

Series AM3TW-VZ

3 Watt | DC-DC Converter



FEATURES:

- Wide Input Range (4:1)
- 24 Pin DIP Package
- Metal Package
- High Efficiency up to 79%
- Operating Temperature -40°C to + 85°C
- Input / Output Isolation 1500 or 3500VDC
- Pin Compatible with Multiple Manufacturers
- Continuous Short Circuit Protection



Models Single Output

Model	Input Voltage (V)	Output Voltage (V)	Output Current Max (mA)	Capacitive Load Max (μF)	Input Current Full No Load (mA)		Efficiency (%)
AM3TW-2405S-VZ	9-36	5	600	2200	178	20	70
AM3TW-2409S-VZ	9-36	9	333	470	176	20	71
AM3TW-2412S-VZ	9-36	12	250	470	171	20	73
AM3TW-2415S-VZ	9-36	15	200	470	171	20	73
AM3TW-2424S-VZ	9-36	24	125	220	176	30	71
AM3TW-4805S-VZ	18-72	5	600	2200	83	10	75
AM3TW-4809S-VZ	18-72	9	333	470	81	10	77
AM3TW-4812S-VZ	18-72	12	250	470	79	10	79
AM3TW-4815S-VZ	18-72	15	200	470	79	10	79
AM3TW-4824S-VZ	18-72	24	125	220	82	10	76
AM3TW-2405SH35-VZ	9-36	5	600	2200	178	20	70
AM3TW-2409SH35-VZ	9-36	9	333	470	176	20	71
AM3TW-2412SH35-VZ	9-36	12	250	470	171	20	73
AM3TW-2415SH35-VZ	9-36	15	200	470	171	20	73
AM3TW-2424SH35-VZ	9-36	24	125	220	176	30	71
AM3TW-4805SH35-VZ	18-72	5	600	2200	83	10	75
AM3TW-4809SH35-VZ	18-72	9	333	470	81	10	77
AM3TW-4812SH35-VZ	18-72	12	250	470	79	10	79
AM3TW-4815SH35-VZ	18-72	15	200	470	79	10	79
AM3TW-4824SH35-VZ	18-72	24	125	220	82	10	76

Models Dual Output

Model	Input Voltage (V)	Output Voltage (V)	Output Current Max (mA)	Capacitive Load Max (μF)	Input Current Full No Load (mA)		Efficiency (%)
AM3TW-2405D-VZ	9-36	±5	±300	±1000	178	20	70
AM3TW-2409D-VZ	9-36	±9	±167	±220	173	20	72
AM3TW-2412D-VZ	9-36	±12	±125	±220	168	20	74
AM3TW-2415D-VZ	9-36	±15	±100	±220	168	20	74
AM3TW-2424D-VZ	9-36	±24	±63	±100	176	30	73
AM3TW-4805D-VZ	18-72	±5	±300	±1000	85	10	73
AM3TW-4809D-VZ	18-72	±9	±167	±220	83	10	75
AM3TW-4812D-VZ	18-72	±12	±125	±220	80	10	78
AM3TW-4815D-VZ	18-72	±15	±100	±220	80	10	78
AM3TW-4824D-VZ	18-72	±24	±63	±100	82	10	76
AM3TW-2405DH35-VZ	9-36	±5	±300	±1000	178	20	70
AM3TW-2409DH35-VZ	9-36	±9	±167	±220	173	20	72
AM3TW-2412DH35-VZ	9-36	±12	±125	±220	168	20	74
AM3TW-2415DH35-VZ	9-36	±15	±100	±220	168	20	74
AM3TW-2424DH35-VZ	9-36	±24	±63	±100	176	30	73
AM3TW-4805DH35-VZ	18-72	±5	±300	±1000	85	10	73
AM3TW-4809DH35-VZ	18-72	±9	±167	±220	83	10	75
AM3TW-4812DH35-VZ	18-72	±12	±125	±220	80	10	78
AM3TW-4815DH35-VZ	18-72	±15	±100	±220	80	10	78
AM3TW-4824DH35-VZ	18-72	±24	±63	±100	82	10	76

Input Specifications

Parameters	Nominal	Typical	Maximum	Units
Voltage Range	24	9-36		VCD
	48	18-72		VCD
Filter	π (Pi) Network			
Absolute Max Rating	24 Vin	-0.7-40		VCD
	48 Vin	-0.7-80		VCD
Peak Input Voltage time		15		ms
Input Reflected Ripple Current*		35		mA p-p

* The input reflected ripple current should be measured with connected 12 μ H inductor and a 47 μ F capacitor.

Isolation Specifications

Parameters	Conditions	Typical	Rated	Units
Tested I/O Voltage	60 sec, H35 models		3500	VDC
	60 sec, other models		1500	VDC
Resistance		> 1000		MOhm
Capacitance		60		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			± 0.5	%
Temperature Coefficient		± 0.02		%/ $^{\circ}$ C
Ripple & Noise	At 20MHz Bandwidth		60	mV p-p
Minimum load*		33		%

* Specifications may not be met if the minimum load is not satisfied.

General Specifications

Parameters	Conditions	Typical	Maximum	Units
Switching Frequency	100% load	100-400		KHz
Operating Temperature	Full Load (see derating chart)	-40 to +85		$^{\circ}$ C
Storage Temperature		-40 to +125		$^{\circ}$ C
Max Case Temperature			100	$^{\circ}$ 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 10.2 mm	
MTBF	>1,000,000 hrs (MIL-HDBK -217F, Ground Benign, $t=+25^{\circ}$ C)			
Manual soldering temperature	1.5mm from case for 10sec		260	$^{\circ}$ C

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

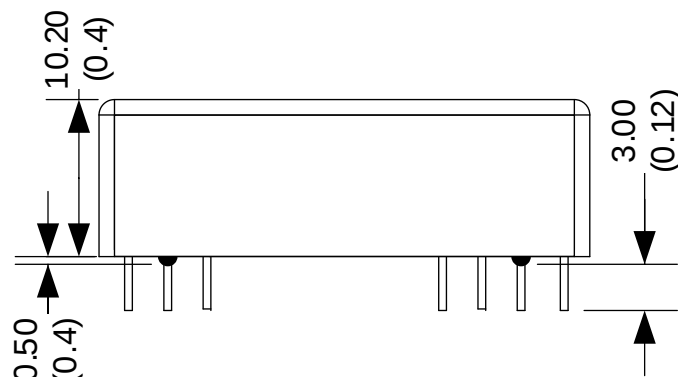
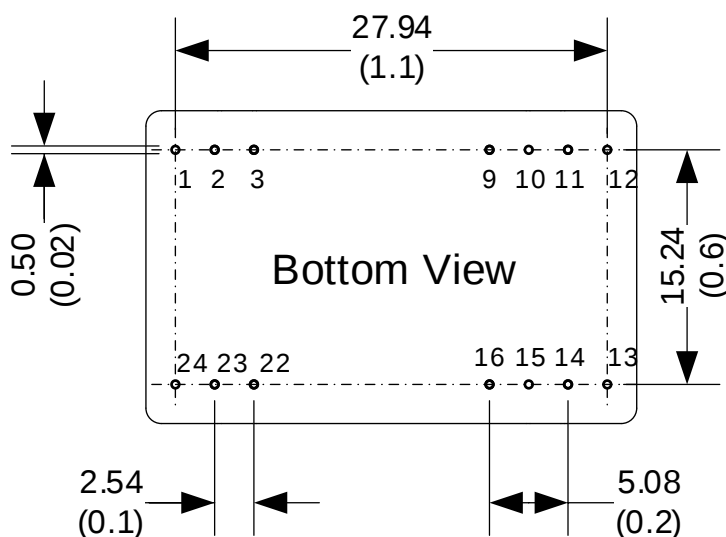
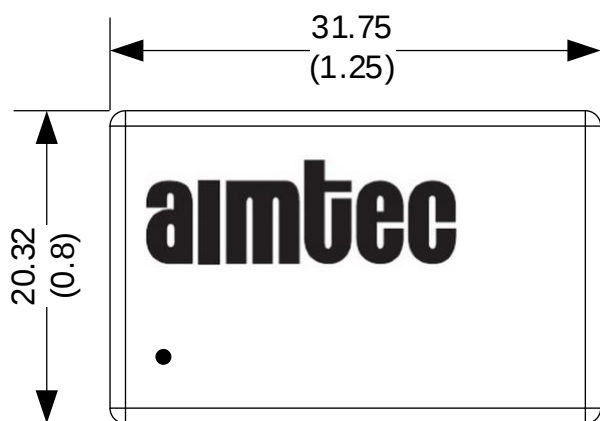
Safety Specifications

Parameters	
Standards	Designed to meet IEC 60950-1

Pin Out Specifications

Pin	1500VDC		3500VDC	
	Single	Dual	Single	Dual
1	+V Input	+V Input	No pin	No pin
2	N.C.	-V Output	-V Input	-V Input
3	N.C.	Common	-V Input	-V Input
9	No pin	No pin	No pin	Common
10	-V Output	Common	No pin	No pin
11	+V Output	+V Output	N.C.	-V Output
12/13	-V Input	-V Input	No pin	No pin
14	+V Output	+V Output	+V Output	+V Output
15	-V Output	Common	No pin	No pin
16	No pin	No pin	-V Output	Common
22	N.C.	Common	+V Input	+V Input
23	N.C.	-V Output	+V Input	+V Input
24	+V Input	+V Input	No pin	No pin

Dimensions



All dimensions are typical: millimeters (inches)

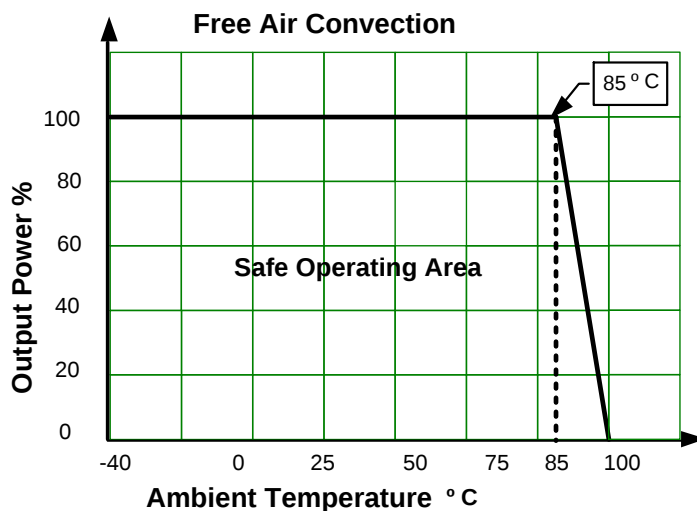
Pin Diameter: 0.50 ± 0.05 (0.02 ± 0.002)

Pin Pitch tolerance: ± 0.35 (± 0.014)

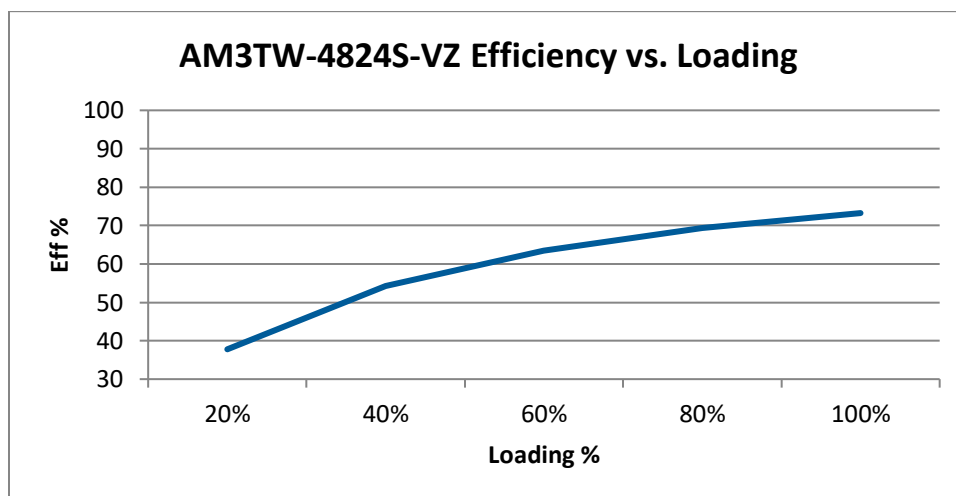
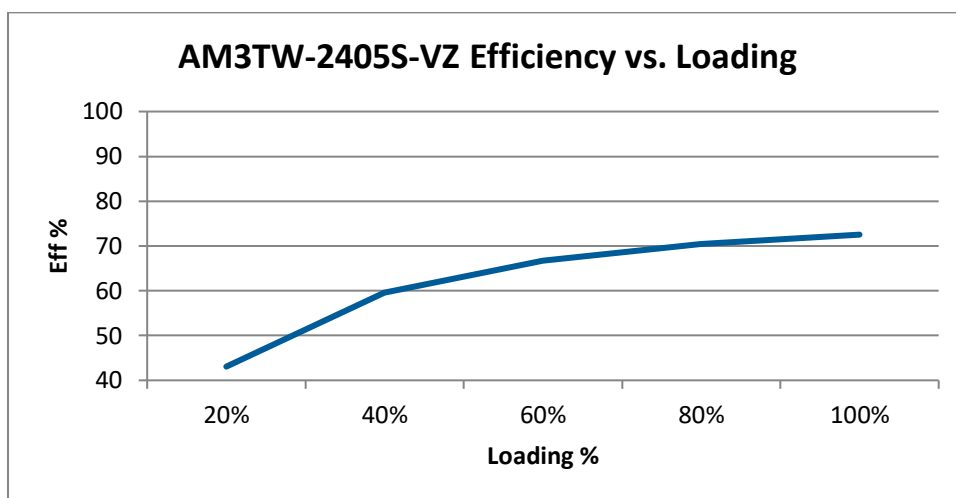
Case tolerance: ± 0.5 (± 0.02)

Stand-off tolerance: ± 0.1 (± 0.004)

Derating



Typical Efficiency Example Charts



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.