aimtec
Your Power Partner

Series AM1DU-Z

1 Watt | DC-DC Converter

FEATURES:

- Wide input range 2:1
- Regulated output voltage
- Low ripple and noise
- High efficiency up to 80%
- Operating temperature -40°C to + 90°C
- Input / Output Isolation 1500 & 3000VDC
- Continuous short circuit protection
- No minimal load required

Models

Single output

Model	Input Voltage (V)	Output Voltage (V)	Output Current max (mA)	Input Current Max | No Load (mA)	Isolation (VDC)	Capacitive Load (uF)	Efficiency (%)
AM1DU-0505SZ	4.5-9	5	200	263 | 35	1500	1680	76
AM1DU-0512SZ	4.5-9	12	83	253 | 35	1500	820	79
AM1DU-1205SZ	9-18	5	200	107 | 20	1500	1680	78
AM1DU-1212SZ	9-18	12	83	105 | 20	1500	820	80
AM1DU-2405SZ	18-36	5	200	54 | 10	1500	1680	78
AM1DU-2412SZ	18-36	12	83	52 | 10	1500	820	80
AM1DU-0505SH30Z	4.5-9	5	200	263 | 35	3000	1680	76
AM1DU-0512SH30Z	4.5-9	12	83	253 | 35	3000	820	79
AM1DU-1205SH30Z	9-18	5	200	107 | 20	3000	1680	78
AM1DU-1212SH30Z	9-18	12	83	105 | 20	3000	820	80
AM1DU-2405SH30Z	18-36	5	200	54 | 10	3000	1680	78
AM1DU-2412SH30Z	18-36	12	83	52 | 10	3000	820	80

NOTE: Capacitive load tested at full resistive load.

Input Specifications

Parameters	Nominal	Typical	Maximum	Units
Voltage range	5 12 24	4.5-9 9-18 18-36	15(1sec) 25(1sec) 50(1sec)	VDC
Filter	Capacitor			
Reflected ripple current	35mA pk-pk			

NOTE: Reflected ripple current measured with a simulated source inductance of 12uH and a source capacitor Cin(47uF, ESR<1.0 at 100KHz).

Isolation Specifications

Parameters	Conditions	Typical	Rated	Units
Tested I/O voltage	60 sec, <1mA		1500, 3000	VDC
Resistance		>1000		MOhm
Capacitance	100KHz/0.1V	70		pF

Output Specifications

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy		±2		%
Short Circuit protection	Continuous(Automatic Recovery)			
Line voltage regulation		±0.2		%
Load voltage regulation	0-100%	±1		%
Temperature coefficient		±0.02		%/°C
Ripple & Noise		50		mVp-p

NOTE: Ripple & Noise measured with 0.1uF ceramic disc capacitor and a 10uF electrolytic capacitor.

General Specifications

Parameters	Conditions	Typical	Maximum	Units
Switching frequency	100% load	150	550	KHz
Operating temperature	Derating above 85°C	-40 to +90		°C
Storage temperature		-55 to +125		°C
Cooling	Free air convection			
Humidity			95	%
Case material	Black Plastic UL94V-0			
Weight		3.1		g
Dimensions (L x W x H)	0.76 x 0.28 x 0.39 inch 19.50 x 7.20 x 10.00 mm			
MTBF	>2,800,000 hrs (MIL-HDBK -217F, Ground Benign, t=+25°C)			

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

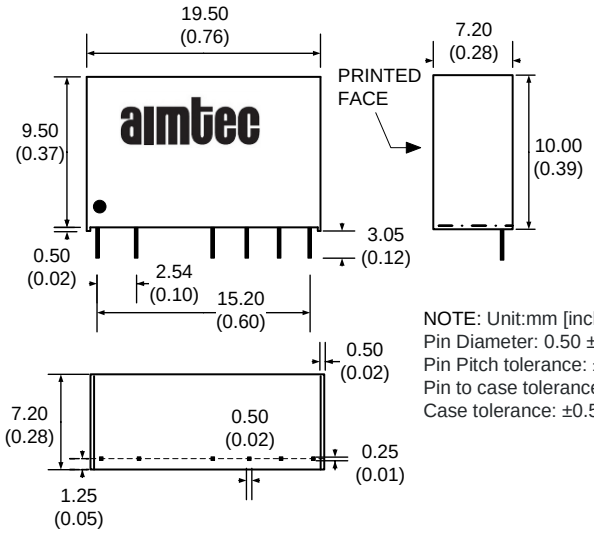
Safety Specifications

Parameters		
Agency approvals		CE
Standards	Information Technology Equipment	EN55032 Class B, with the recommended circuit below
	Electrostatic Discharge Immunity	IEC 61000-4-2, Criteria A
	RF, Electromagnetic Field Immunity	IEC 61000-4-3, Criteria A
	Electrical Fast Transient / Burst Immunity	IEC 61000-4-4, Criteria A, with the recommended circuit below
	Surge Immunity	IEC 61000-4-5, Criteria A, with the recommended circuit below
	Conducted Susceptibility	IEC 61000-4-6, Criteria A
	Power frequency magnetic field	IEC 61000-4-8, Criteria A

Pin Out Specification

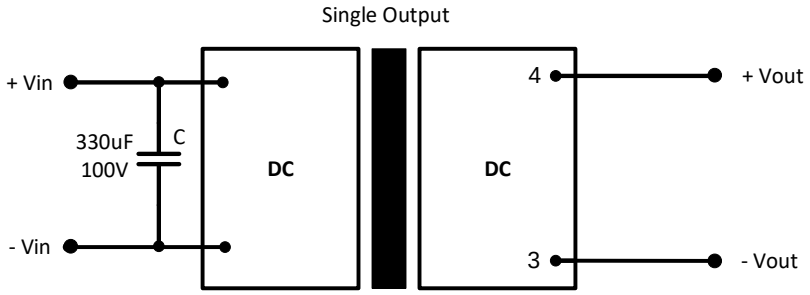
Pin	Single	
	1500VDC Isolation	3000VDC Isolation
1	+ V Input	+ V Input
2	- V Input	- V Input
4	- V Output	No pin
5	No pin	- V Output
6	+ V Output	No pin
7	No pin	+ V Output

Dimensions

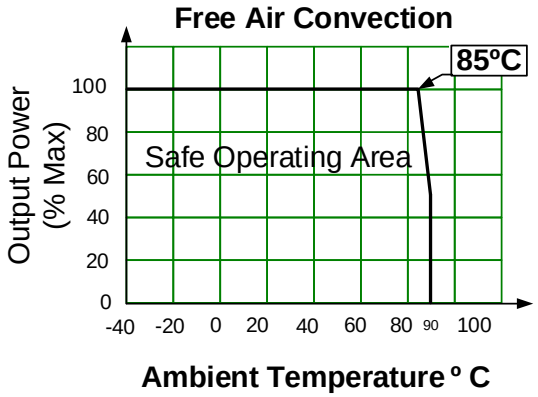


NOTE: Unit:mm [inch]
Pin Diameter: 0.50 ± 0.05mm [0.02 ± 0.002 inch]
Pin Pitch tolerance: ±0.35mm [±0.014 inch]
Pin to case tolerance: ±0.5mm [±0.02 inch]
Case tolerance: ±0.50mm [±0.02 inch]

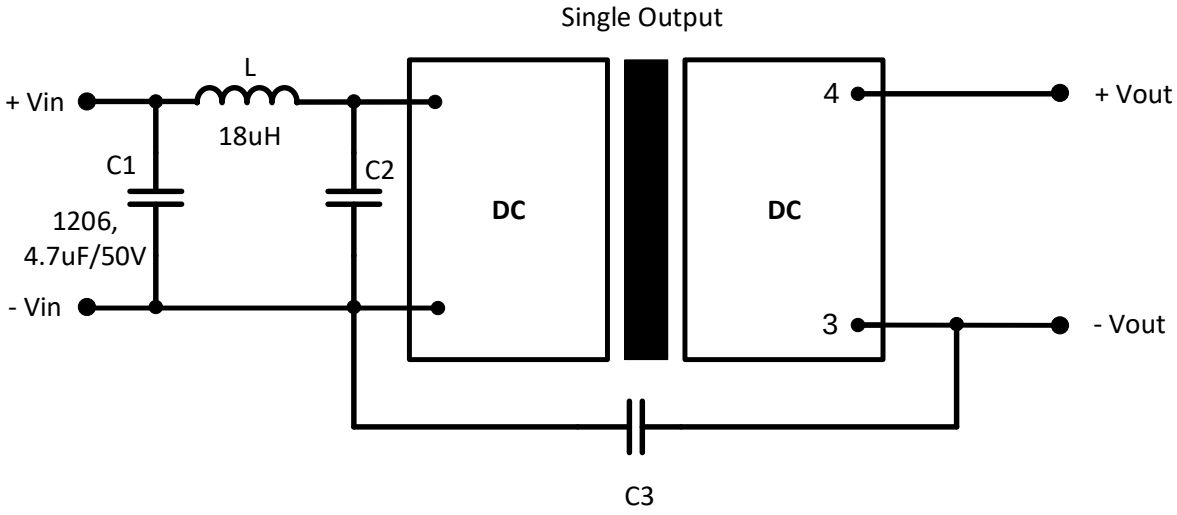
FET & Surge Filter



Derating



EMI Filter



External capacitor

Vin (VDC)	C2 (uF)	C3 (pF)
5	-	1808, 220pF / 3KV
12	-	1808, 220pF / 3KV
24	1206, 4.7uF/50V	1808, 470pF / 3KV

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.