

Series AM6TW-Z

6 Watt | DC-DC Converter



FEATURES:

- RoHS compliant
- 24 Pin DIP Package
- Wide 4:1 input range
- High efficiency up to 85%
- Operating temperature -40°C to + 85°C
- Input / output isolation 1500 and 3500VDC
- Pin compatible with multiple manufacturers
- Continuous short circuit protection



Models

Single output

Model	Input Voltage (V)	Output Voltage (V)	Output Current max (mA)	Isolation (VDC)	Max Capacitive Load(uF)	Efficiency (%)
AM6TW-2403SZ	9-36	3.3	1400	1500	1000	74
AM6TW-2405SZ	9-36	5	1200	1500	1000	80
AM6TW-2407SZ	9-36	7.2	833	1500	680	82
AM6TW-2409SZ	9-36	9	666	1500	680	83
AM6TW-2412SZ	9-36	12	500	1500	330	82
AM6TW-2415SZ	9-36	15	400	1500	220	83
AM6TW-2418SZ	9-36	18	333	1500	68	82
AM6TW-2424SZ	9-36	24	250	1500	68	82
AM6TW-4803SZ	18-72	3.3	1400	1500	1000	75
AM6TW-4805SZ	18-72	5	1200	1500	1000	80
AM6TW-4807SZ	18-72	7.2	833	1500	220	82
AM6TW-4809SZ	18-72	9	666	1500	220	81
AM6TW-4812SZ	18-72	12	500	1500	220	83
AM6TW-4815SZ	18-72	15	400	1500	220	84
AM6TW-4818SZ	18-72	18	333	1500	220	82
AM6TW-4824SZ	18-72	24	250	1500	220	82
AM6TW-2403SH35Z	9-36	3.3	1400	3500	1000	74
AM6TW-2405SH35Z	9-36	5	1200	3500	1000	80
AM6TW-2407SH35Z	9-36	7.2	833	3500	680	82
AM6TW-2409SH35Z	9-36	9	666	3500	680	83
AM6TW-2412SH35Z	9-36	12	500	3500	330	82
AM6TW-2415SH35Z	9-36	15	400	3500	220	83
AM6TW-2418SH35Z	9-36	18	333	3500	68	82
AM6TW-2424SH35Z	9-36	24	250	3500	68	82
AM6TW-4803SH35Z	18-72	3.3	1400	3500	1000	75
AM6TW-4805SH35Z	18-72	5	1200	3500	1000	80
AM6TW-4807SH35Z	18-72	7.2	833	3500	220	82
AM6TW-4809SH35Z	18-72	9	666	3500	220	81
AM6TW-4812SH35Z	18-72	12	500	3500	220	83
AM6TW-4815SH35Z	18-72	15	400	3500	220	84
AM6TW-4818SH35Z	18-72	18	333	3500	220	82
AM6TW-4824SH35Z	18-72	24	250	3500	220	82

Models

Dual output

Model	Input Voltage (V)	Output Voltage (V)	Output Current max (mA)	Isolation (VDC)	Max Capacitive Load(uF)	Efficiency (%)
AM6TW-2403DZ	9-36	±3.3	±909	1500	±470	75
AM6TW-2405DZ	9-36	±5	±600	1500	±470	80
AM6TW-2407DZ	9-36	±7.2	±416	1500	±470	82
AM6TW-2409DZ	9-36	±9	±333	1500	±100	81
AM6TW-2412DZ	9-36	±12	±250	1500	±100	83
AM6TW-2415DZ	9-36	±15	±200	1500	±47	80
AM6TW-2418DZ	9-36	±18	±166	1500	±22	81

Models

Dual output (continued)

Model	Input Voltage (V)	Output Voltage (V)	Output Current max (mA)	Isolation (VDC)	Max Capacitive Load(μF)	Efficiency (%)
AM6TW-2424DZ	9-36	±24	±125	1500	±22	81
AM6TW-4803DZ	18-72	±3.3	±909	1500	±330	77
AM6TW-4805DZ	18-72	±5	±600	1500	±330	81
AM6TW-4807DZ	18-72	±7.2	±416	1500	±330	83
AM6TW-4809DZ	18-72	±9	±333	1500	±100	81
AM6TW-4812DZ	18-72	±12	±250	1500	±68	82
AM6TW-4815DZ	18-72	±15	±200	1500	±22	84
AM6TW-4818DZ	18-72	±18	±166	1500	±22	80
AM6TW-4824DZ	18-72	±24	±125	1500	±22	80
AM6TW-2403DH35Z	9-36	±3.3	±909	3500	±470	75
AM6TW-2405DH35Z	9-36	±5	±600	3500	±470	80
AM6TW-2407DH35Z	9-36	±7.2	±416	3500	±470	82
AM6TW-2409DH35Z	9-36	±9	±333	3500	±100	81
AM6TW-2412DH35Z	9-36	±12	±250	3500	±100	83
AM6TW-2415DH35Z	9-36	±15	±200	3500	±47	80
AM6TW-2418DH35Z	9-36	±18	±166	3500	±22	81
AM6TW-2424DH35Z	9-36	±24	±125	3500	±22	81
AM6TW-4803DH35Z	18-72	±3.3	±909	3500	±330	77
AM6TW-4805DH35Z	18-72	±5	±600	3500	±330	81
AM6TW-4807DH35Z	18-72	±7.2	±416	3500	±330	83
AM6TW-4809DH35Z	18-72	±9	±333	3500	±100	81
AM6TW-4812DH35Z	18-72	±12	±250	3500	±68	82
AM6TW-4815DH35Z	18-72	±15	±200	3500	±22	84
AM6TW-4818DH35Z	18-72	±18	±166	3500	±22	80
AM6TW-4824DH35Z	18-72	±24	±125	3500	±22	80

Input Specifications

Parameters	Nominal	Typical	Maximum	Units
Voltage range	24 48	9-36 18-72		VDC
Filter	π(Pi) Network			
Absolute Maximum Rating	24 Vin 48 Vin	-0.7-40 -0.7-80		VDC
Peak Input Voltage time			100	ms
Input reflected 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
Resistance		> 1000		MOhm
Capacitance		470		pF

Output Specifications

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy		±1		%
Short circuit protection	Continuous			
Short circuit restart	Auto-recovery			
Line voltage regulation		±0.5		%
Load voltage regulation	0 to 100% load	±0.5		%
	±3.3, 3.3Vout models, 0 to 100% load	±1.5		%
Ripple & Noise*	At 20MHz Bandwidth	60		mV p-p

* Measured with a 1μF CC.

General Specifications

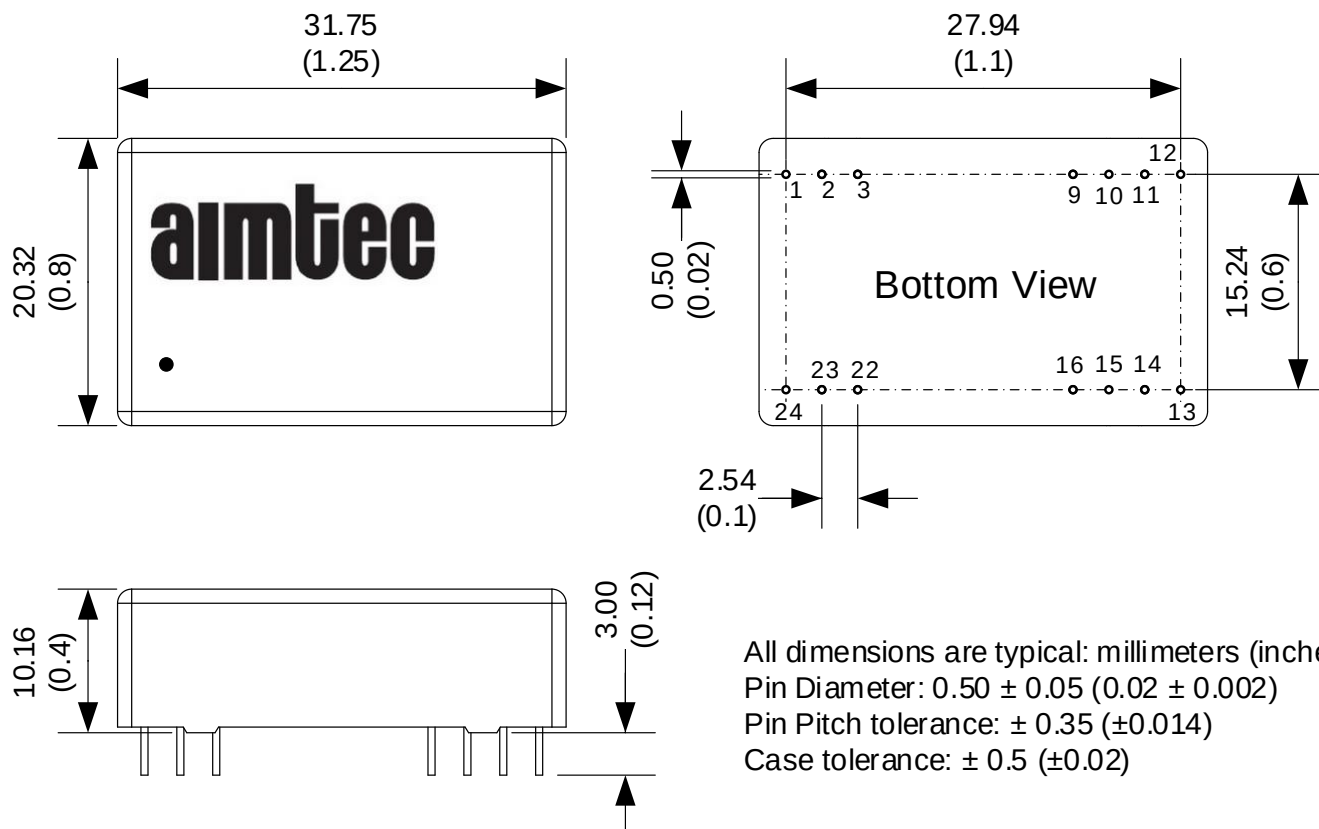
Parameters	Conditions	Typical	Maximum	Units
Switching frequency	100% load	266		KHz
Operating temperature	Full Load without Derating	-40 to +85		°C
Storage temperature		-40 to +125		°C
Temperature coefficient		±0.02		%/°C
Max Case temperature			+100	°C
Cooling	Free air convection			
Humidity			95	%
Case 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 10.16mm	
MTBF	>1 121 000 hrs (MIL-HDBK -217F, Ground Benign, t=+25°C)			
Maximum soldering temperature	1.5mm from case for 10 second		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	CE
Standards	EN55032 Class A with the recommended circuit
	IEC61000-4-2, Perf. Criteria A
	IEC61000-4-3, Perf. Criteria A
	IEC61000-4-4, Perf. Criteria A
	IEC61000-4-5, Perf. Criteria A (external 220uF/100V cap required)
	IEC61000-4-6, Perf. Criteria A
	IEC61000-4-8, Perf. Criteria A
NOTE: Also designed to meet IEC/EN/UL60950-1, 62368-1	

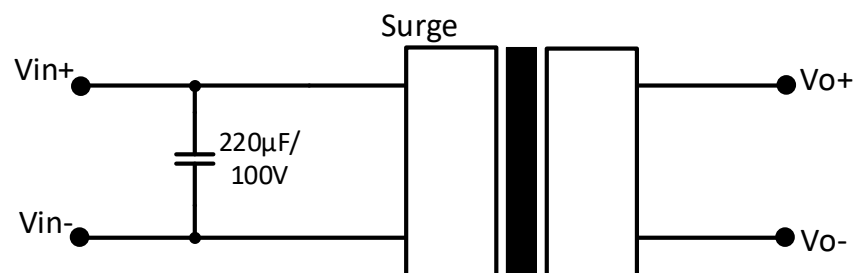
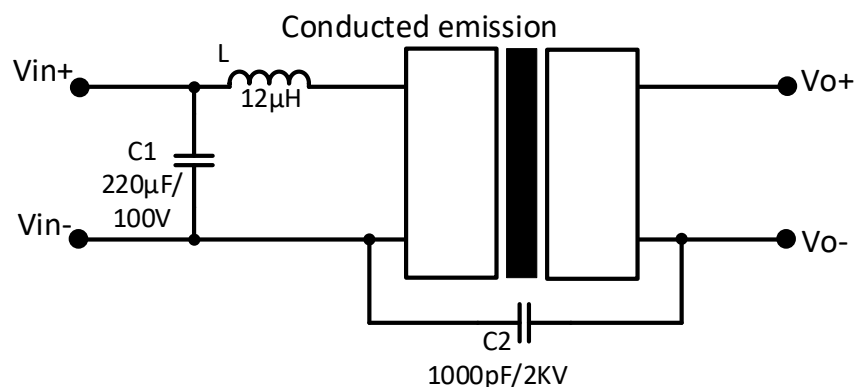
Dimensions



Pin Out Specifications

Pin	1500VDC		3500VDC	
	Single	Dual	Single	Dual
1	+V Input	+V Input	Omitted	Omitted
2	N. C.	-V Output	-V Input	-V Input
3	N. C.	Common	-V Input	-V Input
9	Omitted	Omitted	Omitted	Common
10	-V Output	Common	Omitted	Omitted
11	+V Output	+V Output	N.C.	-V Output
12/13	-V Input	-V Input	Omitted	Omitted
14	+V Output	+V Output	+V Output	+V Output
15	-V Output	Common	Omitted	Omitted
16	Omitted	Omitted	-V Output	Common
22	N. C.	Common	+V Input	+V Input
23	N. C.	-V Output	+V Input	+V Input
23	+V Input	+V Input	Omitted	Omitted

Recommended Circuits



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.