AM1MS-UZ

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DIP14 Package

The AM1MS-UZ is a 1W DIP14 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 4.5-5.5VDC as well as a single and a featured dual separated output voltage of 5V. This compact DIP14 design will surely benefit your new system design.

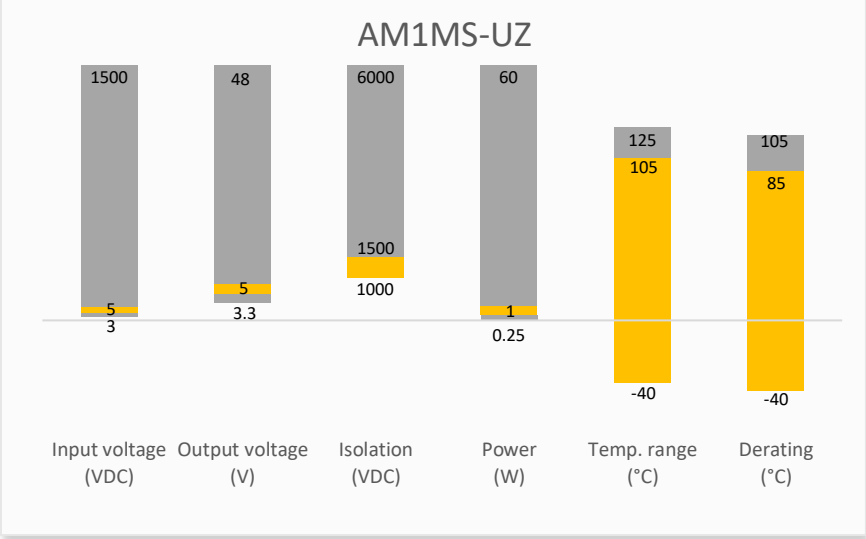
This new series offers great operating temperatures, from -40 to 105°C with full power up to 85°C. Also, an isolation of 1000 to 1500VDC for improved reliability and system safety as well as a great 3,500,000h MTBF come standard.

The AM1MS-UZ is suitable for instrumentation, industrial controls, industrial applications, communication and IoT applications.

Features

- High I/O Isolation of 1500VDC
- Continuous Short circuit protection
- Operating Temp: -40 °C to +105 °C
- Industry standard DIP14 pin-out
- Efficiency up to 84%
- Unregulated 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)	Input Current Full | No load typ. (mA)	Output Current max | min (mA)*	Isolation (VDC)	Maximum capacitive Load (µF)	Efficiency Typ. (%)
AM1MS-0505SUZ	5 (4.5-5.5)	5	286 / 10	200 / 20	1500	2400	82

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

Dual Separated 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. (%)
AM1MS-050505DUZ	5 (4.5-5.5)	5 / 5	250 / 30	100 / 10	100 / 10	1500	680	84

* 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 1sec	> -0.7	9	VDC
Input reflected ripple current		15		mA

Isolation Specification

Parameters	Conditions	Typical	Maximum	Units
Tested I/O voltage	60 sec, leakage ≤ 1mA	>1500		VDC
Tested O/O voltage	60 sec, leakage ≤ 1mA, dual output	>1000		VDC
Resistance	500VDC	>1000		MΩ
Capacitance	100kHz/0.1V, single output	20		pF
	100kHz/0.1V, dual output	40		pF

Output Specification

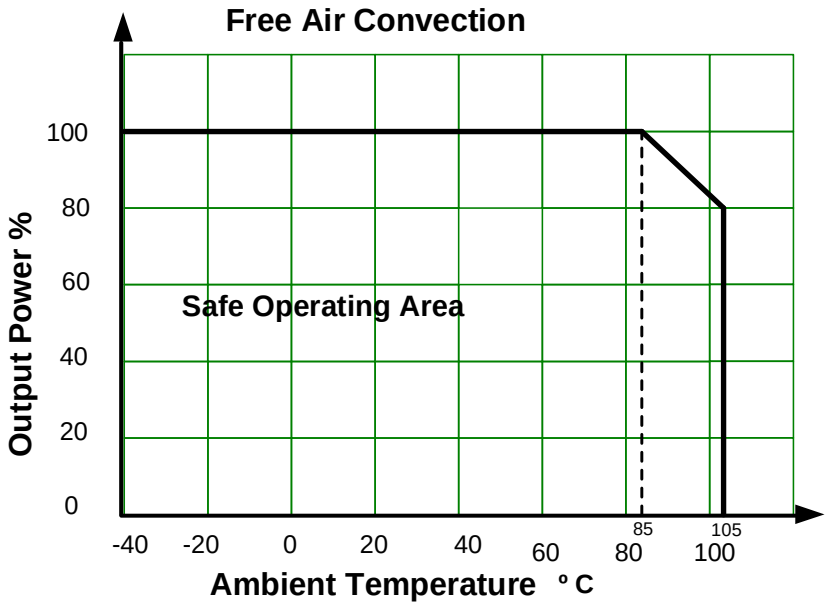
Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy	See output voltage tolerance	10		%
Line regulation	Per 1% Vin change		±1.2	%
Load regulation	10-100% load		15	%
Ripple & Noise*	20MHz bandwidth		75	mV pk-pk
Temperature coefficient	Full load, single output	±0.02		%/°C
	Full load, dual output	±0.03		%/°C
Minimum load		10		%

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

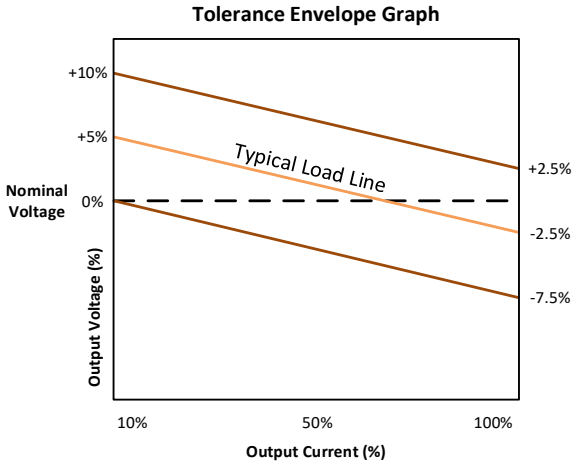
General Specifications				
Parameters	**Conditions**	**Typical**	**Maximum**	**Units**
Switching frequency	Full load, nominal input	270		KHz
Short circuit protection	Continuous, Auto recovery			
Operating temperature	With derating	-40 to +105		°C
Storage temperature		-55 to +125		°C
Case temperature rise	Ambient temperature at 25°C	15		°C
Manual soldering temperature	1.5mm away from case, duration ≤ 10sec		300	°C
Cooling	Free air convection			
Humidity	Non-condensing	>5	95	% RH
Case material	Black plastic (flammability to UL 94V-0)			
Weight	Single output	2.1		g
	Dual output	2.5		g
Dimensions (L x W x H)	0.80 x 0.40 x 0.32 inches (20.32 x 10.16 x 8.20 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	Design to meet IEC/EN/BS EN/UL62368-1
	EMC - Conducted and radiated emission	CISPR32 / EN55032, class B with the recommended EMI circuit
	Electrostatic Discharge Immunity	IEC/EN 61000-4-2 Contact ±4KV, Criteria B

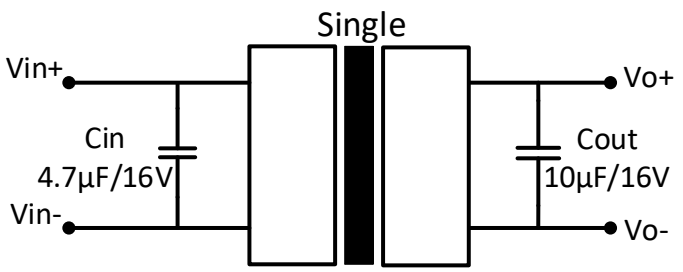
Derating

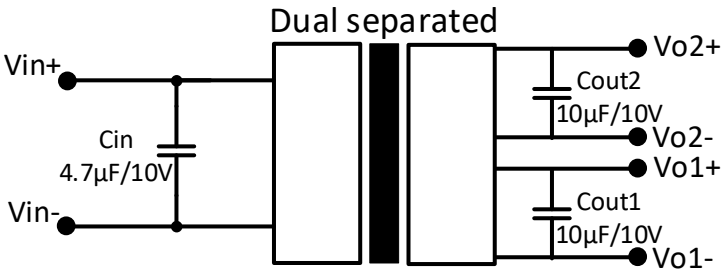


Output voltage tolerance

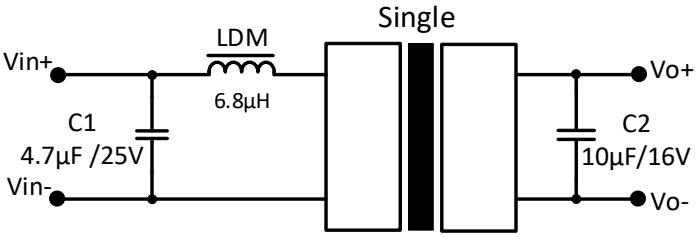


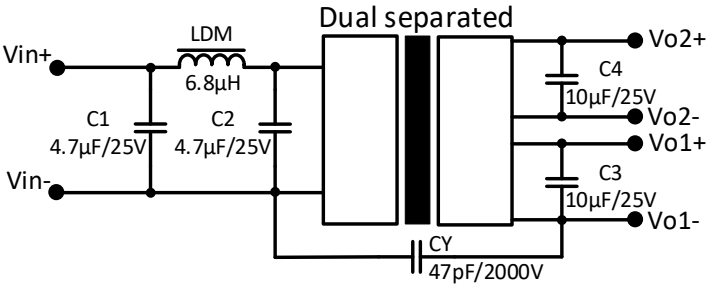
Typical application circuit



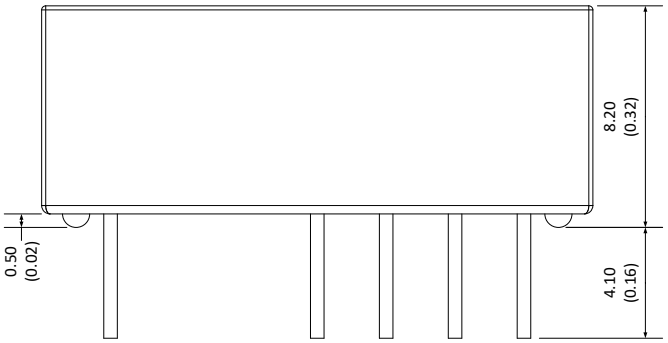


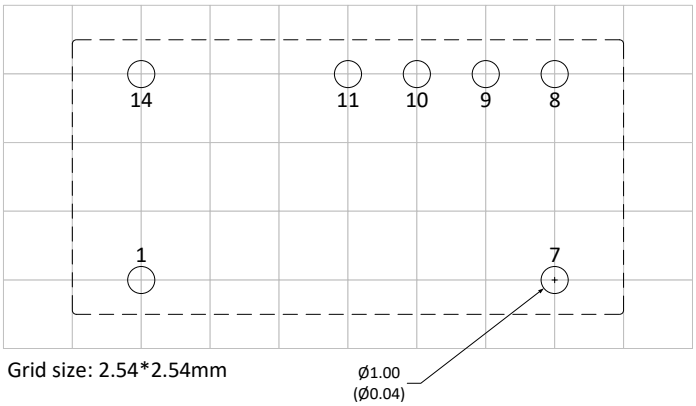
Recommended EMI circuit



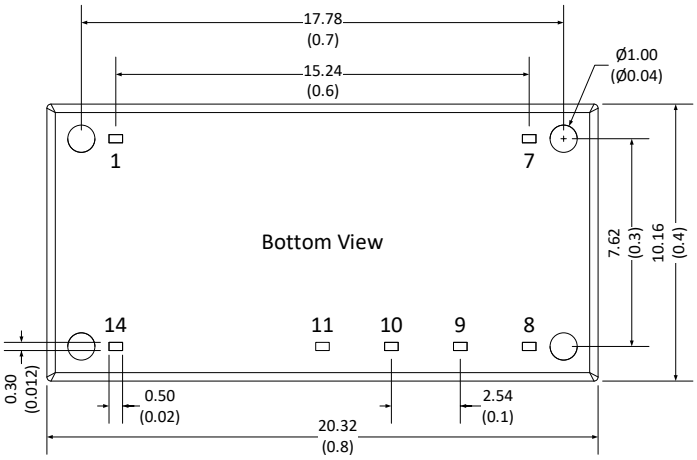


Dimensions





Grid size: 2.54*2.54mm



Pin Out Specifications		
Pin	Single output	Dual output
1	-V Input	-V Input
7	NC	NC
8	-V Output	+V Output1
9	+V Output	-V Output1
10	No pin	+V Output2
11	No pin	-V Output2
14	+V Input	+V Input

Note:
Unit: mm(inch)
General tolerance: ±0.25 (0.01)
Pin tolerance: ±0.1 (0.004)

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

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