating Temp: -40 °C to +105 °C
- Low height: 10.00mm
- Compact footprint and high-power density
- Efficiency up to 82%
- Regulated output

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 Vin<9V | Vin=9~42V (mA)	Isolation (VDC)	Maximum capacitive Load (µF)	Efficiency Typ. (%)
AM6LOW-2405SH30LPZ	24 (6-42)	5	321 / 8	960 / 1200	3000	1000	78
AM6LOW-2412SH30LPZ	24 (6-42)	12	321 / 8	400 / 500	3000	470	80
AM6LOW-2415SH30LPZ	24 (6-42)	15	321 / 8	320 / 400	3000	220	80
AM6LOW-2424SH30LPZ	24 (6-42)	24	321 / 8	200 / 250	3000	100	82

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

Input Specification

Parameters	Conditions	Typical	Maximum	Units
Filter	Capacitor			
Input voltage maximum*			45	VDC
Absolute maximum rating	Maximum duration 1s	> -0.7	50	VDC
Input reflected ripple current		30		mA
Start-up voltage			6	VDC
Under voltage protection		4.5		VDC

*Permanent damage to the converter may be caused if the maximum input voltage is exceeded.

Isolation Specification

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

Output Specification

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy	5-100% load	±1	±3	%
Line regulation	Vin min ~ Vin max	±0.2	±0.5	%
Load regulation	5-100% load	±0.5	±1	%
Ripple & Noise*		60	150	mV pk-pk
Temperature coefficient	Full load		±0.03	%/°C
Transient recovery time	25% load step change	300	500	µS
Transient response deviation	25% load step change, 5V output model	±4	±8	%
	25% load step change, others	±3	±5	%

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

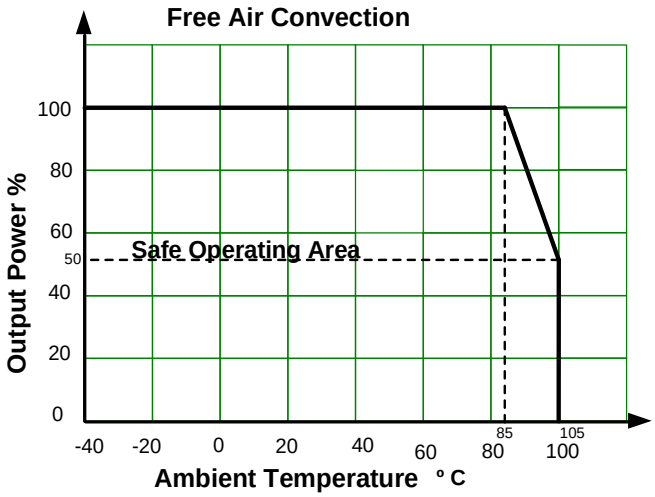
General Specifications

Parameters	Conditions	Typical	Maximum	Units
Switching frequency	Full load, nominal input	300		KHz
Short circuit protection	Continuous, Auto recovery			
Over current protection	Nominal input	>110	300	%Iout

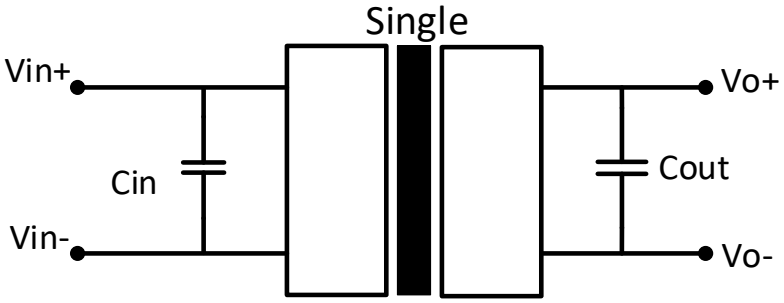
Over voltage protection		>110	160	% Vout
Operating temperature	With derating at 85°C	-40 to +105		°C
Storage temperature		-55 to +125		°C
Maximum soldering temperature	1.5mm from case for 10 sec.		300	°C
Cooling	Free air convection			
Humidity	Non-condensing	>5	95	% RH
Weight		7.9		g
Dimensions (L x W x H)		1.72 x 0.91 x 0.40 inches (43.60 x 23.00 x 10.00 mm)		
MTBF	1 000 000 hrs (MIL-HDBK -217F, t=+25ºC) / 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 UL/EN/IEC 62368-1
	EMC - Conducted and radiated emission	CISPR32 / EN55032, class A

Derating

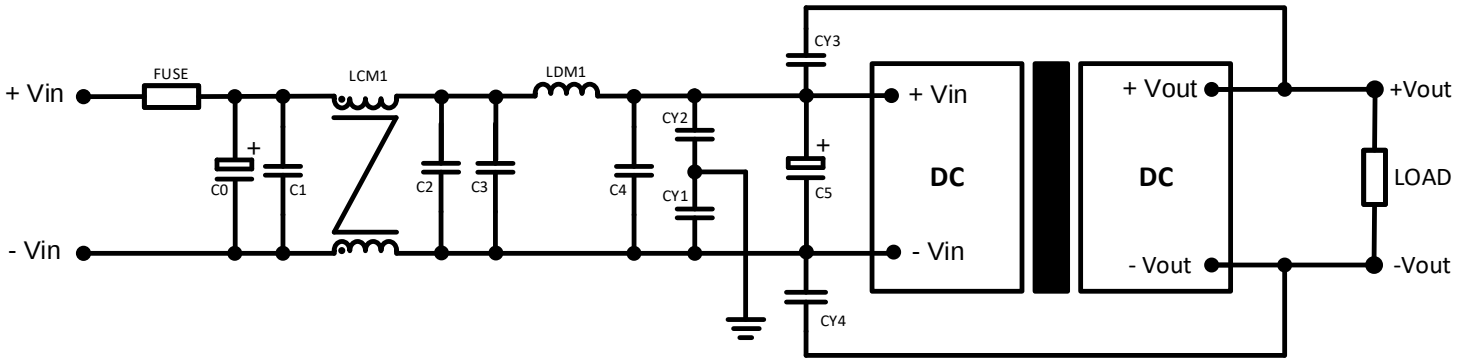


Typical application circuit



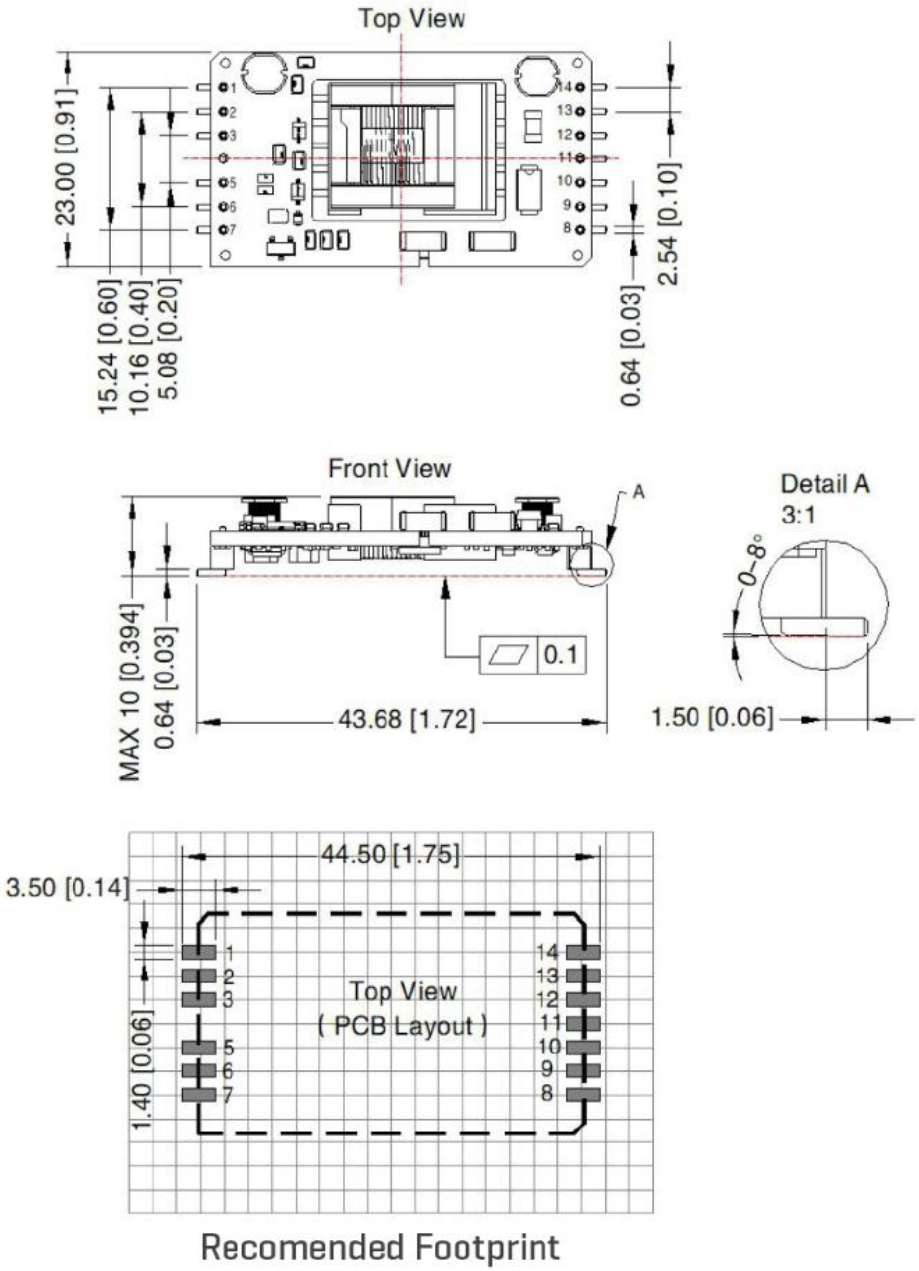
Vin	Cin	Cout
5	100µF/63V	220µF, 16V
12	100µF/63V	220µF, 35V
15	100µF/63V	220µF, 35V
24	100µF/63V	100µF, 35V

EMI Recommended circuit



Component	LCM1	LDM1	C0	C1…C4	C5	CY1, CY2	CY3, CY4
Spec	1mH	4.7µH	680µF, 63V	10µF, 100V	82µF,100V	100pF, 400VAC	2200pF, 400VAC

Dimensions



Recomended Footprint

* Unless otherwise specified unit: mm [inch]
* General tolerance: ±0.50 [±0.020]
* Pin thickness: ±0.10 [±0.004]
* Footprint grid 2.54 x 2.54 mm

Pin Out Specifications	
Pin	Single
1, 2, 3	V Input
4	No Pin
5, 6, 7	GND
8, 9, 12	No Connection
10, 11	-V Output
13, 14	+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.