AM1DR-VZ

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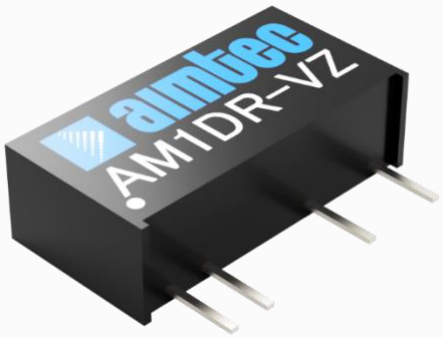


SIP7 Package

The AM1DR-VZ 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 12-24VDC as well as a regulated output voltage of 3.3-15V. This compact SIP7 design will surely benefit your new system design.

This series offers great operating temperatures, from -40 to 105°C with full power up to 85°C. Also, an isolation of 3000VDC for improved reliability and system safety as well as a great 3,500,000h MTBF come standard.

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

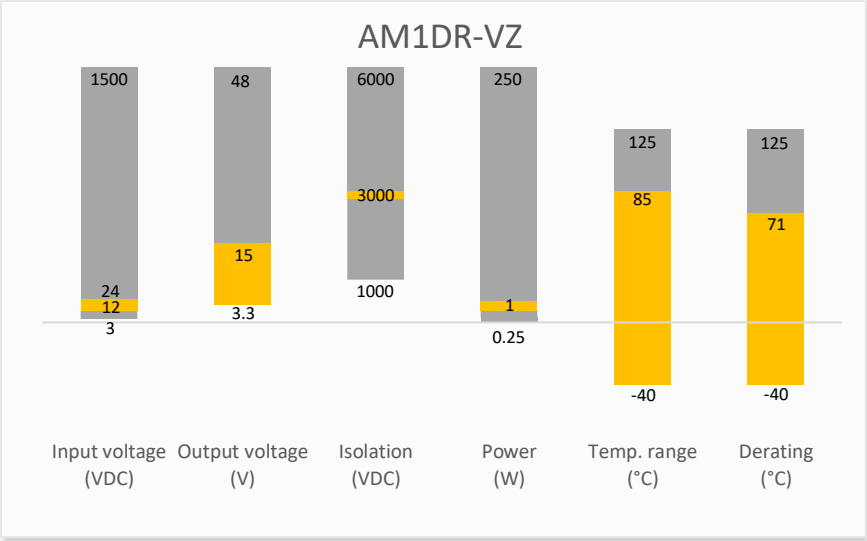
Features

- High I/O Isolation of 3000VDC
- Continuous Short circuit protection
- Operating Temp: -40 °C to +105 °C
- Industry standard SIP7 pin-out
- Efficiency up to 75%
- Regulated output

RoHS

3yr Warranty

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. (%)
AM1DR-1205SH30VZ	12 (11.4-12.6)	5	115 / 8	200 / 20	3000	2400	73
AM1DR-1209SH30VZ	12 (11.4-12.6)	9	115 / 8	111 / 12	3000	1000	73
AM1DR-1212SH30VZ	12 (11.4-12.6)	12	115 / 8	83 / 9	3000	560	73
AM1DR-1215SH30VZ	12 (11.4-12.6)	15	112 / 8	67 / 7	3000	560	75
AM1DR-1505SH30VZ	15 (14.25-15.75)	5	92 / 8	200 / 20	3000	2400	73
AM1DR-1515SH30VZ	15 (14.25-15.75)	15	89 / 8	67 / 7	3000	560	75
AM1DR-2403SH30VZ	24 (22.8-25.2)	3.3	59 / 8	250 / 25	3000	2400	71
AM1DR-2405SH30VZ	24 (22.8-25.2)	5	58 / 8	200 / 20	3000	2400	73
AM1DR-2409SH30VZ	24 (22.8-25.2)	9	58 / 8	111 / 12	3000	1000	73
AM1DR-2412SH30VZ	24 (22.8-25.2)	12	58 / 8	83 / 9	3000	560	73
AM1DR-2415SH30VZ	24 (22.8-25.2)	15	58 / 8	67 / 7	3000	560	73

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

Input Specification

Parameters	Conditions	Typical	Maximum	Units
Filter	Capacitor			
Input reflected ripple current		15		mA

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			±3	%
Line regulation	Per 1% Vin change		±0.25	%
Load regulation	10-100% load, 3.3Vout models		±3	%
	10-100% load, 5/9/12/15Vout models		±2	%
Ripple & Noise*	15Vout models	80	150	
	3.3/5/9/12Vout models	30	100	mV pk-pk
Temperature coefficient		±0.02		%/°C

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

General Specifications

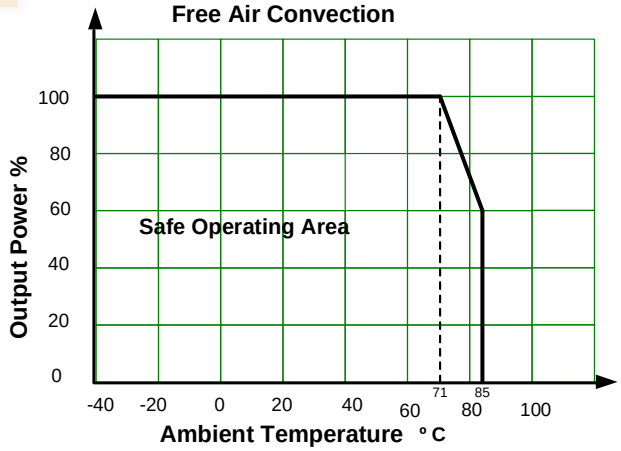
Parameters	Conditions	Typical	Maximum	Units
Switching frequency	Full load, nominal input	260		KHz
Short circuit protection	Continuous, Auto recovery			
Operating temperature	With derating	-40 to +85		°C
Storage temperature		-55 to +125		°C
Case temperature rise	Ta = 25°C	25		°C
Manual soldering temperature	1.5mm away from case, duration ≤ 10sec		300	°C
Cooling	Free air convection			
Humidity	Non-condensing	>5	95	% RH
Vibration	10-150Hz, 5G, 0.75mm, along all axis			
Case material	Black plastic (flammability to UL 94V-0)			
Weight		2.1		g
Dimensions (L x W x H)	0.77 x 0.24 x 0.40 inches (19.65 x 6.00 x 10.16 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.

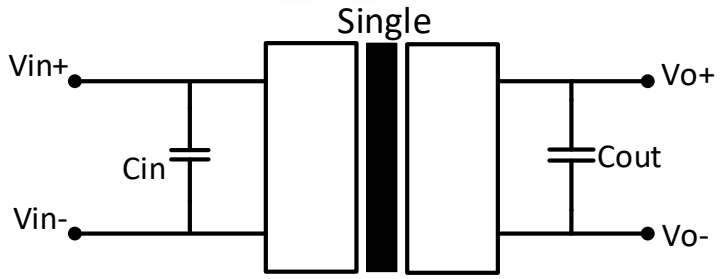
Safety Specifications

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

Derating

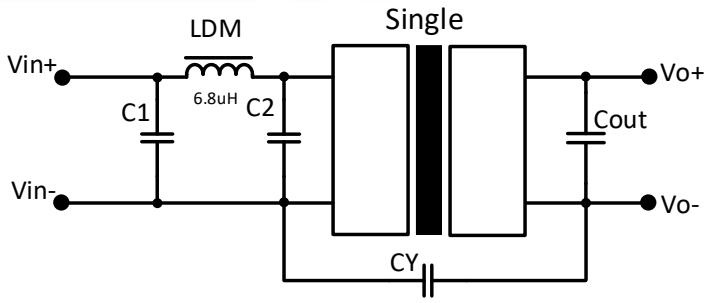


Typical application circuit



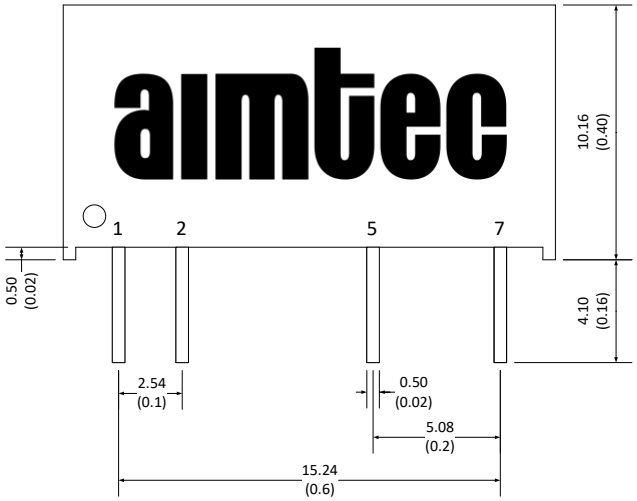
Vin	Cin	Single output models	
		Vout	Cout
12	2.2μF/25V	3.3V	10μF/16V
15	2.2μF/25V	5V	10μF/16V
24	1μF/50V	9V	2.2μF/16V
-	-	12V	2.2μF/25V
-	-	15V	1μF/25V

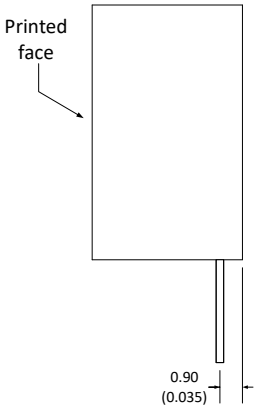
Recommended EMI circuit

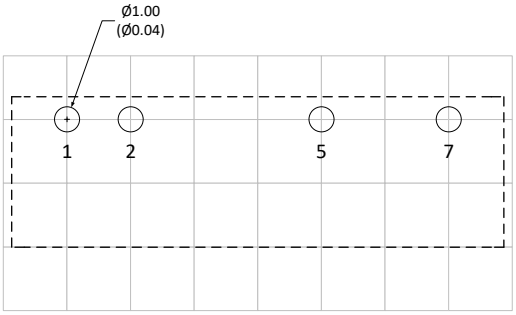


Vin	C1/C2	Vout	CY	Cout
12/15/24V	4.7μF/50V	All output	270pF/3kVdc	Refer to Cout in typical circuit

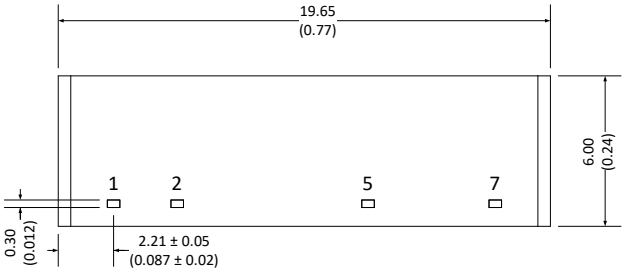
Dimensions







Grid size: 2.54*2.54mm



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

Pin Out Specifications	
Pin	Single output
1	+V Input
2	-V Input
5	-V Output
7	+V Output

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