aimtec
Your Power Partner

Series AM6TI-Z

6 Watt | DC-DC Converter



FEATURES:

- Under Voltage Lockout
- High efficiency up to 84%
- 24 Pin DIP Package
- Wide 2:1 input range
- Over Load Protection
- Operating temperature -40°C to + 85°C
- Continuous short circuit protection
- Input / Output Isolation 1500 and 3000VDC
- Pin compatible with multiple manufacturers
- Input Under Voltage Protection

Models
Single output

Model	Input Voltage (V)	Output Voltage (V)	Output Current max (mA)	Efficiency (%)	Capacitive load, max (µF)	Isolation (VDC)
AM6TI-1203SZ	9-18	3.3	1400	76	470	1500
AM6TI-1205SZ	9-18	5	1200	80	470	1500
AM6TI-1212SZ	9-18	12	500	84	100	1500
AM6TI-1215SZ	9-18	15	400	85	100	1500
AM6TI-1224SZ	9-18	24	250	83	47	1500
AM6TI-2403SZ	18-36	3.3	1400	75	470	1500
AM6TI-2405SZ	18-36	5	1200	80	470	1500
AM6TI-2412SZ	18-36	12	500	84	100	1500
AM6TI-2415SZ	18-36	15	400	84	100	1500
AM6TI-2424SZ	18-36	24	250	83	47	1500
AM6TI-4803SZ	36-75	3.3	1400	77	470	1500
AM6TI-4805SZ	36-75	5	1200	83	470	1500
AM6TI-4812SZ	36-75	12	500	85	100	1500
AM6TI-4815SZ	36-75	15	400	85	100	1500
AM6TI-4824SZ	36-75	24	250	85	47	1500
AM6TI-1203SH30Z	9-18	3.3	1400	76	470	3000
AM6TI-1205SH30Z	9-18	5	1200	80	470	3000
AM6TI-1212SH30Z	9-18	12	500	84	100	3000
AM6TI-1215SH30Z	9-18	15	400	85	100	3000
AM6TI-1224SH30Z	9-18	24	250	83	47	3000
AM6TI-2403SH30Z	18-36	3.3	1400	75	470	3000
AM6TI-2405SH30Z	18-36	5	1200	80	470	3000
AM6TI-2412SH30Z	18-36	12	500	84	100	3000
AM6TI-2415SH30Z	18-36	15	400	84	100	3000
AM6TI-2424SH30Z	18-36	24	250	83	47	3000
AM6TI-4803SH30Z	36-75	3.3	1400	77	470	3000
AM6TI-4805SH30Z	36-75	5	1200	83	470	3000
AM6TI-4812SH30Z	36-75	12	500	85	100	3000
AM6TI-4815SH30Z	36-75	15	400	85	100	3000
AM6TI-4824SH30Z	36-75	24	250	85	47	3000

Models
Dual output

Model	Input Voltage (V)	Output Voltage (V)	Output Current max (mA)	Efficiency (%)	Capacitive load, max (µF)	Isolation (VDC)
AM6TI-1203DZ	9-18	±3.3	±909	77	±220	1500
AM6TI-1205DZ	9-18	±5	±600	81	±220	1500
AM6TI-1212DZ	9-18	±12	±250	84	±100	1500
AM6TI-1215DZ	9-18	±15	±200	84	±100	1500
AM6TI-1224DZ	9-18	±24	±125	81	±47	1500
AM6TI-2403DZ	18-36	±3.3	±909	77	±220	1500
AM6TI-2405DZ	18-36	±5	±600	80	±220	1500
AM6TI-2412DZ	18-36	±12	±250	83	±100	1500
AM6TI-2415DZ	18-36	±15	±200	84	±100	1500

Models

Dual output (continued)

Model	Input Voltage (V)	Output Voltage (V)	Output Current max (mA)	Efficiency (%)	Capacitive load, max (µF)	Isolation (VDC)
AM6TI-2424DZ	18-36	±24	±125	82	±47	1500
AM6TI-4803DZ	36-75	±3.3	±909	79	±220	1500
AM6TI-4805DZ	36-75	±5	±600	83	±220	1500
AM6TI-4812DZ	36-75	±12	±250	84	±100	1500
AM6TI-4815DZ	36-75	±15	±200	84	±100	1500
AM6TI-4824DZ	36-75	±24	±125	81	±47	1500
AM6TI-1203DH30Z	9-18	±3.3	±909	77	±220	3000
AM6TI-1205DH30Z	9-18	±5	±600	81	±220	3000
AM6TI-1212DH30Z	9-18	±12	±250	84	±100	3000
AM6TI-1215DH30Z	9-18	±15	±200	84	±100	3000
AM6TI-1224DH30Z	9-18	±24	±125	81	±47	3000
AM6TI-2403DH30Z	18-36	±3.3	±909	77	±220	3000
AM6TI-2405DH30Z	18-36	±5	±600	80	±220	3000
AM6TI-2412DH30Z	18-36	±12	±250	83	±100	3000
AM6TI-2415DH30Z	18-36	±15	±200	84	±100	3000
AM6TI-2424DH30Z	18-36	±24	±125	82	±47	3000
AM6TI-4803DH30Z	36-75	±3.3	±909	79	±220	3000
AM6TI-4805DH30Z	36-75	±5	±600	83	±220	3000
AM6TI-4812DH30Z	36-75	±12	±250	84	±100	3000
AM6TI-4815DH30Z	36-75	±15	±200	84	±100	3000
AM6TI-4824DH30Z	36-75	±24	±125	81	±47	3000

Input Specifications

Parameters	Nominal	Typical	Maximum	Units
Voltage range	12	9-18		VDC
	24	18-36		
	48	36-75		
Filter	π (Pi) Network			
Start up time		20		ms
Absolute Maximum Rating	12 Vin	-0.7-25		VDC
	24 Vin	-0.7-50		
	48 Vin	-0.7-100		
Peak Input Voltage time		100		ms
Under Voltage Lockout (ON / OFF)	12 Vin	8.5 / 7.0		VDC
	24 Vin	16.5 / 14.5		
	48 Vin	35.0 / 31.5		
Input Reflected Ripple Current		20		mA p-p

Isolation Specifications

Parameters	Conditions	Typical	Rated	Units
Tested I/O voltage	3 sec		1500 or 3000	VDC
Resistance		> 1000		MOhm
Capacitance		1000		pF

Output Specifications

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy	Vin nom, 100% load	±2		%
Voltage balance	Balanced Load	±2		%
Short Circuit protection	Continuous			
Short circuit restart	Auto recovery			
Over current protection	160% Iout			
Line voltage regulation	LL – HL, 100% load	±0.5		%

Output Specifications (continued)

Parameters	Conditions	Typical	Maximum	Units
Cross regulation (Dual)	1 load=25-100%, other load=100%	±5		%
Load voltage regulation	0 – 100% load	±1.2		%
Temperature coefficient		±0.02		%/ºC
Ripple & Noise	At 20MHz Bandwidth	80		mV p-p
Ripple & Noise (Dual 24V output models)	At 20MHz Bandwidth	100		mV p-p
Rising time		80		ms
Transient Recovery Time	Vin nom, 25% step	300		µs
Transient Response Deviation			±3	%

General Specifications

Parameters	Conditions	Typical	Maximum	Units
Start-up Time		20		ms
Switching frequency	100% load	330		KHz
Operating temperature		-40 to +85		**ºC**
Storage temperature		-55 to +125		**ºC**
Max Case temperature			+100	**ºC**
Cooling	Free air convection			
Humidity			90	%
Case material	Non-Conductive Black Plastic (UL94V-0)			
Weight		13		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	>800,000 hrs (MIL-HDBK -217F, Ground Benign, t=+25ºC)			

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.

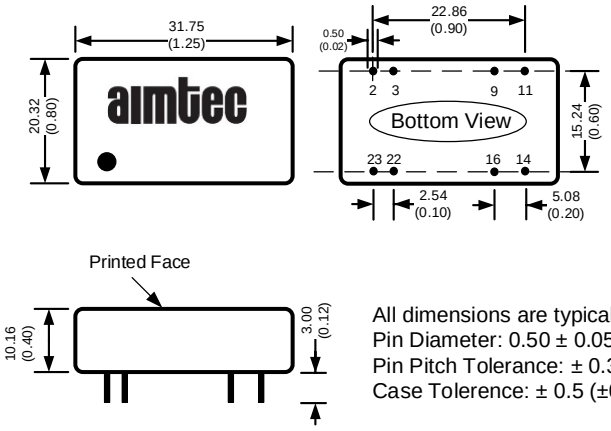
Safety Specifications

Parameters	
Agency Approval	CE/UL 60950-1, 62368-1
Standards	EN 55032 Class A
	IEC61000-4-2, Perf. Criteria A
	IEC61000-4-3, Perf. Criteria A
	IEC61000-4-4, Perf. Criteria A
	IEC61000-4-5, Perf. Criteria A
	IEC61000-4-6, Perf. Criteria A
	IEC61000-4-8, Perf. Criteria A

Pin Out Specifications

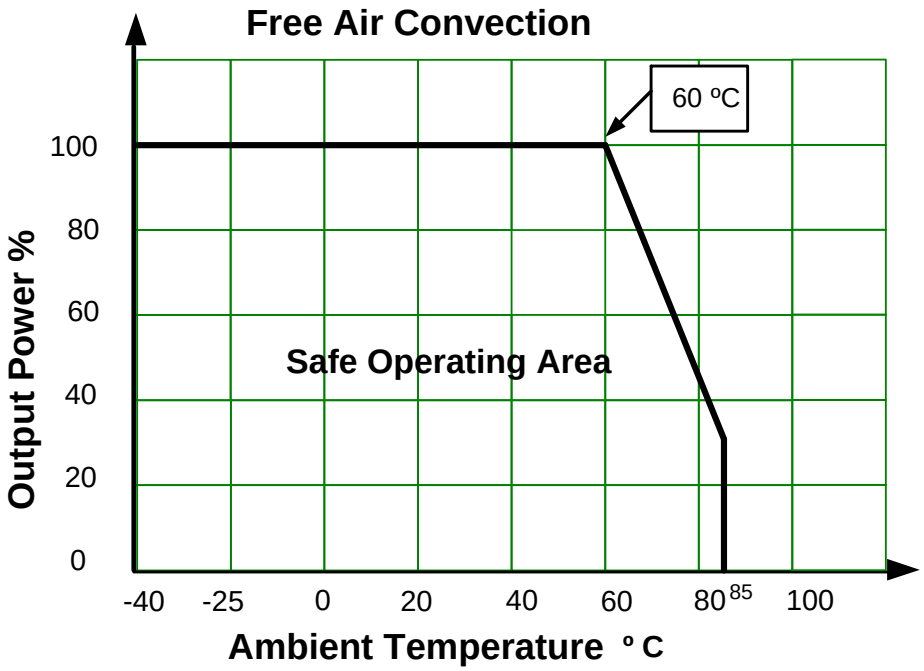
Pin	1500 & 3000VDC	
	Single	Dual
2	-V Input	-V Input
3	-V Input	-V Input
9	NO PIN	Common
11	N. C.	-V Output
14	+V Output	+V Output
16	-V Output	Common
22	+V Input	+V Input
23	+V Input	+V Input

Dimensions

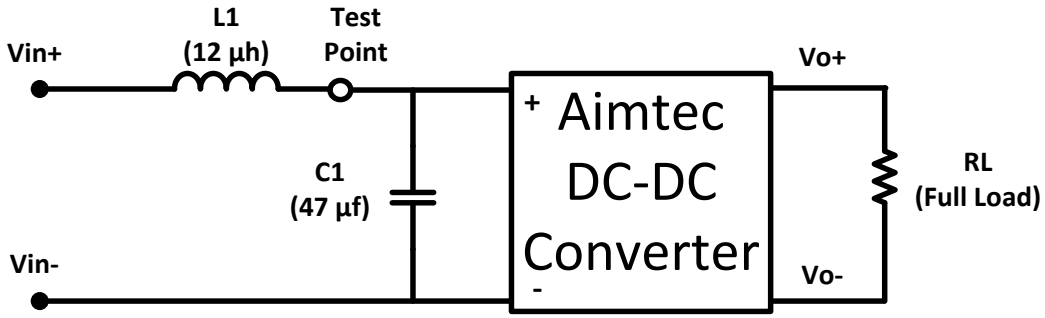


All dimensions are typical: millimeters (inches)
Pin Diameter: 0.50 ± 0.05 (0.02 ± 0.002)
Pin Pitch Tolerance: ± 0.35 (±0.014)
Case Tolerence: ± 0.5 (±0.02)

Derating



Input Reflected Ripple Current Test Circuit



* Tested at full load, and nominal input

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.