aimtec
Your Power Partner

Series AM10E-Z

10 Watt | DC-DC Converter



FEATURES:

- RoHS compliant
- Full SMD technology
- Wide 2:1 input range
- High efficiency up to 86%
- Pin compatible with multiple manufacturers
- Operating temperature -40ºC to + 85ºC
- Input/Output Isolation 1500VDC
- Continuous short circuit protection
- Low profile metal package

Models
Single output

Model	Input Voltage (V)	Output Voltage (V)	Output Current max (A)	Capacitance load, max (µF)	Efficiency (%)
AM10E-1203SZ	9-18	3.3	2	2200	78
AM10E-1205SZ	9-18	5	2	2200	82
AM10E-1207SZ	9-18	7.2	1.388	1000	83
AM10E-1209SZ	9-18	9	1.111	1000	83
AM10E-1212SZ	9-18	12	0.833	680	84
AM10E-1215SZ	9-18	15	0.666	470	84
AM10E-1218SZ	9-18	18	0.555	470	85
AM10E-1224SZ	9-18	24	0.416	330	85
AM10E-2403SZ	18-36	3.3	2	2200	78
AM10E-2405SZ	18-36	5	2	2200	82
AM10E-2407SZ	18-36	7.2	1.388	1000	83
AM10E-2409SZ	18-36	9	1.111	1000	84
AM10E-2412SZ	18-36	12	0.833	680	84
AM10E-2415SZ	18-36	15	0.666	470	85
AM10E-2418SZ	18-36	18	0.555	470	85
AM10E-2424SZ	18-36	24	0.416	330	86
AM10E-4803SZ	36-72	3.3	2	2200	78
AM10E-4805SZ	36-72	5	2	2200	83
AM10E-4807SZ	36-72	7.2	1.388	1000	83
AM10E-4809SZ	36-72	9	1.111	1000	84
AM10E-4812SZ	36-72	12	0.833	680	84
AM10E-4815SZ	36-72	15	0.666	470	84
AM10E-4818SZ	36-72	18	0.555	470	85
AM10E-4824SZ	36-72	24	0.416	330	86

Models
Dual output

Model	Input Voltage (V)	Output Voltage (V)	Output Current max (A)	Capacitance load, max (µF)	Efficiency (%)
AM10E-1203DZ	9-18	±3.3	±1	±1000	78
AM10E-1205DZ	9-18	±5	±1	±1000	82
AM10E-1207DZ	9-18	±7.2	±0.694	±680	83
AM10E-1209DZ	9-18	±9	±0.555	±470	84
AM10E-1212DZ	9-18	±12	±0.416	±470	84
AM10E-1215DZ	9-18	±15	±0.333	±330	85
AM10E-1218DZ	9-18	±18	±0.277	±220	85
AM10E-1224DZ	9-18	±24	±0.208	±220	85
AM10E-2403DZ	18-36	±3.3	±1	±1000	78
AM10E-2405DZ	18-36	±5	±1	±1000	82
AM10E-2407DZ	18-36	±7.2	±0.694	±680	83
AM10E-2409DZ	18-36	±9	±0.555	±470	83
AM10E-2412DZ	18-36	±12	±0.416	±470	84
AM10E-2415DZ	18-36	±15	±0.333	±330	84
AM10E-2418DZ	18-36	±18	±0.277	±220	85

Models
Dual output (continued)

Model	Input Voltage (V)	Output Voltage (V)	Output Current max (A)	Capacitance load, max (µF)	Efficiency (%)
AM10E-2424DZ	18-36	±24	±0.208	±220	85
AM10E-4803DZ	36-72	±3.3	±1	±1000	78
AM10E-4805DZ	36-72	±5	±1	±1000	82
AM10E-4807DZ	36-72	±7.2	±0.694	±680	84
AM10E-4809DZ	36-72	±9	±0.555	±470	84
AM10E-4812DZ	36-72	±12	±0.416	±470	85
AM10E-4815DZ	36-72	±15	±0.333	±330	85
AM10E-4818DZ	36-72	±18	±0.277	±220	86
AM10E-4824DZ	36-72	±24	±0.208	±220	86

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.

Input Specifications

Parameters	Nominal	Typical	Maximum	Units
Input Voltage range	12	9-18		VDC
	24	18-36		
	48	36-72		
Filter		π(Pl)		
Turn on Transient process time			350	ms
Start up time		20		ms
Absolute Maximum Rating	12 Vin	-0.7-24		VDC
	24 Vin	-0.7-40		
	48 Vin	-0.7-80		
Peak Input Voltage time			100	ms
No Load Input Current		70		mA
Input reflected current		35		mAp-p

Isolation Specifications

Parameters	Conditions	Typical	Rated	Units
Tested I/O voltage	3 sec		1500	VDC
Resistance		> 1000		MOhm
Capacitance		500		pF

Output Specifications

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy		±1		%
Voltage balance (Dual Output)	Balance Load	±1		%
Cross Regulation (Dual Output)	25% load on one output - 100% load on second load	±5		%
Short Circuit protection		Continuous		
Short circuit restart		Auto Recovery		
Over load protection		140		%
Line voltage regulation	HL-LL	±0.5		%
Load voltage regulation (Single)	10-100%	±0.5		%
Load voltage regulation (Dual)	10-100%	±1.0		%
Temperature coefficient		±0.02		% °C
Ripple & Noise	20MHz Bandwidth	100		mVp-p
Ripple & Noise (24V Output models)	20MHz Bandwidth	150		mVp-p
Rising time		10		ms

General Specifications

Parameters	Conditions	Typical	Maximum	Units
Switching frequency	100% load	200		KHz
Operating temperature	No derating	-40 to +85		°C
Storage temperature	-40 to +125			°C
Maximum case temperature			100	°C
Cooling	Free air convection			
Humidity			95	%
Case material	Nickel coated copper			
Potting Material	UL94V-0 rated			
Weight		31		g
Dimensions (L x W x H)	Tolerance ±0.5mm	2.00 x 1.00 x 0.40 inches	50.80 x 25.40 x 10.16 mm	
MTBF	> 1 121 000 hrs (MIL-HDBK -217F, Ground Benign, t=+25°C)			
Maximum soldering temperature	1.5mm from case max 10 sec		260	°C
Transient recovery time		250		us
Transient recovery deviation		±3		%

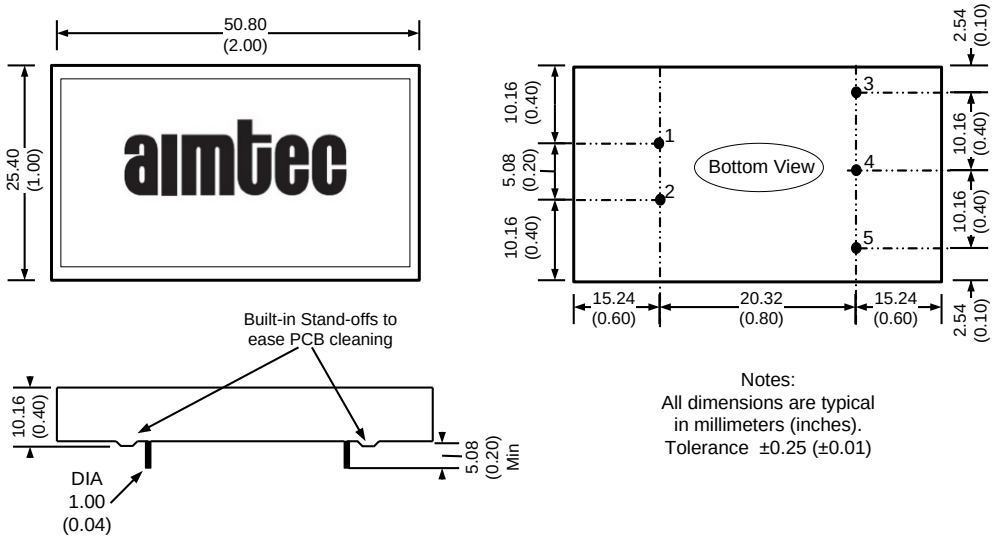
Safety Specifications

Parameters	
Agency approvals	cULus
Standards	IEC/UL/EN/62368-1
	EN 55032 – Class A, with the recommended EMI circuit
	IEC61000-4-2(ESD) Criteria A
	IEC61000-4-3(Radiated immunity) Criteria A
	IEC61000-4-4(EFT) Criteria A
	IEC61000-4-5(Surge) Criteria A, with the recommended Surge external circuit
	IEC61000-4-6(CS) Criteria A
	IEC61000-4-8(PFMF) Criteria A

Pin Out Specifications

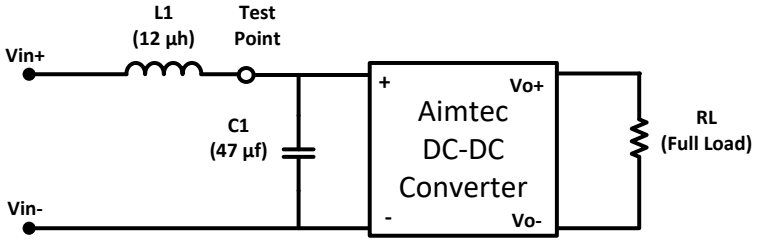
Pin	Single	Dual
1	+V Input	+V Input
2	-V Input	-V Input
3	+V Output	+V Output
4	No Pin.	Common.
5	-V Output	-V Output

Dimensions



Notes:
All dimensions are typical in millimeters (inches).
Tolerance ±0.25 (±0.01)

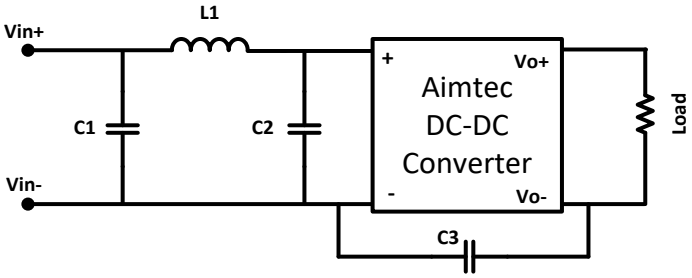
Input Reflected Ripple Test Circuit



* Tested at full load, and nominal input

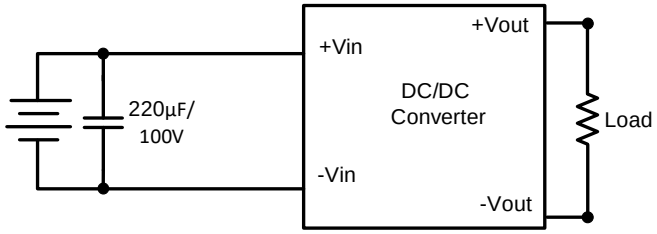
EMI Filtering

To meet conducted emissions, the following circuit is recommended with the external components as noted in the table below.



Model	C1	L1	C2	C3
12 Vin	330 µF / 100V	12 µH	100 µF / 100V	1000pF / 3KV
24 Vin	330 µF / 100V	12 µH	100 µF / 100V	1000pF / 3KV
48 Vin	330 µF / 100V	12 µH	100 µF / 100V	1000pF / 3KV

Surge Application circuit



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.