Series AM5T-VZ

5 Watt | DC-DC Converter



FEATURES:

- Wide 2:1 input range
- 24 Pin DIP Package
- Metal package
- High efficiency up to 80%
- Operating temperature -40ºC to + 85ºC
- Input / Output isolation 1500 & 3500 VDC
- Pin compatible with multiple manufacturers
- Continuous short circuit protection

RoHS

Models
Single output

Model	Input Voltage (V)	Output Voltage (V)	Output Current max (mA)	Max. Capacitive load (µF)	Efficiency (%)
AM5T-1205S-VZ	9-18	5	1000	2200	74
AM5T-1209S-VZ	9-18	9	555	470	77
AM5T-1212S-VZ	9-18	12	416	470	78
AM5T-1215S-VZ	9-18	15	333	470	78
AM5T-1224S-VZ	9-18	24	208	220	75
AM5T-2405S-VZ	18-36	5	1000	2200	75
AM5T-2409S-VZ	18-36	9	555	470	76
AM5T-2412S-VZ	18-36	12	416	470	77
AM5T-2415S-VZ	18-36	15	333	470	78
AM5T-2424S-VZ	18-36	24	208	220	76
AM5T-4805S-VZ	36-72	5	1000	2200	77
AM5T-4809S-VZ	36-72	9	555	470	78
AM5T-4812S-VZ	36-72	12	416	470	80
AM5T-4815S-VZ	36-72	15	333	470	80
AM5T-4824S-VZ	36-72	24	208	220	77
AM5T-1205SH35-VZ	9-18	5	1000	2200	74
AM5T-1209SH35-VZ	9-18	9	555	470	77
AM5T-1212SH35-VZ	9-18	12	416	470	78
AM5T-1215SH35-VZ	9-18	15	333	470	78
AM5T-1224SH35-VZ	9-18	24	208	220	75
AM5T-2405SH35-VZ	18-36	5	1000	2200	75
AM5T-2409SH35-VZ	18-36	9	555	470	76
AM5T-2412SH35-VZ	18-36	12	416	470	77
AM5T-2415SH35-VZ	18-36	15	333	470	78
AM5T-2424SH35-VZ	18-36	24	208	220	76
AM5T-4805SH35-VZ	36-72	5	1000	2200	77
AM5T-4809SH35-VZ	36-72	9	555	470	78
AM5T-4812SH35-VZ	36-72	12	416	470	80
AM5T-4815SH35-VZ	36-72	15	333	470	80
AM5T-4824SH35-VZ	36-72	24	208	220	77

Models
Dual output

Model	Input Voltage (V)	Output Voltage (V)	Output Current max (mA)	Max. Capacitive load (µF)	Efficiency (%)
AM5T-1205D-VZ	9-18	±5	±500	±1000	72
AM5T-1209D-VZ	9-18	±9	±277	±220	76
AM5T-1212D-VZ	9-18	±12	±208	±220	77
AM5T-1215D-VZ	9-18	±15	±166	±220	77
AM5T-1224D-VZ	9-18	±24	±104	±100	76
AM5T-2405D-VZ	18-36	±5	±500	±1000	74
AM5T-2409D-VZ	18-36	±9	±277	±220	76
AM5T-2412D-VZ	18-36	±12	±208	±220	78
AM5T-2415D-VZ	18-36	±15	±166	±220	78
AM5T-2424D-VZ	18-36	±24	±104	±100	75
AM5T-4805D-VZ	36-72	±5	±500	±1000	76

Models

Dual output (continued)

Model	Input Voltage (V)	Output Voltage (V)	Output Current max (mA)	Max. Capacitive load (µF)	Efficiency (%)
AM5T-4809D-VZ	36-72	±9	±277	±220	78
AM5T-4812D-VZ	36-72	±12	±208	±220	78
AM5T-4815D-VZ	36-72	±15	±166	±220	80
AM5T-4824D-VZ	36-72	±24	±104	±100	77
AM5T-1205DH35-VZ	9-18	±5	±500	±1000	72
AM5T-1209DH35-VZ	9-18	±9	±277	±220	76
AM5T-1212DH35-VZ	9-18	±12	±208	±220	77
AM5T-1215DH35-VZ	9-18	±15	±166	±220	77
AM5T-1224DH35-VZ	9-18	±24	±104	±100	76
AM5T-2405DH35-VZ	18-36	±5	±500	±1000	74
AM5T-2409DH35-VZ	18-36	±9	±277	±220	76
AM5T-2412DH35-VZ	18-36	±12	±208	±220	78
AM5T-2415DH35-VZ	18-36	±15	±166	±220	78
AM5T-2424DH35-VZ	18-36	±24	±104	±100	75
AM5T-4805DH35-VZ	36-72	±5	±500	±1000	76
AM5T-4809DH35-VZ	36-72	±9	±277	±220	78
AM5T-4812DH35-VZ	36-72	±12	±208	±220	78
AM5T-4815DH35-VZ	36-72	±15	±166	±220	80
AM5T-4824DH35-VZ	36-72	±24	±104	±100	77

Input Specifications

Parameters	Nominal	Typical	Maximum	Units
Voltage Range	12	9-18		VDC
	24	18-36		VDC
	48	36-72		VDC
Filter	π (Pi) Network			
Start up time		20		ms
Absolute Maximum Rating	12 Vin	-0.7-24		VDC
	24 Vin	-0.7-40		VDC
	48 Vin	-0.7-80		VDC
Peak Input Voltage time			100	ms

Isolation Specifications

Parameters	Conditions	Typical	Rated	Units
Tested I/O voltage	60 sec		1500	VDC
	60 sec, H35 models		3500	VDC
Resistance		> 1000		MOhm
Capacitance		60		pF

Output Specifications

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy		±1		%
Voltage balance	Balanced Load	±1		%
Short circuit protection	Continuous			
Short circuit restart	Auto Recovery			
Line voltage regulation	HL-LL	±0.5		%
Load voltage regulation	25-100% Load	±0.5		%
Temperature coefficient		±0.02		%/°C
Ripple & Noise (see note)	At 20MHz Bandwidth	60		mV p-p

Note: For ripple and noise specification, a 100 µF capacitor must be placed on the output of converter.

General Specifications

Parameters	Conditions	Typical	Maximum	Units
Switching frequency		100-400		KHz
Operating temperature	Full Load (see derating chart)	-40 to +85		°C
Storage temperature		-40 to +125		°C
Derating	71 to 85 °C	3.45		%/ °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	>1,000,000 hrs (MIL-HDBK -217F, Ground Benign, t=+25°C)			

Safety Specifications

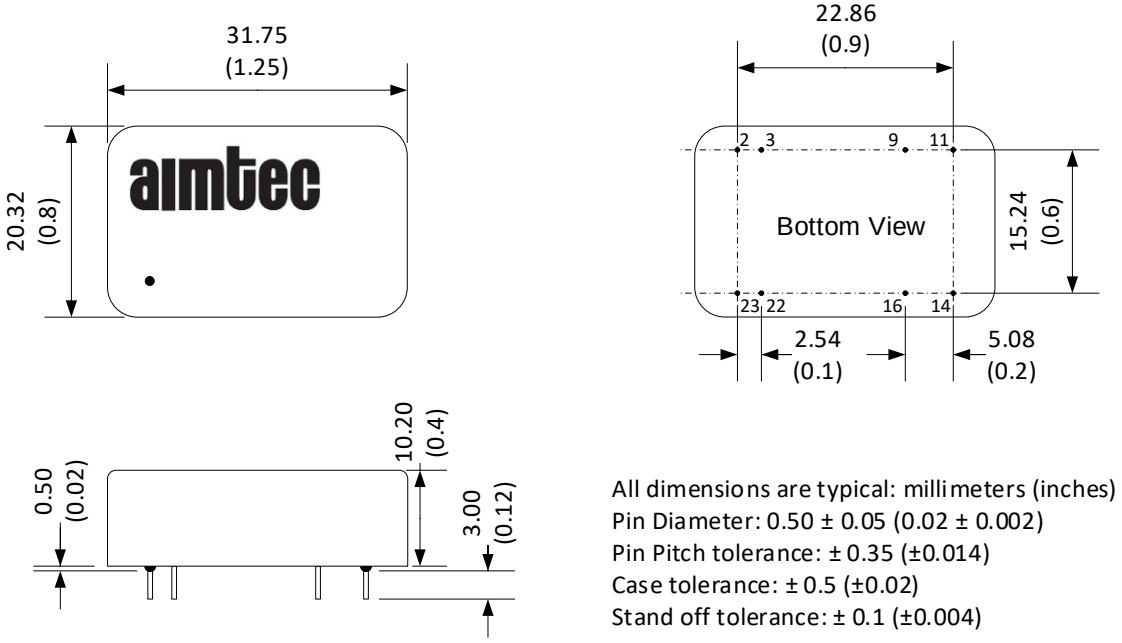
Parameters	
Standards	Designed to meet IEC 60950-1

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.

Pin Out Specifications

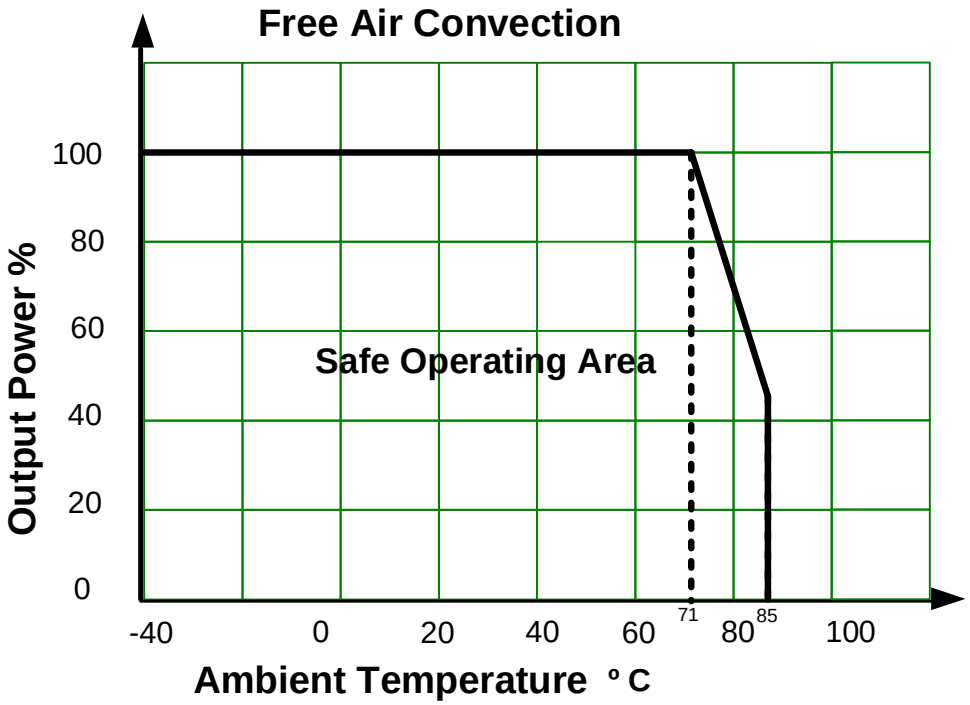
Pin	1500 and 3500VDC	
	Single	Dual
2	-V Input	-V Input
3	-V Input	-V Input
9	No pin	Common
11	N.C.	-V Output
14	+V Output	+V Output
16	-V Output	Common
22	+V Input	+V Input
23	+V Input	+V Input

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)
Stand off tolerance: ± 0.1 (±0.004)

Derating



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.