aimtec
Your Power Partner

Series AM4T-Z

4 Watt | DC-DC Converter



FEATURES:

- RoHS compliant
- 24 Pin DIP Package
- Low profile metal package
- High efficiency up to 85%
- Operating temperature -40ºC to + 85ºC
- Input / Output isolation 1500 or 3500VDC
- Pin compatible with multiple manufacturers
- Continuous short circuit protection

RoHS CE

Models
Single output

Model	Input Voltage (V)	Output Voltage (V)	Output Current max (mA)	Capacitive load, max (µF)	Efficiency (%)
AM4T-0503SZ	4.5-9	3.3	1200	3300	73
AM4T-0505SZ	4.5-9	5	800	1000	77
AM4T-0512SZ	4.5-9	12	333	220	81
AM4T-0515SZ	4.5-9	15	266	100	82
AM4T-1203SZ	9-18	3.3	1200	3300	72
AM4T-1205SZ	9-18	5	800	1000	78
AM4T-1207SZ	9-18	7.2	555	470	78
AM4T-1209SZ	9-18	9	444	470	78
AM4T-1212SZ	9-18	12	333	220	80
AM4T-1215SZ	9-18	15	266	100	80
AM4T-1218SZ	9-18	18	222	47	80
AM4T-1224SZ	9-18	24	166	47	80
AM4T-2403SZ	18-36	3.3	1200	3300	75
AM4T-2405SZ	18-36	5	800	1000	80
AM4T-2407SZ	18-36	7.2	555	470	80
AM4T-2409SZ	18-36	9	444	470	80
AM4T-2412SZ	18-36	12	333	220	83
AM4T-2415SZ	18-36	15	266	100	80
AM4T-2418SZ	18-36	18	222	47	85
AM4T-2424SZ	18-36	24	166	47	85
AM4T-4803SZ	36-72	3.3	1200	3300	75
AM4T-4805SZ	36-72	5	800	1000	80
AM4T-4807SZ	36-72	7.2	555	470	82
AM4T-4809SZ	36-72	9	444	470	82
AM4T-4812SZ	36-72	12	333	220	80
AM4T-4815SZ	36-72	15	266	100	81
AM4T-4818SZ	36-72	18	222	47	82
AM4T-4824SZ	36-72	24	166	47	82
AM4T-0503SH35Z	4.5-9	3.3	1200	3300	73
AM4T-0505SH35Z	4.5-9	5	800	1000	77
AM4T-0512SH35Z	4.5-9	12	333	220	81
AM4T-0515SH35Z	4.5-9	15	266	100	82
AM4T-1203SH35Z	9-18	3.3	1200	3300	72
AM4T-1205SH35Z	9-18	5	800	1000	78
AM4T-1207SH35Z	9-18	7.2	555	470	78
AM4T-1209SH35Z	9-18	9	444	470	78
AM4T-1212SH35Z	9-18	12	333	220	80
AM4T-1215SH35Z	9-18	15	266	100	80
AM4T-1218SH35Z	9-18	18	222	47	80
AM4T-1224SH35Z	9-18	24	166	47	80
AM4T-2403SH35Z	18-36	3.3	1200	3300	75
AM4T-2405SH35Z	18-36	5	800	1000	80
AM4T-2407SH35Z	18-36	7.2	555	470	80
AM4T-2409SH35Z	18-36	9	444	470	80
AM4T-2412SH35Z	18-36	12	333	220	83
AM4T-2415SH35Z	18-36	15	266	100	80
AM4T-2418SH35Z	18-36	18	222	47	85

Models
Single output (continued)

Model	Input Voltage (V)	Output Voltage (V)	Output Current max (mA)	Capacitive load, max (µF)	Efficiency (%)
AM4T-2424SH35Z	18-36	24	166	47	85
AM4T-4803SH35Z	36-72	3.3	1200	3300	75
AM4T-4805SH35Z	36-72	5	800	1000	80
AM4T-4807SH35Z	36-72	7.2	555	470	82
AM4T-4809SH35Z	36-72	9	444	470	82
AM4T-4812SH35Z	36-72	12	333	220	80
AM4T-4815SH35Z	36-72	15	266	100	81
AM4T-4818SH35Z	36-72	18	222	47	82
AM4T-4824SH35Z	36-72	24	166	47	82

Models
Dual output

Model	Input Voltage (V)	Output Voltage (V)	Output Current max (mA)	Capacitive load, max (µF)	Efficiency (%)
AM4T-0503DZ	4.5-9	±3.3	±600	±680	76
AM4T-0505DZ	4.5-9	±5	±400	±470	79
AM4T-0512DZ	4.5-9	±12	±166	±100	81
AM4T-0515DZ	4.5-9	±15	±133	±47	81
AM4T-1203DZ	9-18	±3.3	±600	±680	73
AM4T-1205DZ	9-18	±5	±400	±470	78
AM4T-1207DZ	9-18	±7.2	±277	±220	80
AM4T-1209DZ	9-18	±9	±220	±220	80
AM4T-1212DZ	9-18	±12	±166	±100	80
AM4T-1215DZ	9-18	±15	±133	±47	80
AM4T-1218DZ	9-18	±18	±111	±22	79
AM4T-1224DZ	9-18	±24	±83	±22	79
AM4T-2403DZ	18-36	±3.3	±600	±680	73
AM4T-2405DZ	18-36	±5	±400	±470	79
AM4T-2407DZ	18-36	±7.2	±277	±220	80
AM4T-2409DZ	18-36	±9	±220	±220	80
AM4T-2412DZ	18-36	±12	±166	±100	82
AM4T-2415DZ	18-36	±15	±133	±47	80
AM4T-2418DZ	18-36	±18	±111	±22	78
AM4T-2424DZ	18-36	±24	±83	±22	78
AM4T-4803DZ	36-72	±3.3	±600	±680	72
AM4T-4805DZ	36-72	±5	±400	±470	78
AM4T-4807DZ	36-72	±7.2	±277	±220	78
AM4T-4809DZ	36-72	±9	±220	±220	78
AM4T-4812DZ	36-72	±12	±166	±100	80
AM4T-4815DZ	36-72	±15	±133	±47	80
AM4T-4818DZ	36-72	±18	±111	±22	80
AM4T-4824DZ	36-72	±24	±83	±22	80
AM4T-0503DH35Z	4.5-9	±3.3	±600	±680	76
AM4T-0505DH35Z	4.5-9	±5	±400	±470	79
AM4T-0512DH35Z	4.5-9	±12	±166	±100	81
AM4T-0515DH35Z	4.5-9	±15	±133	±47	81
AM4T-1203DH35Z	9-18	±3.3	±600	±680	73
AM4T-1205DH35Z	9-18	±5	±400	±470	78
AM4T-1207DH35Z	9-18	±7.2	±277	±220	80
AM4T-1209DH35Z	9-18	±9	±220	±220	80
AM4T-1212DH35Z	9-18	±12	±166	±100	80
AM4T-1215DH35Z	9-18	±15	±133	±47	80
AM4T-1218DH35Z	9-18	±18	±111	±22	79
AM4T-1224DH35Z	9-18	±24	±83	±22	79
AM4T-2403DH35Z	18-36	±3.3	±600	±680	73
AM4T-2405DH35Z	18-36	±5	±400	±470	79

Models

Dual output (continued)

Model	Input Voltage (V)	Output Voltage (V)	Output Current max (mA)	Capacitive load, max (µF)	Efficiency (%)
AM4T-2407DH35Z	18-36	±7.2	±277	±220	80
AM4T-2409DH35Z	18-36	±9	±220	±220	80
AM4T-2412DH35Z	18-36	±12	±166	±100	82
AM4T-2415DH35Z	18-36	±15	±133	±47	80
AM4T-2418DH35Z	18-36	±18	±111	±22	78
AM4T-2424DH35Z	36-72	±24	±83	±22	78
AM4T-4803DH35Z	36-72	±3.3	±600	±680	72
AM4T-4805DH35Z	36-72	±5	±400	±470	78
AM4T-4807DH35Z	36-72	±7.2	±277	±220	78
AM4T-4809DH35Z	36-72	±9	±220	±220	78
AM4T-4812DH35Z	36-72	±12	±166	±100	80
AM4T-4815DH35Z	36-72	±15	±133	±47	80
AM4T-4818DH35Z	36-72	±18	±111	±22	80
AM4T-4824DH35Z	36-72	±24	±83	±22	80

Input Specifications

Parameters	Nominal	Typical	Maximum	Units
Voltage range	5	4.5-9		VDC
	12	9-18		VDC
	24	18-36		VDC
	48	36-72		VDC
Filter	π (Pi) Network			
Absolute Maximum Rating	5 Vin	-0.7-15		VDC
	12 Vin	-0.7-24		VDC
	24 Vin	-0.7-40		VDC
	48 Vin	-0.7-80		VDC
Peak Input Voltage time		100		ms
Input Reflected ripple current *		35		mA p-p

* The input reflected ripple current should be measured with connected 12µH inductor and a 47µF capacitor.

Isolation Specifications

Parameters	Conditions	Typical	Rated	Units
Tested I/O voltage	60 sec		1500 or 3500	VDC
Metal case/Input & Output	60 sec		1000	VDC
Resistance		> 1000		MOhm
Capacitance		500		pF

Output Specifications

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy	5Vin, 3.3V/±3.3V models	±2		%
	Others	±1		%
Short circuit protection	Continuous, auto recovery			
Line voltage regulation		±0.5		%
Load voltage regulation	0 – 100% load, 3.3V/±3.3V Models	±1.5		%
	0 – 100% load, others	±0.5		%
Temperature coefficient		±0.02		%/°C
Ripple & Noise *	At 20MHz Bandwidth	60		mV p-p

* Measured with a 1µF CC.

General Specifications

Parameters	Conditions	Typical	Maximum	Units
Switching frequency	100% load	266		KHz
Operating temperature	Full Load without Derating (except 5Vin models)	-40 to +85		°C
Derating	5Vin models, 60 to 85°C	2.5		%/°C

Storage temperature		-40 to +125		°C
Max Case temperature			100	°C
Cooling	Free air convection			
Humidity			95	%
Case material	Nickel coated copper			
Weight		17		g
Dimensions (L x W x H)	Tolerance ±0.5 mm or ±0.02 inches	1.25 x 0.8 x 0.4 inches 31.75 x 20.32 x 10.16 mm		
MTBF	>1 121 000 hrs (MIL-HDBK -217F, Ground Benign, t=+25°C)			
Manual soldering temperature	1.5mm from case for 10sec		260	°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.

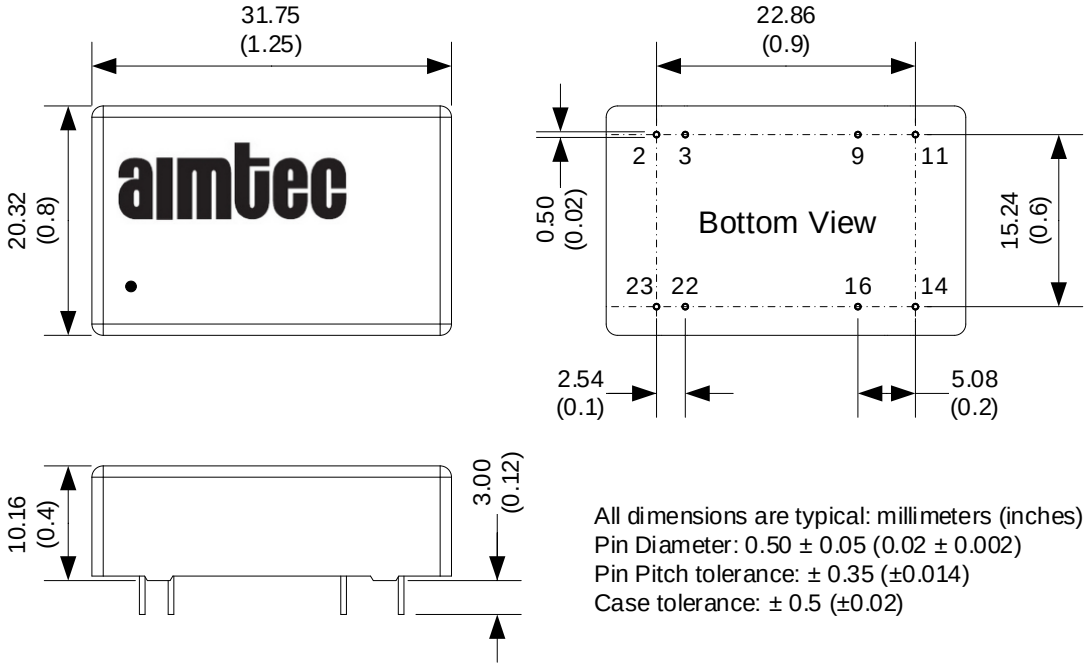
Safety Specifications

Parameters	
Agency Approval	UL, CE (except 5Vin models)
Standards	Designed to meet IEC/EN/UL60950-1, 62368-1
	EN55032 Class A, with recommended circuit
	IEC61000-4-2, Perf. Criteria A
	IEC61000-4-3, Perf. Criteria A
	IEC61000-4-4, Perf. Criteria A with recommended circuit
	IEC61000-4-5, Perf. Criteria A with recommended circuit
	IEC61000-4-6, Perf. Criteria A
	IEC61000-4-8, Perf. Criteria A

Pin Out Specifications

Pin	1500 and 3500VDC	
	Single	Dual
2	-V Input	-V Input
3	-V Input	-V Input
9	No pin	Common
11	N.C.	-V Output
14	+V Output	+V Output
16	-V Output	Common
22	+V Input	+V Input
23	+V Input	+V Input

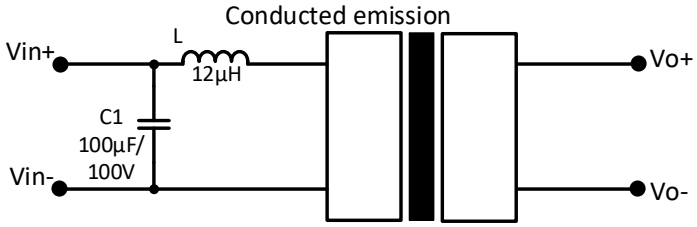
Dimensions

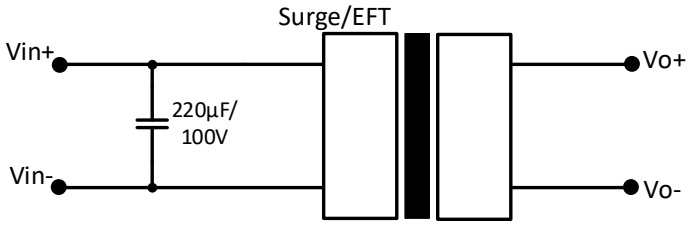


All dimensions are typical: millimeters (inches)
Pin Diameter: 0.50 ± 0.05 (0.02 ± 0.002)
Pin Pitch tolerance: ± 0.35 (±0.014)
Case tolerance: ± 0.5 (±0.02)

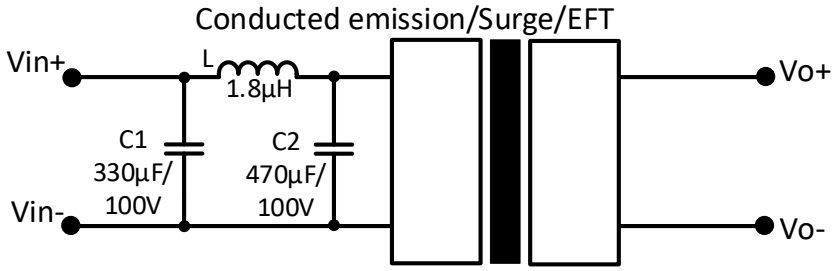
Recommended Circuits

For 12, 24, 48Vin models



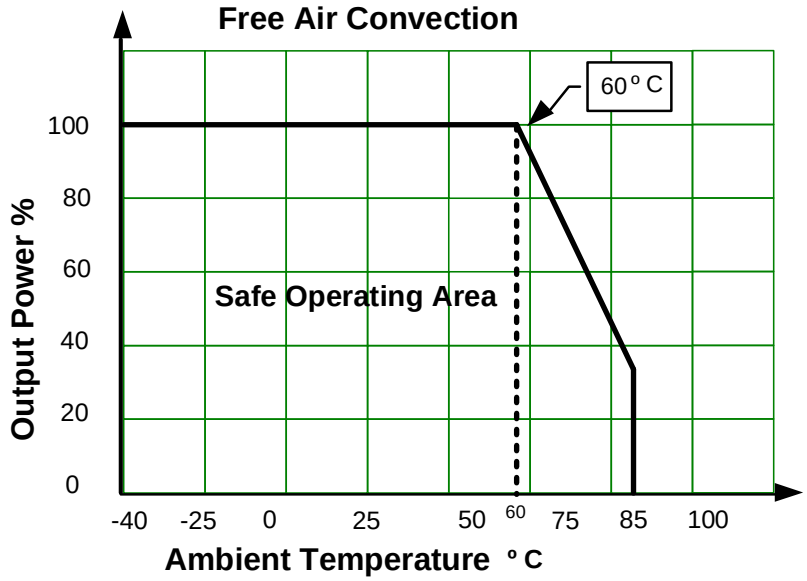


For 5Vin models



Derating

For 5Vin models



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.