

## Series AM6TIW-RZ

### 6 Watt | DC-DC Converter

#### FEATURES:



- Under Voltage Lockout
- High efficiency up to 84%
- 24 Pin DIP Package
- Wide 4:1 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)
AM6TIW-2403S-RZ	9-36	3.3	1400	76	470	1500
AM6TIW-2405S-RZ	9-36	5	1200	80	470	1500
AM6TIW-2412S-RZ	9-36	12	500	84	100	1500
AM6TIW-2415S-RZ	9-36	15	400	84	100	1500
AM6TIW-2424S-RZ	9-36	24	250	84	47	1500
AM6TIW-4803S-RZ	18-75	3.3	1400	76	470	1500
AM6TIW-4805S-RZ	18-75	5	1200	82	470	1500
AM6TIW-4812S-RZ	18-75	12	500	84	100	1500
AM6TIW-4815S-RZ	18-75	15	400	85	100	1500
AM6TIW-4824S-RZ	18-75	24	250	85	47	1500
AM6TIW-2403SH30-RZ	9-36	3.3	1400	76	470	3000
AM6TIW-2405SH30-RZ	9-36	5	1200	80	470	3000
AM6TIW-2412SH30-RZ	9-36	12	500	84	100	3000
AM6TIW-2415SH30-RZ	9-36	15	400	84	100	3000
AM6TIW-2424SH30-RZ	9-36	24	250	84	47	3000
AM6TIW-4803SH30-RZ	18-75	3.3	1400	76	470	3000
AM6TIW-4805SH30-RZ	18-75	5	1200	82	470	3000
AM6TIW-4812SH30-RZ	18-75	12	500	84	100	3000
AM6TIW-4815SH30-RZ	18-75	15	400	85	100	3000
AM6TIW-4824SH30-RZ	18-75	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)
AM6TIW-2403D-RZ	9-36	±3.3	±909	78	±220	1500
AM6TIW-2405D-RZ	9-36	±5	±600	82	±220	1500
AM6TIW-2412D-RZ	9-36	±12	±250	84	±100	1500
AM6TIW-2415D-RZ	9-36	±15	±200	84	±100	1500
AM6TIW-2424D-RZ	9-36	±24	±125	82	±47	1500
AM6TIW-4803D-RZ	18-75	±3.3	±909	79	±220	1500
AM6TIW-4805D-RZ	18-75	±5	±600	82	±220	1500
AM6TIW-4812D-RZ	18-75	±12	±250	84	±100	1500
AM6TIW-4815D-RZ	18-75	±15	±200	84	±100	1500
AM6TIW-4824D-RZ	18-75	±24	±125	81	±47	1500
AM6TIW-2403DH30-RZ	9-36	±3.3	±909	78	±220	3000
AM6TIW-2405DH30-RZ	9-36	±5	±600	82	±220	3000
AM6TIW-2412DH30-RZ	9-36	±12	±250	84	±100	3000
AM6TIW-2415DH30-RZ	9-36	±15	±200	84	±100	3000
AM6TIW-2424DH30-RZ	9-36	±24	±125	82	±47	3000
AM6TIW-4803DH30-RZ	18-75	±3.3	±909	79	±220	3000

## Models

### Dual output (continued)

Model	Input Voltage (V)	Output Voltage (V)	Output Current max (mA)	Efficiency (%)	Capacitive load, max (μF)	Isolation (VDC)
AM6TIW-4805DH30-RZ	18-75	±5	±600	82	±220	3000
AM6TIW-4812DH30-RZ	18-75	±12	±250	84	±100	3000
AM6TIW-4815DH30-RZ	18-75	±15	±200	84	±100	3000
AM6TIW-4824DH30-RZ	18-75	±24	±125	81	±47	3000

## Input Specifications

Parameters	Nominal	Typical	Maximum	Units
Voltage range	24	9-36		VDC
	48	18-75		
Filter	π (Pi) Network			
Start up time		20		ms
Absolute Maximum Rating	24 Vin	-0.7-50		VDC
	48 Vin	-0.7-100		
Peak Input Voltage time		100		ms
Under Voltage Lockout (ON / OFF)	24 Vin	8.5 / 7.0		VDC
	48 Vin	16.5 / 14.5		
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		%
Cross regulation (Dual)	1 load=25-100%, other load=100%	±5		%
Load voltage regulation	0 – 100% load	±1.2		%
Temperature coefficient		±0.02		%/°C
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	(See Derating Chart)		-40 to +85	°C
Storage temperature			-55 to +125	°C
Max Case temperature			+100	°C
Cooling	Free air convection			
Humidity			90	%
Case material	Non-Conductive Black Plastic (UL94V-0)			
Weight		13		g

**General Specifications (continued)**

Parameters	Conditions	Typical	Maximum	Units
Dimensions(L x W x H)	Tolerance $\pm 0.5$ mm or $\pm 0.02$ 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, $t=+25^{\circ}\text{C}$ )			

NOTE: All specifications noted in this datasheet are measured at an ambient temperature of  $25^{\circ}\text{C}$ , humidity < 75%, nominal input voltage and at rated output load unless otherwise specified.

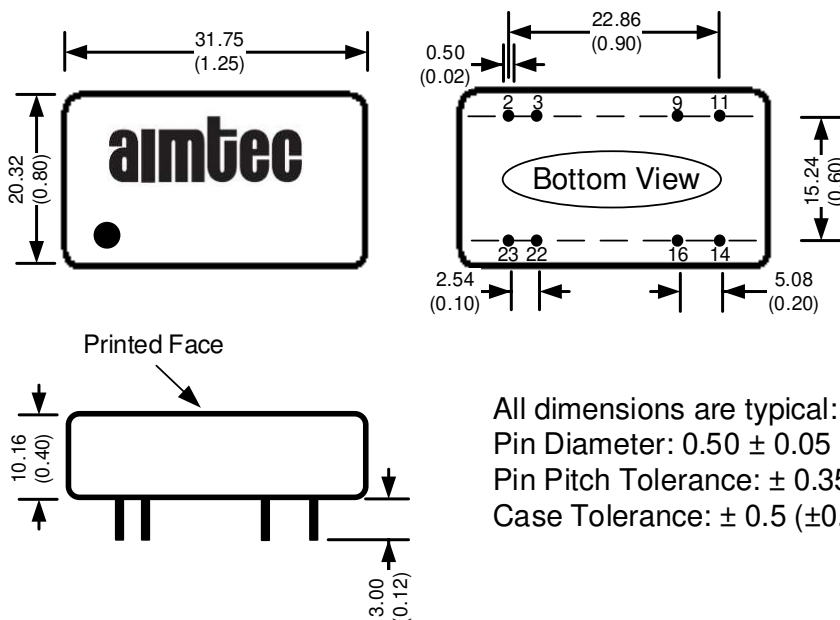
**Safety Specifications**

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**

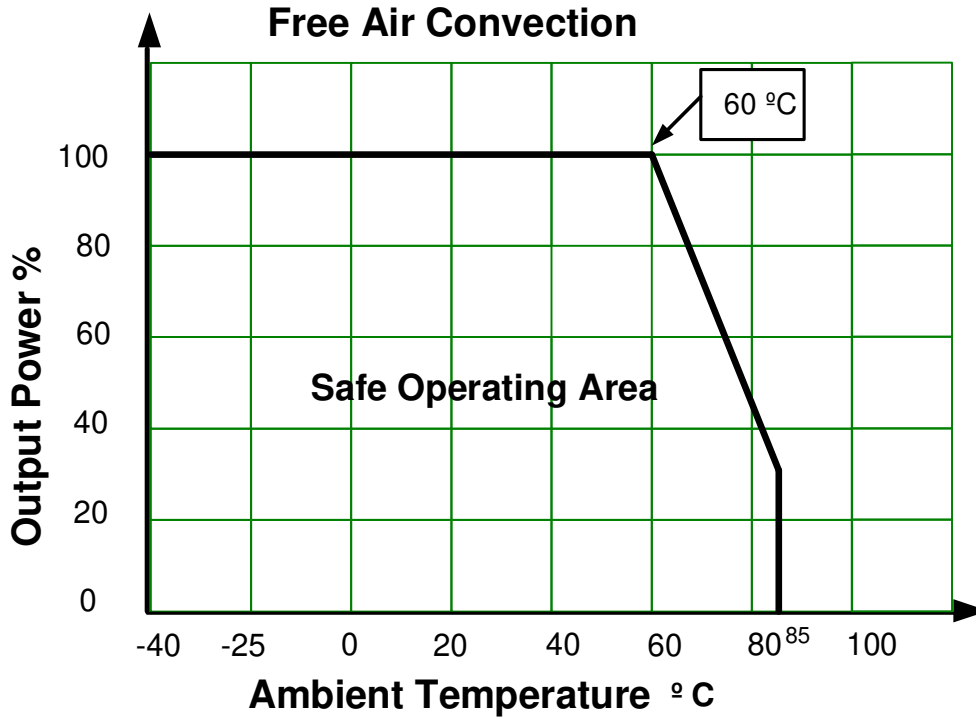
Pin	1500 & 3500VDC	
	Single	Dual
2	-V Input	-V Input
3	-V Input	-V Input
9	NO PIN	Common
11	N. C.	-V Output
14	+V Output	+V Output
16	-V Output	Common
22	+V Input	+V Input
23	+V Input	+V Input

**Dimensions**



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

**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](http://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](http://www.aimtec.com).