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AM1SR-LPZ



SIP4 Package

The AM1SR-LPZ is a 0.75W SIP4 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 3.3-24VDC as well as an output voltage of 3.3-15V. This compact SIP4 design will surely benefit your new system design.

This new series offers great operating temperatures, from -40 to 85°C with full power up to 71°C. Also, an isolation of 1500VDC for improved reliability and system safety as well as a great 3,500,000h MTBF come standard.

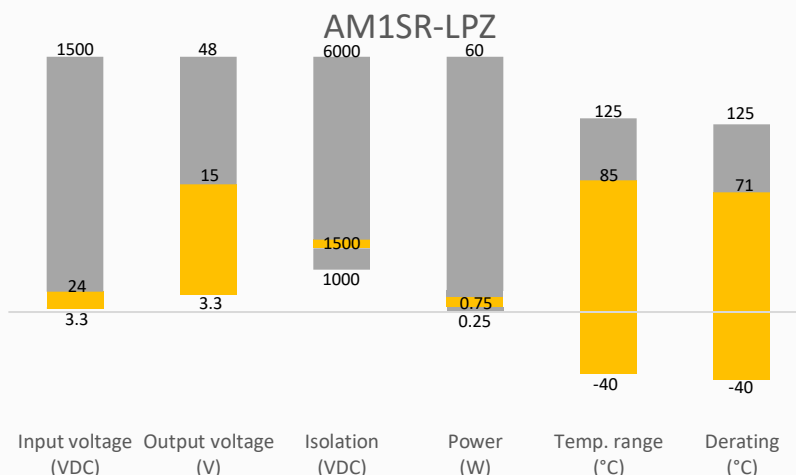
The AM1SR-LPZ is suitable for instrumentation, industrial controls, communication and IoT applications.

Features

- High I/O Isolation of 1500VDC
- Continuous Short circuit protection
- Operating Temp: -40 °C to +85 °C
- Industry standard SIP4 pin-out
- Efficiency up to 74%
- Regulated output



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)	Output Current max (mA)	Isolation (VDC)	Maximum capacitive Load (μF)	Efficiency Typ. (%)
AM1SR-0303SLPZ	3.3 (3.14-3.46)	3.3	200	1500	2400	66
AM1SR-0503SLPZ	5 (4.75-5.25)	3.3	200	1500	2400	68
AM1SR-0505SLPZ	5 (4.75-5.25)	5	150	1500	2400	72
AM1SR-0512SLPZ	5 (4.75-5.25)	12	62	1500	560	73
AM1SR-0515SLPZ	5 (4.75-5.25)	15	50	1500	560	74
AM1SR-1203SLPZ	12 (11.4-12.6)	3.3	200	1500	2400	68
AM1SR-1205SLPZ	12 (11.4-12.6)	5	150	1500	2400	72
AM1SR-1212SLPZ	12 (11.4-12.6)	12	62	1500	560	73
AM1SR-1215SLPZ	12 (11.4-12.6)	15	50	1500	560	74
AM1SR-2403SLPZ	24 (22.8-25.2)	3.3	200	1500	2400	68
AM1SR-2405SLPZ	24 (22.8-25.2)	5	150	1500	2400	72
AM1SR-2412SLPZ	24 (22.8-25.2)	12	62	1500	560	73
AM1SR-2415SLPZ	24 (22.8-25.2)	15	50	1500	560	74

Input Specification

Parameters	Conditions	Typical	Maximum	Units
Input current	Full load, 3.3Vin	379		mA
	Full load, 5Vin	209		mA
	Full load, 12in	89		mA
	Full load, 24Vin	45		mA
	No load, 3.3Vin	15		mA
	No load, 5Vin	13		mA
	No load, 12in	8		mA
	No load, 24Vin	4		mA
Filter	Capacitor			
Input reflected ripple current		15		mA

Isolation Specification

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

Output Specification

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy			±3	%
Line regulation	Per 1% Vin change		±0.25	%
Load regulation**	10-100% load, 3.3Vout		±3	%
	10-100% load, Others		±2	%
Ripple & Noise*	Vout=15V	80	150	mV pk-pk
	Others	50	100	mV pk-pk

Temperature coefficient	Full load	±0.02		%/°C
Hot Plug			None	
* Ripple and Noise are measured at 20MHz bandwidth. Please refer to the application note for specific details.				
** Operating with less than 10% of rated load will not cause permanent damage to the converters, but the performances data may not fall into the specifications.				

General Specifications

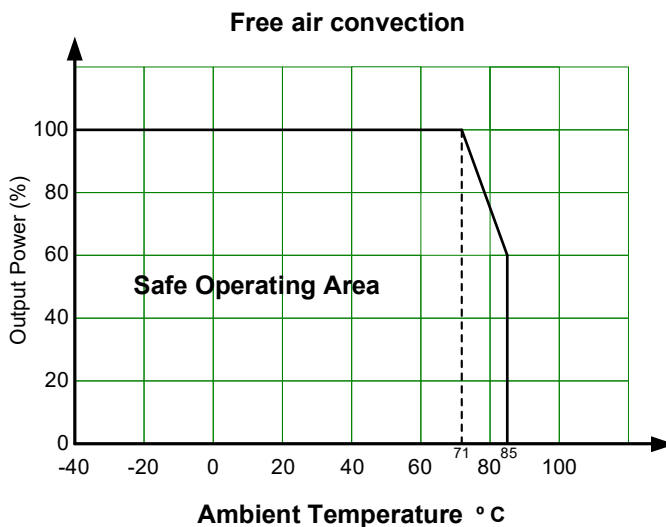
Parameters	Conditions	Typical	Maximum	Units
Switching frequency	Full load	220		KHz
Short circuit protection	Continuous, Auto recovery			
Operating temperature	With derating	-40 to +85		°C
Storage temperature		-55 to +125		°C
Case temperature rise	Full load	25		°C
Pin soldering temperature	1.5mm away from case for 10 sec		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 (UL94-V0)			
Weight		1.3		g
Dimensions (L x W x H)	0.46 x 0.24 x 0.40 inches (11.60 x 6.00 x 10.20 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

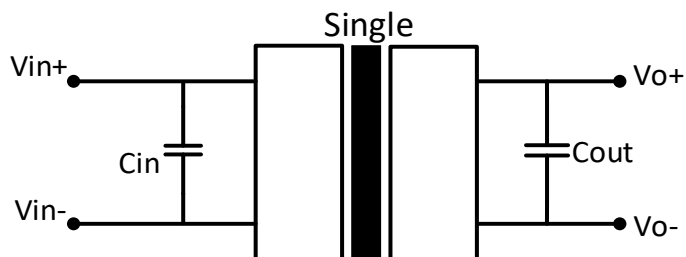
Parameters		
Standards	Information technology Equipment	Designed to meet UL/EN/IEC 62368-1
	EMC - Conducted and radiated emission	CISPR32 / EN55032, class B with the recommended EMC circuit
	Electrostatic Discharge Immunity	IEC/EN 61000-4-2 Air ±8KV, Contact ±6KV, Criteria B

Derating



Typical application circuit

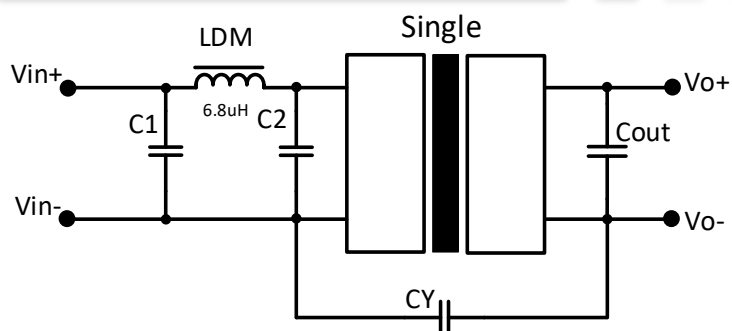
Typical application circuit is to further lower the input and output ripple. It is not mandatory.



V_{in}	C_{in}
3.3V	4.7 μ F/16V
5V	4.7 μ F/16V
12V	2.2 μ F/25V
24V	1 μ F/50V

V_{out}	C_{out}
3.3V	10 μ F/16V
5V	10 μ F/16V
12V	2.2 μ F/25V
15V	1 μ F/25V

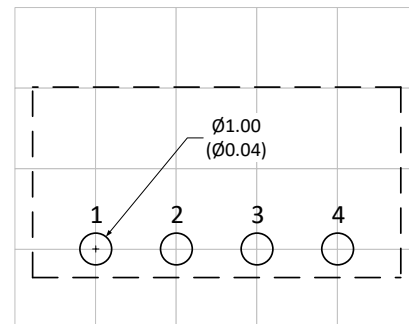
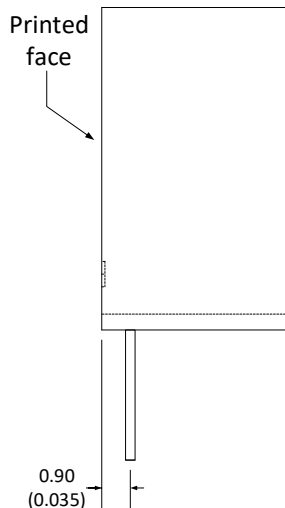
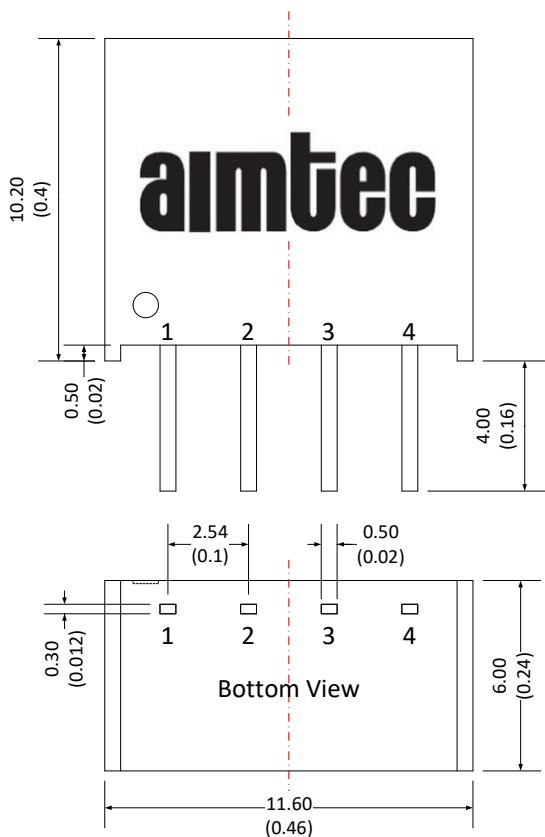
Recommended EMC circuit



$C1/C2$	CY
4.7 μ F/50V	1nF/2KV

C_{out} refer to "Typical application circuit"

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 output
1	-V Input
2	+V Input
3	-V Output
4	+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.