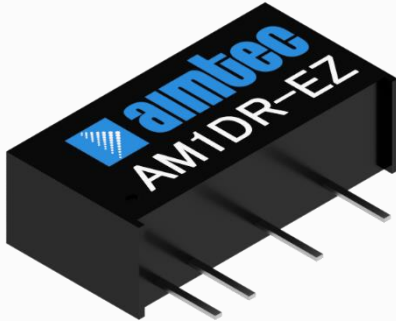


## AM1DR-EZ

Click to  
**ORDER**  
samples



SIP7 Package

The AM1DR-EZ is a 1W SIP7 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 5-24VDC as well as an output voltage of 3.3-12V. This compact SIP7 design will surely benefit your new system design.

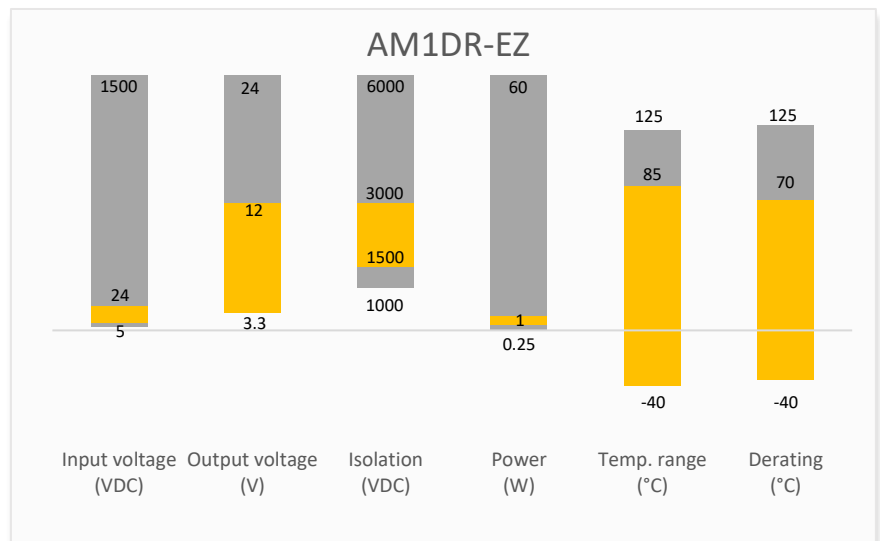
This new series offers great operating temperatures, from -40 to 85°C with full power up to 70°C. Also, an isolation of 1500 or 3000VDC improves reliability and system safety and a 1,500,000h MTBF comes standard.

The AM1DR-EZ is suitable for instrumentation, industrial controls, industrial applications, communication and IoT applications.

## Features

- High I/O Isolation of 1500/3000VDC
- Continuous Short circuit protection
- Operating Temp: -40 °C to +85 °C
- Industry standard SIP7 pin-out
- Efficiency up to 73%
- 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 (mA)	Isolation (VDC)	Maximum capacitive Load (μF)	Efficiency Typ. (%)
AM1DR-0503SEZ	5 (4.75-5.25)	3.3	250	1500	2400	67
AM1DR-0505SEZ	5 (4.75-5.25)	5	200	1500	2400	70
AM1DR-0509SEZ	5 (4.75-5.25)	9	111	1500	1000	71
AM1DR-0512SEZ	5 (4.75-5.25)	12	84	1500	560	72
AM1DR-1203SEZ	12 (11.4-12.6)	3.3	250	1500	2400	67
AM1DR-1205SEZ	12 (11.4-12.6)	5	200	1500	2400	70
AM1DR-1209SEZ	12 (11.4-12.6)	9	111	1500	1000	73
AM1DR-1212SEZ	12 (11.4-12.6)	12	84	1500	560	73
AM1DR-1503SEZ	15 (14.25-15.75)	3.3	250	1500	2400	69
AM1DR-1505SEZ	15 (14.25-15.75)	5	200	1500	2400	72
AM1DR-1509SEZ	15 (14.25-15.75)	9	111	1500	1000	73
AM1DR-1512SEZ	15 (14.25-15.75)	12	84	1500	560	73
AM1DR-2403SEZ	24 (22.8-25.2)	3.3	250	1500	2400	70
AM1DR-2405SEZ	24 (22.8-25.2)	5	200	1500	2400	72
AM1DR-2409SEZ	24 (22.8-25.2)	9	111	1500	1000	73
AM1DR-2412SEZ	24 (22.8-25.2)	12	84	1500	560	73
AM1DR-0503SH30EZ	5 (4.75-5.25)	3.3	250	3000	2400	67
AM1DR-0505SH30EZ	5 (4.75-5.25)	5	200	3000	2400	70
AM1DR-0509SH30EZ	5 (4.75-5.25)	9	111	3000	1000	71
AM1DR-0512SH30EZ	5 (4.75-5.25)	12	84	3000	560	72
AM1DR-1203SH30EZ	12 (11.4-12.6)	3.3	250	3000	2400	67
AM1DR-1205SH30EZ	12 (11.4-12.6)	5	200	3000	2400	70
AM1DR-1209SH30EZ	12 (11.4-12.6)	9	111	3000	1000	73
AM1DR-1212SH30EZ	12 (11.4-12.6)	12	84	3000	560	73
AM1DR-1503SH30EZ	15 (14.25-15.75)	3.3	250	3000	2400	69
AM1DR-1505SH30EZ	15 (14.25-15.75)	5	200	3000	2400	72
AM1DR-1509SH30EZ	15 (14.25-15.75)	9	111	3000	1000	73
AM1DR-1512SH30EZ	15 (14.25-15.75)	12	84	3000	560	73
AM1DR-2403SH30EZ	24 (22.8-25.2)	3.3	250	3000	2400	70
AM1DR-2405SH30EZ	24 (22.8-25.2)	5	200	3000	2400	72
AM1DR-2409SH30EZ	24 (22.8-25.2)	9	111	3000	1000	73
AM1DR-2412SH30EZ	24 (22.8-25.2)	12	84	3000	560	73

### Input Specification

Parameters	Conditions	Typical	Maximum	Units
Filter	Capacitor			
Voltage rating	Vo, Io Nom		±5%	VDC

### Isolation Specification

Parameters	Conditions	Typical	Maximum	Units
Tested I/O voltage	60 sec / 0.5mA, SEZ models	>1500		VDC
	60 sec / 0.5mA, SH30EZ models	>3000		VDC
Resistance	500VDC	>1000		MΩ

### Output Specification

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy	100% full load		±3	%
Line regulation	Per 1% Vin change		0.25	%
Load regulation	10-100% load		2	%
Ripple & Noise*			75	mV pk-pk
Transient response setting time	50% load step change	350		us

\* Ripple and Noise are measured at 20MHz bandwidth. Please refer to Typical test circuit.

### General Specifications

Parameters	Conditions	Typical	Maximum	Units
Switching frequency	Full load, nominal input, @5V Vin models	370		KHz
	Full load, nominal input, other Vin models	250		KHz
Short circuit protection	Continuous			
Operating temperature	With derating	-40 to +85		°C
Storage temperature		-55 to +125		°C
Cooling	Free air convection			
Humidity	Non-condensing		95	% RH
Case material	DAP			
Weight		2.1		g
Dimensions (L x W x H)	0.77 x 0.24 x 0.39 inches (19.50 x 6.00 x 10 mm)			
MTBF	1 500 000 hrs (MIL-HDBK -217F, t=+25°C)			

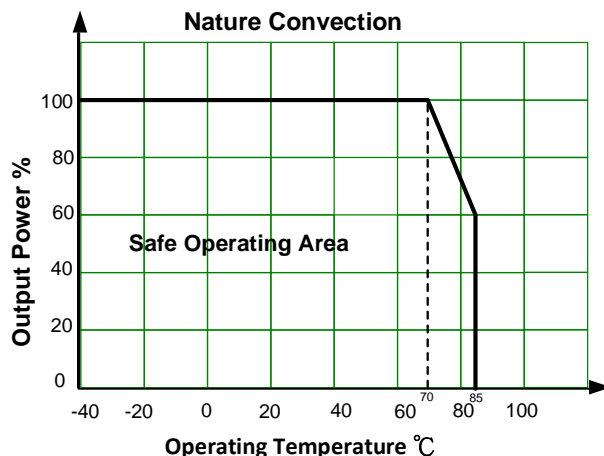
NOTE: All specifications in this datasheet are measured at an ambient temperature of 25°C, humidity<75%, nominal input voltage and at rated output load unless otherwise specified.

### Safety Specifications

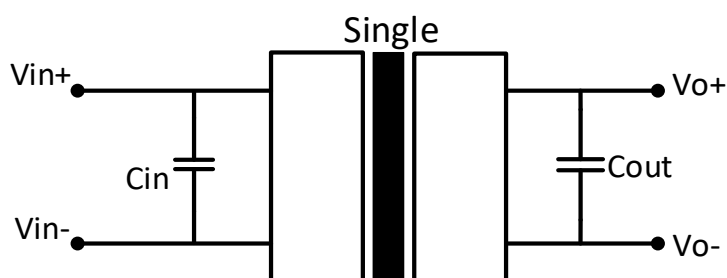
Parameters		
Standards	EMC - Conducted and radiated emission	CISPR32 / EN55032, class B with the recommended EMC circuit
	Electrostatic Discharge Immunity	IEC 61000-4-2 Air ±8KV, Contact ±6KV, Criteria B

## Derating

### Temperature Derating Graph



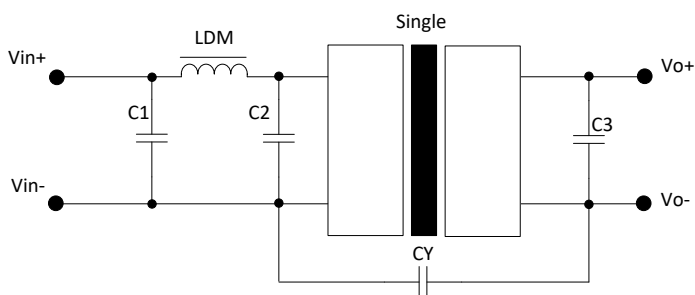
## Typical test circuit



Vin	Cin
5VDC	4.7μF/25V
12VDC	2.2μF/25V
15VDC	2.2μF/25V
24VDC	1μF/50V

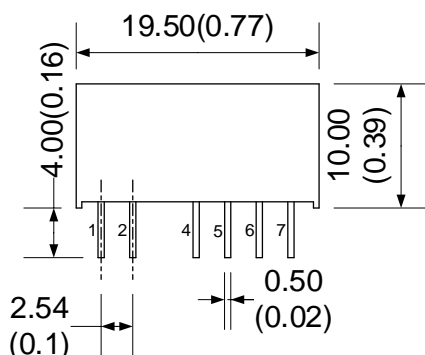
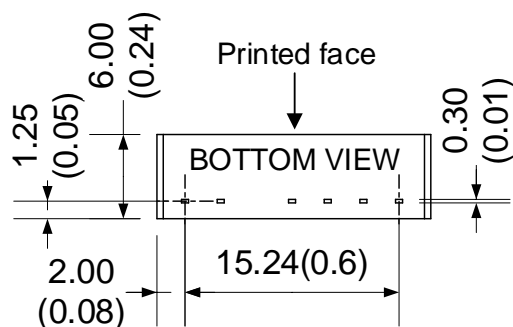
Single Vout	Cout
3.3VDC	10μF/16V
5VDC	10μF/16V
9VDC	2.2μF/16V
12VDC	2.2μF/25V

## Recommended EMC circuit



EMC recommended circuit value table	
C1	4.7μF/50V
C2	4.7μF/50V
C3	Refer Typical test circuit
LDM	6.8μH
CY	1nF/4kV

## Dimensions



Pin Out Specifications	
Pin	Single
1	+V Input
2	-V Input
3	No Pin
4	-V Output
5	No Pin
6	+V Output
7	No Pin

Note:

Unit: mm(inch)

General tolerances:  $\pm 0.25(\pm 0.010)$

**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](http://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](http://www.aimtec.com).