aimtec
Your Power Partner

Series AM5T-Z

5 Watt | DC-DC Converter



FEATURES:

- RoHS compliant
- 24 Pin DIP Package
- High efficiency up to 83%
- Wide 2:1 input range
- Operating temperature -40ºC to + 85ºC
- Input / Output isolation 1500 and 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 (%)	Isolation (VDC)
AM5T-0503SZ	4.5-9	3.3	1300	1000	73	1500
AM5T-0505SZ	4.5-9	5	1000	1000	77	1500
AM5T-0512SZ	4.5-9	12	417	330	82	1500
AM5T-0515SZ	4.5-9	15	333	220	82	1500
AM5T-1203SZ	9-18	3.3	1300	1000	73	1500
AM5T-1205SZ	9-18	5	1000	1000	77	1500
AM5T-1207SZ	9-18	7.2	694	680	78	1500
AM5T-1209SZ	9-18	9	555	680	78	1500
AM5T-1212SZ	9-18	12	417	330	81	1500
AM5T-1215SZ	9-18	15	333	220	80	1500
AM5T-1218SZ	9-18	18	277	68	80	1500
AM5T-1224SZ	9-18	24	208	68	80	1500
AM5T-2403SZ	18-36	3.3	1300	1000	75	1500
AM5T-2405SZ	18-36	5	1000	1000	80	1500
AM5T-2407SZ	18-36	7.2	694	680	82	1500
AM5T-2409SZ	18-36	9	555	680	82	1500
AM5T-2412SZ	18-36	12	417	330	80	1500
AM5T-2415SZ	18-36	15	333	220	82	1500
AM5T-2418SZ	18-36	18	277	68	82	1500
AM5T-2424SZ	18-36	24	208	68	82	1500
AM5T-4803SZ	36-72	3.3	1300	1000	75	1500
AM5T-4805SZ	36-72	5	1000	1000	80	1500
AM5T-4807SZ	36-72	7.2	694	680	82	1500
AM5T-4809SZ	36-72	9	555	680	82	1500
AM5T-4812SZ	36-72	12	417	330	80	1500
AM5T-4815SZ	36-72	15	333	220	83	1500
AM5T-4818SZ	36-72	18	277	68	83	1500
AM5T-4824SZ	36-72	24	208	68	83	1500
AM5T-0503SH35Z	4.5-9	3.3	1300	1000	73	3500
AM5T-0505SH35Z	4.5-9	5	1000	1000	77	3500
AM5T-0512SH35Z	4.5-9	12	417	330	82	3500
AM5T-0515SH35Z	4.5-9	15	333	220	82	3500
AM5T-1203SH35Z	9-18	3.3	1300	1000	73	3500
AM5T-1205SH35Z	9-18	5	1000	1000	77	3500
AM5T-1207SH35Z	9-18	7.2	694	680	78	3500
AM5T-1209SH35Z	9-18	9	555	680	78	3500
AM5T-1212SH35Z	9-18	12	417	330	81	3500
AM5T-1215SH35Z	9-18	15	333	220	80	3500
AM5T-1218SH35Z	9-18	18	277	68	80	3500
AM5T-1224SH35Z	9-18	24	208	68	80	3500
AM5T-2403SH35Z	18-36	3.3	1300	1000	75	3500
AM5T-2405SH35Z	18-36	5	1000	1000	80	3500
AM5T-2407SH35Z	18-36	7.2	694	680	82	3500
AM5T-2409SH35Z	18-36	9	555	680	82	3500
AM5T-2412SH35Z	18-36	12	417	330	80	3500
AM5T-2415SH35Z	18-36	15	333	220	82	3500
AM5T-2418SH35Z	18-36	18	277	68	82	3500
AM5T-2424SH35Z	18-36	24	208	68	82	3500

Models
Single Output (continued)

Model	Input Voltage (V)	Output Voltage (V)	Output Current max (mA)	Capacitive load, max (µF)	Efficiency (%)	Isolation (VDC)
AM5T-4803SH35Z	36-72	3.3	1300	1000	75	3500
AM5T-4805SH35Z	36-72	5	1000	1000	80	3500
AM5T-4807SH35Z	36-72	7.2	694	470	82	3500
AM5T-4809SH35Z	36-72	9	555	470	82	3500
AM5T-4812SH35Z	36-72	12	417	330	80	3500
AM5T-4815SH35Z	36-72	15	333	220	83	3500
AM5T-4818SH35Z	36-72	18	277	68	83	3500
AM5T-4824SH35Z	36-72	24	208	68	83	3500

Models
Dual Output

Model	Input Voltage (V)	Output Voltage (V)	Output Current max (mA)	Capacitive load, max (µF)	Efficiency (%)	Isolation (VDC)
AM5T-0503DZ	4.5-9	±3.3	±750	±680	76	1500
AM5T-0505DZ	4.5-9	±5	±500	±330	79	1500
AM5T-0512DZ	4.5-9	±12	±208	±100	82	1500
AM5T-0515DZ	4.5-9	±15	±167	±47	82	1500
AM5T-1203DZ	9-18	±3.3	±750	±680	73	1500
AM5T-1205DZ	9-18	±5	±500	±330	77	1500
AM5T-1207DZ	9-18	±7.2	±347	±220	80	1500
AM5T-1209DZ	9-18	±9	±278	±220	80	1500
AM5T-1212DZ	9-18	±12	±208	±100	80	1500
AM5T-1215DZ	9-18	±15	±167	±47	79	1500
AM5T-1218DZ	9-18	±18	±138	±33	80	1500
AM5T-1224DZ	9-18	±24	±104	±33	80	1500
AM5T-2403DZ	18-36	±3.3	±750	±680	75	1500
AM5T-2405DZ	18-36	±5	±500	±330	78	1500
AM5T-2407DZ	18-36	±7.2	±347	±220	83	1500
AM5T-2409DZ	18-36	±9	±278	±220	83	1500
AM5T-2412DZ	18-36	±12	±208	±100	80	1500
AM5T-2415DZ	18-36	±15	±167	±47	80	1500
AM5T-2418DZ	18-36	±18	±138	±33	80	1500
AM5T-2424DZ	18-36	±24	±104	±33	80	1500
AM5T-4803DZ	36-72	±3.3	±750	±680	73	1500
AM5T-4805DZ	36-72	±5	±500	±330	79	1500
AM5T-4807DZ	36-72	±7.2	±347	±220	79	1500
AM5T-4809DZ	36-72	±9	±278	±220	79	1500
AM5T-4812DZ	36-72	±12	±208	±100	80	1500
AM5T-4815DZ	36-72	±15	±167	±47	80	1500
AM5T-4818DZ	36-72	±18	±138	±33	80	1500
AM5T-4824DZ	36-72	±24	±104	±33	80	1500
AM5T-0503DH35Z	4.5-9	±3.3	±750	±680	76	3500
AM5T-0505DH35Z	4.5-9	±5	±500	±330	79	3500
AM5T-0512DH35Z	4.5-9	±12	±208	±100	82	3500
AM5T-0515DH35Z	4.5-9	±15	±167	±47	82	3500
AM5T-1203DH35Z	9-18	±3.3	±750	±680	73	3500
AM5T-1205DH35Z	9-18	±5	±500	±330	77	3500
AM5T-1207DH35Z	9-18	±7.2	±347	±220	80	3500
AM5T-1209DH35Z	9-18	±9	±278	±220	80	3500
AM5T-1212DH35Z	9-18	±12	±208	±100	80	3500
AM5T-1215DH35Z	9-18	±15	±167	±47	79	3500
AM5T-1218DH35Z	9-18	±18	±138	±33	80	3500
AM5T-1224DH35Z	9-18	±24	±104	±33	80	3500
AM5T-2403DH35Z	18-36	±3.3	±750	±680	75	3500
AM5T-2405DH35Z	18-36	±5	±500	±330	78	3500
AM5T-2407DH35Z	18-36	±7.2	±347	±220	83	3500

Models

Dual Output (continued)

Model	Input Voltage (V)	Output Voltage (V)	Output Current max (mA)	Capacitive load, max (µF)	Efficiency (%)	Isolation (VDC)
AM5T-2409DH35Z	18-36	±9	±278	±220	83	3500
AM5T-2412DH35Z	18-36	±12	±208	±100	80	3500
AM5T-2415DH35Z	18-36	±15	±167	±47	80	3500
AM5T-2418DH35Z	18-36	±18	±138	±33	80	3500
AM5T-2424DH35Z	18-36	±24	±104	±33	80	3500
AM5T-4803DH35Z	36-72	±3.3	±750	±680	73	3500
AM5T-4805DH35Z	36-72	±5	±500	±330	79	3500
AM5T-4807DH35Z	36-72	±7.2	±347	±220	79	3500
AM5T-4809DH35Z	36-72	±9	±278	±220	79	3500
AM5T-4812DH35Z	36-72	±12	±208	±100	80	3500
AM5T-4815DH35Z	36-72	±15	±167	±47	80	3500
AM5T-4818DH35Z	36-72	±18	±138	±33	80	3500
AM5T-4824DH35Z	36-72	±24	±104	±33	80	3500

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 0.4inches (31.75 x 20.32 x 10.16mm)		
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.

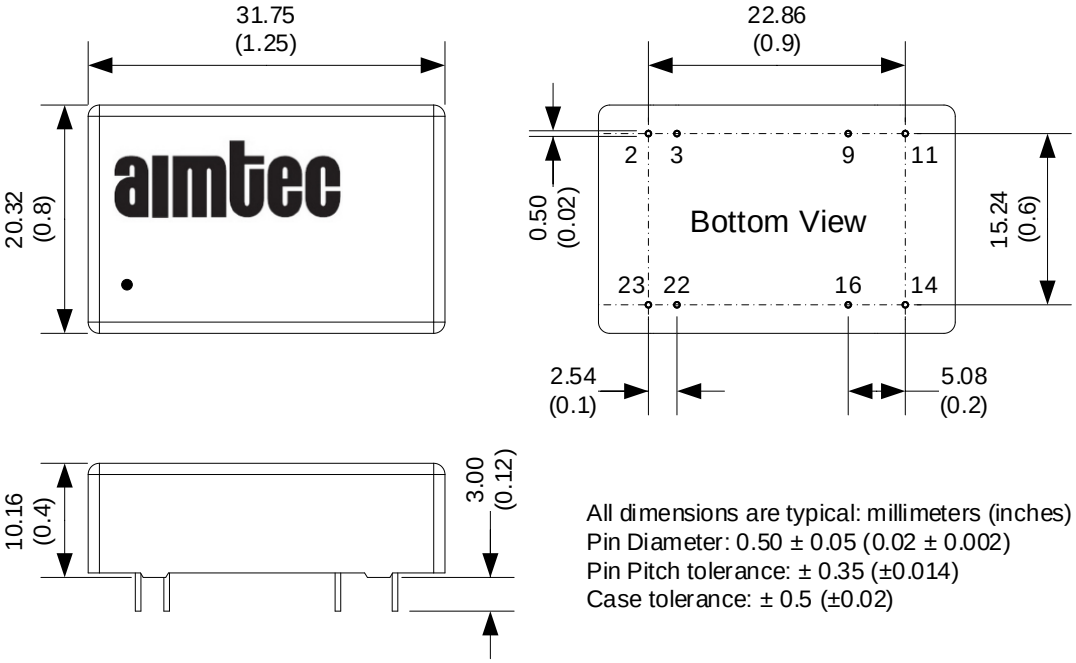
Safety Specifications

Parameters	
Agency Approvals	UL (pending), 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 (external 220uF/100V cap required)
	IEC61000-4-5, Perf. Criteria A (external 220uF/100V cap required)
	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

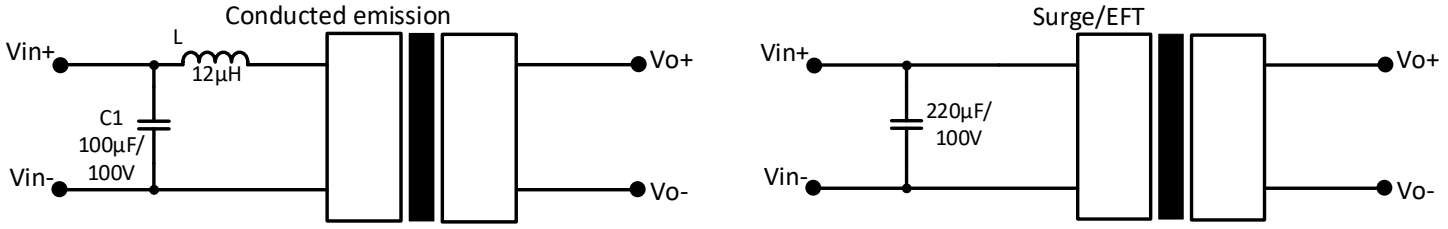
Dimensions



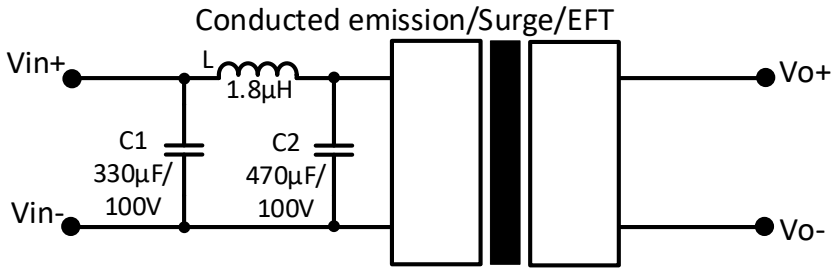
All dimensions are typical: millimeters (inches)
Pin Diameter: 0.50 ± 0.05 (0.02 ± 0.002)
Pin Pitch tolerance: ± 0.35 (±0.014)
Case tolerance: ± 0.5 (±0.02)

Recommended Circuits

For 12, 24, 48Vin models

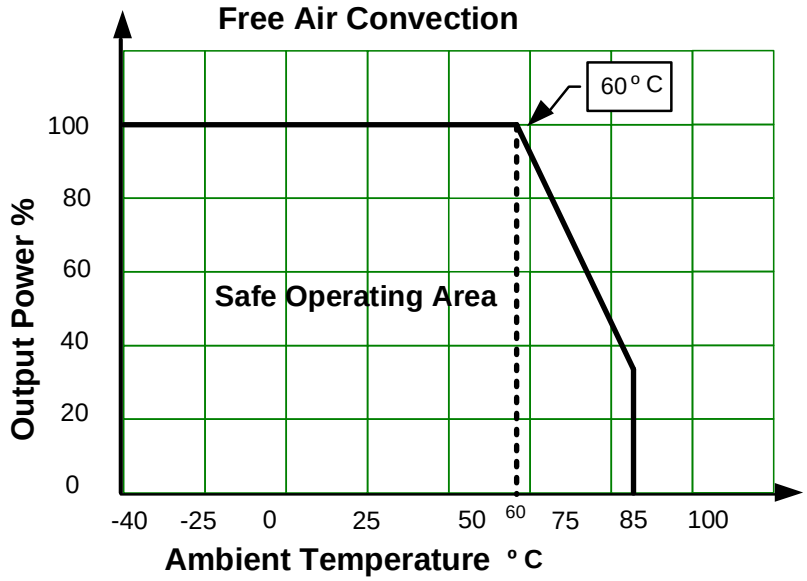


For 5Vin models



Derating

For 5Vin models



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