aimtec
Your Power Partner

Series AM6T-Z

6 Watt | DC-DC Converter

FEATURES:

- RoHS compliant
- 24 Pin DIP Package
- Wide 2:1 input range
- High efficiency up to 83%
- 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)	Efficiency (%)	Capacitive load, max (µF)	Isolation (VDC)
AM6T-0503SZ	4.5-9	3.3	1400	73	1000	1500
AM6T-0505SZ	4.5-9	5	1200	76	1000	1500
AM6T-0512SZ	4.5-9	12	500	82	330	1500
AM6T-0515SZ	4.5-9	15	400	82	220	1500
AM6T-1203SZ	9-18	3.3	1400	73	1000	1500
AM6T-1205SZ	9-18	5	1200	77	1000	1500
AM6T-1207SZ	9-18	7.2	833	78	680	1500
AM6T-1209SZ	9-18	9	666	78	680	1500
AM6T-1212SZ	9-18	12	500	81	330	1500
AM6T-1215SZ	9-18	15	400	80	220	1500
AM6T-1218SZ	9-18	18	333	80	68	1500
AM6T-1224SZ	9-18	24	250	80	68	1500
AM6T-2403SZ	18-36	3.3	1400	75	3300	1500
AM6T-2405SZ	18-36	5	1200	80	1000	1500
AM6T-2407SZ	18-36	7.2	833	82	680	1500
AM6T-2409SZ	18-36	9	666	82	680	1500
AM6T-2412SZ	18-36	12	500	80	330	1500
AM6T-2415SZ	18-36	15	400	82	220	1500
AM6T-2418SZ	18-36	18	333	82	220	1500
AM6T-2424SZ	18-36	24	250	82	220	1500
AM6T-4803SZ	36-72	3.3	1400	75	3300	1500
AM6T-4805SZ	36-72	5	1200	80	2200	1500
AM6T-4807SZ	36-72	7.2	833	82	470	1500
AM6T-4809SZ	36-72	9	666	82	470	1500
AM6T-4812SZ	36-72	12	500	80	330	1500
AM6T-4815SZ	36-72	15	400	83	220	1500
AM6T-4818SZ	36-72	18	333	83	100	1500
AM6T-4824SZ	36-72	24	250	83	100	1500
AM6T-0503SH35Z	4.5-9	3.3	1400	73	1000	3500
AM6T-0505SH35Z	4.5-9	5	1200	76	1000	3500
AM6T-0512SH35Z	4.5-9	12	500	82	330	3500
AM6T-0515SH35Z	4.5-9	15	400	82	220	3500
AM6T-1203SH35Z	9-18	3.3	1400	73	1000	3500
AM6T-1205SH35Z	9-18	5	1200	77	1000	3500
AM6T-1207SH35Z	9-18	7.2	833	78	680	3500
AM6T-1209SH35Z	9-18	9	666	78	680	3500
AM6T-1212SH35Z	9-18	12	500	81	330	3500
AM6T-1215SH35Z	9-18	15	400	80	220	3500
AM6T-1218SH35Z	9-18	18	333	80	68	3500
AM6T-1224SH35Z	9-18	24	250	80	68	3500
AM6T-2403SH35Z	18-36	3.3	1400	75	3300	3500
AM6T-2405SH35Z	18-36	5	1200	80	1000	3500
AM6T-2407SH35Z	18-36	7.2	833	82	680	3500
AM6T-2409SH35Z	18-36	9	666	82	680	3500
AM6T-2412SH35Z	18-36	12	500	80	330	3500
AM6T-2415SH35Z	18-36	15	400	82	220	3500

Models
Single output (continued)

Model	Input Voltage (V)	Output Voltage (V)	Output Current max (mA)	Efficiency (%)	Capacitive load, max (µF)	Isolation (VDC)
AM6T-2418SH35Z	18-36	18	333	73	220	3500
AM6T-2424SH35Z	18-36	24	250	77	220	3500
AM6T-4803SH35Z	36-72	3.3	1400	78	3300	3500
AM6T-4805SH35Z	36-72	5	1200	78	2200	3500
AM6T-4807SH35Z	36-72	7.2	833	81	470	3500
AM6T-4809SH35Z	36-72	9	666	80	470	3500
AM6T-4812SH35Z	36-72	12	500	80	330	3500
AM6T-4815SH35Z	36-72	15	400	80	220	3500
AM6T-4818SH35Z	36-72	18	333	75	100	3500
AM6T-4824SH35Z	36-72	24	250	80	100	3500

Models
Dual output

Model	Input Voltage (V)	Output Voltage (V)	Output Current max (mA)	Efficiency (%)	Capacitive load, max (µF)	Isolation (VDC)
AM6T-0503DZ	4.5-9	±3.3	±700	73	±680	1500
AM6T-0505DZ	4.5-9	±5	±600	76	±330	1500
AM6T-0512DZ	4.5-9	±12	±250	82	±100	1500
AM6T-0515DZ	4.5-9	±15	±200	82	±100	1500
AM6T-1203DZ	9-18	±3.3	±909	73	±680	1500
AM6T-1205DZ	9-18	±5	±600	77	±330	1500
AM6T-1207DZ	9-18	±7.2	±416	80	±220	1500
AM6T-1209DZ	9-18	±9	±333	80	±220	1500
AM6T-1212DZ	9-18	±12	±250	80	±100	1500
AM6T-1215DZ	9-18	±15	±200	79	±47	1500
AM6T-1218DZ	9-18	±18	±166	80	±33	1500
AM6T-1224DZ	9-18	±24	±125	80	±33	1500
AM6T-2403DZ	18-36	±3.3	±909	75	±680	1500
AM6T-2405DZ	18-36	±5	±600	78	±330	1500
AM6T-2407DZ	18-36	±7.2	±416	83	±220	1500
AM6T-2409DZ	18-36	±9	±333	83	±220	1500
AM6T-2412DZ	18-36	±12	±250	80	±100	1500
AM6T-2415DZ	18-36	±15	±200	80	±47	1500
AM6T-2418DZ	18-36	±18	±166	80	±33	1500
AM6T-2424DZ	18-36	±24	±125	80	±33	1500
AM6T-4803DZ	36-72	±3.3	±909	73	±680	1500
AM6T-4805DZ	36-72	±5	±600	79	±330	1500
AM6T-4807DZ	36-72	±7.2	±416	79	±220	1500
AM6T-4809DZ	36-72	±9	±333	79	±220	1500
AM6T-4812DZ	36-72	±12	±250	80	±100	1500
AM6T-4815DZ	36-72	±15	±200	80	±47	1500
AM6T-4818DZ	36-72	±18	±166	80	±33	1500
AM6T-4824DZ	36-72	±24	±125	80	±33	1500
AM6T-0503DH35Z	4.5-9	±3.3	±700	73	±680	3500
AM6T-0505DH35Z	4.5-9	±5	±600	76	±330	3500
AM6T-0512DH35Z	4.5-9	±12	±250	82	±100	3500
AM6T-0515DH35Z	4.5-9	±15	±200	82	±100	3500
AM6T-1203DH35Z	9-18	±3.3	±909	73	±680	3500
AM6T-1205DH35Z	9-18	±5	±600	77	±330	3500
AM6T-1207DH35Z	9-18	±7.2	±416	80	±220	3500
AM6T-1209DH35Z	9-18	±9	±333	80	±220	3500
AM6T-1212DH35Z	9-18	±12	±250	80	±100	3500
AM6T-1215DH35Z	9-18	±15	±200	79	±47	3500
AM6T-1218DH35Z	9-18	±18	±166	80	±33	3500

Models

Dual output (continued)

Model	Input Voltage (V)	Output Voltage (V)	Output Current max (mA)	Efficiency (%)	Capacitive load, max (µF)	Isolation (VDC)
AM6T-1224DH35Z	9-18	±24	±125	80	±33	3500
AM6T-2403DH35Z	18-36	±3.3	±909	75	±680	3500
AM6T-2405DH35Z	18-36	±5	±600	78	±330	3500
AM6T-2407DH35Z	18-36	±7.2	±416	83	±220	3500
AM6T-2409DH35Z	18-36	±9	±333	83	±220	3500
AM6T-2412DH35Z	18-36	±12	±250	80	±100	3500
AM6T-2415DH35Z	18-36	±15	±200	80	±47	3500
AM6T-2418DH35Z	18-36	±18	±166	80	±33	3500
AM6T-2424DH35Z	18-36	±24	±125	80	±33	3500
AM6T-4803DH35Z	36-72	±3.3	±909	73	±680	3500
AM6T-4805DH35Z	36-72	±5	±600	79	±330	3500
AM6T-4807DH35Z	36-72	±7.2	±416	79	±220	3500
AM6T-4809DH35Z	36-72	±9	±333	79	±220	3500
AM6T-4812DH35Z	36-72	±12	±250	80	±100	3500
AM6T-4815DH35Z	36-72	±15	±200	80	±47	3500
AM6T-4818DH35Z	36-72	±18	±166	80	±33	3500
AM6T-4824DH35Z	36-72	±24	±909	80	±33	3500

Input Specifications

Parameters	Nominal	Typical	Maximum	Units
Voltage range	5	4.5-9		VDC
	12	9-18		
	24	18-36		
	48	36-72		
Filter	π (Pi) Network			
Absolute Maximum Rating	5 Vin	-0.7-15		VDC
	12 Vin	-0.7-24		
	24 Vin	-0.7-40		
	48 Vin	-0.7-80		
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.

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		±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		%/ºC
Ripple & Noise *	At 20MHz Bandwidth	60		mV p-p

* Measured with 1µF CC.

General Specifications

Parameters	Conditions	Typical	Maximum	Units
Switching frequency	100% load	266		KHz
Operating temperature	Full Load without Derating (except 5V input models see chart)	-40 to +85		°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 0.80 x 0.40 inches	31.75 x 20.32 x 10.16 mm	
MTBF	>1 121 000 hrs (MIL-HDBK -217F, Ground Benign, t=+25°C)			

NOTE: All specifications noted 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.

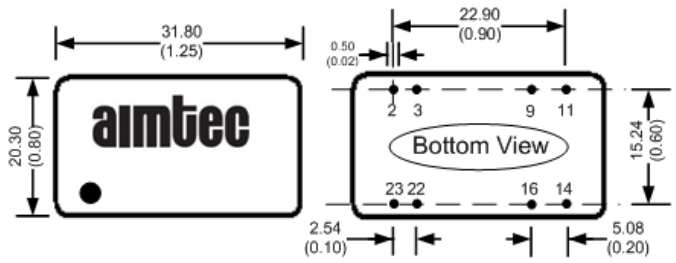
Safety Specifications

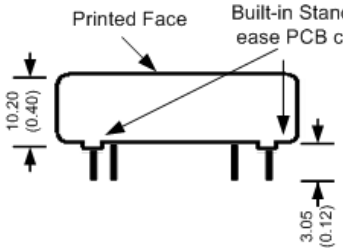
Parameters	
Agency Approvals	UL (pending), except 5Vin models, CE
Standards	EN55032 Class A, with recommended circuit
	IEC61000-4-2, Perf. Criteria A
	IEC61000-4-3, Perf. Criteria A
	IEC61000-4-4, Perf. Criteria A (external 220uF/100V cap required)
	IEC61000-4-5, Perf. Criteria A (external 220uF/100V cap required)
	IEC61000-4-6, Perf. Criteria A
	IEC61000-4-8, Perf. Criteria A
	NOTE: also designed to meet IEC 60950-1:2001 & IEC 62368-1

Pin Out Specifications

Pin	1500 & 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

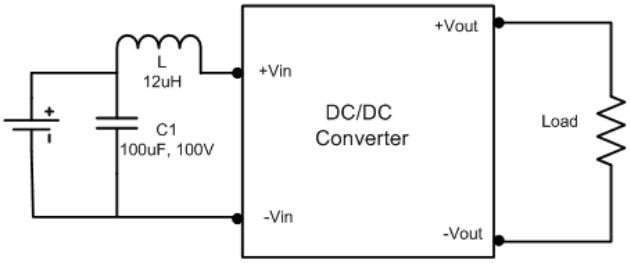




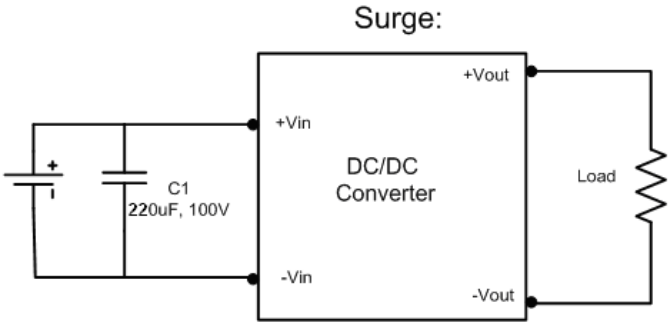
All dimensions are typical: millimeters (inches)
Pin Diameter: 0.50 ± 0.05 (0.02 ± 0.002)
Pin Pitch Tolerance: ± 0.35 (±0.014)
Case Tolerence: ± 0.5 (±0.02)

Test Circuits

Conducted Emissions

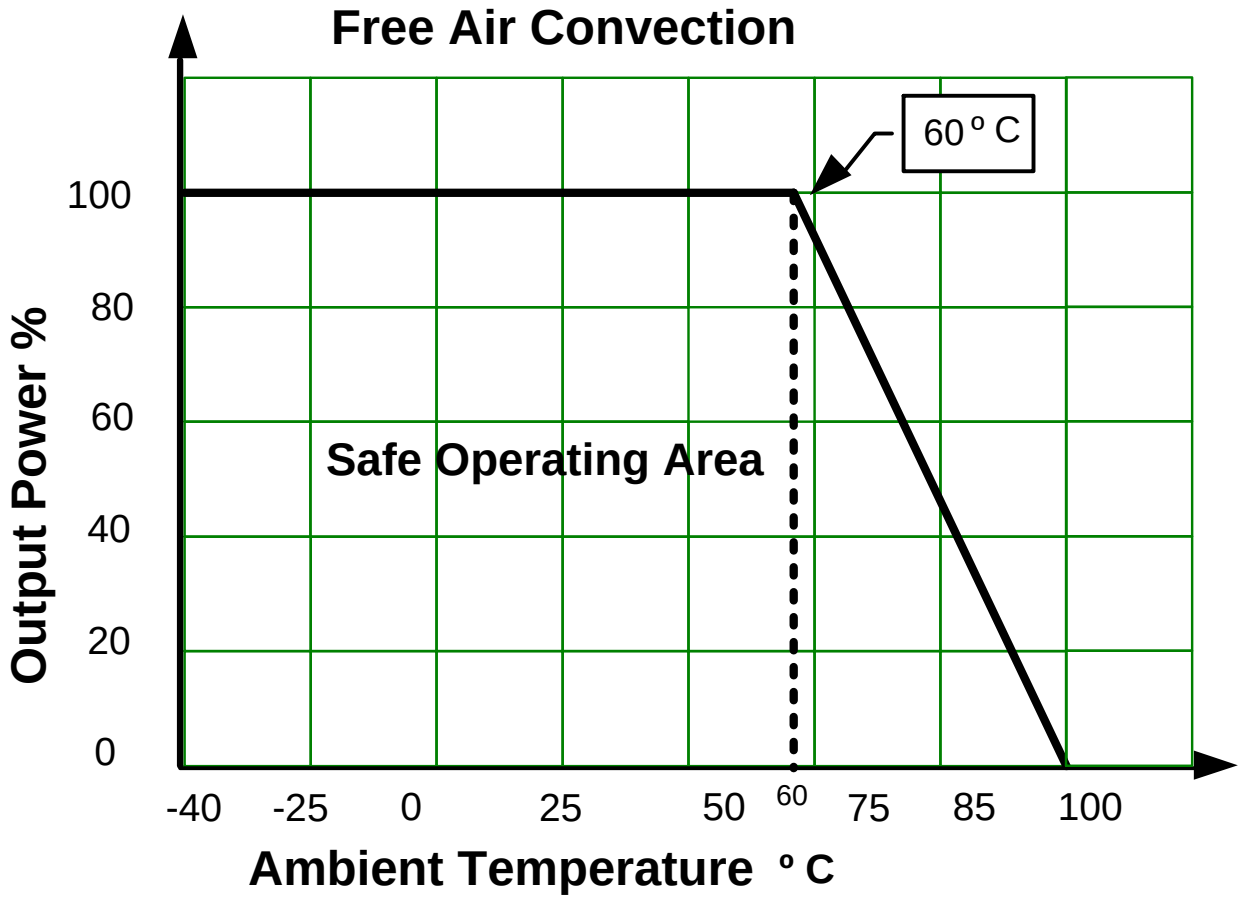


Surge:



Derating

(AM6T-05xxxx Devices only)



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.