

## Series AM3TW-RVZ

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 VDC
- 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-RVZ | 9-36              | 5                  | 600                     | 2200                     | 178                               | 20 | 70             |
| AM3TW-2409S-RVZ | 9-36              | 9                  | 333                     | 470                      | 174                               | 20 | 72             |
| AM3TW-2412S-RVZ | 9-36              | 12                 | 250                     | 470                      | 167                               | 20 | 75             |
| AM3TW-2415S-RVZ | 9-36              | 15                 | 200                     | 470                      | 167                               | 20 | 75             |
| AM3TW-2424S-RVZ | 9-36              | 24                 | 125                     | 220                      | 169                               | 30 | 74             |
| AM3TW-4805S-RVZ | 18-72             | 5                  | 600                     | 2200                     | 83                                | 10 | 75             |
| AM3TW-4809S-RVZ | 18-72             | 9                  | 333                     | 470                      | 81                                | 10 | 77             |
| AM3TW-4812S-RVZ | 18-72             | 12                 | 250                     | 470                      | 79                                | 10 | 79             |
| AM3TW-4815S-RVZ | 18-72             | 15                 | 200                     | 470                      | 79                                | 10 | 79             |
| AM3TW-4824S-RVZ | 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-RVZ | 9-36              | ±5                 | ±300                    | ±1000                    | 178                               | 20 | 70             |
| AM3TW-2409D-RVZ | 9-36              | ±9                 | ±167                    | ±220                     | 173                               | 20 | 72             |
| AM3TW-2412D-RVZ | 9-36              | ±12                | ±125                    | ±220                     | 169                               | 20 | 74             |
| AM3TW-2415D-RVZ | 9-36              | ±15                | ±100                    | ±220                     | 169                               | 20 | 74             |
| AM3TW-2424D-RVZ | 9-36              | ±24                | ±63                     | ±100                     | 176                               | 30 | 73             |
| AM3TW-4805D-RVZ | 18-72             | ±5                 | ±300                    | ±1000                    | 85                                | 10 | 73             |
| AM3TW-4809D-RVZ | 18-72             | ±9                 | ±167                    | ±220                     | 83                                | 10 | 75             |
| AM3TW-4812D-RVZ | 18-72             | ±12                | ±125                    | ±220                     | 80                                | 10 | 78             |
| AM3TW-4815D-RVZ | 18-72             | ±15                | ±100                    | ±220                     | 80                                | 10 | 78             |
| AM3TW-4824D-RVZ | 18-72             | ±24                | ±63                     | ±100                     | 82                                | 10 | 76             |

### Input Specifications

| Parameters              | Nominal            | Typical | Maximum | Units |
|-------------------------|--------------------|---------|---------|-------|
| Voltage Range           | 24                 | 9-36    |         | VDC   |
|                         | 48                 | 18-72   |         |       |
| Filter                  | $\pi$ (Pi) Network |         |         |       |
| Absolute Max Rating     | 24 Vin             | -0.7-40 |         | VDC   |
|                         | 48 Vin             | -0.7-80 |         |       |
| Start Up Time           |                    | 20      |         | ms    |
| Peak Input Voltage Time |                    | 15      |         | ms    |

### Isolation Specifications

| Parameters         | Conditions | Typical | Rated | Units |
|--------------------|------------|---------|-------|-------|
| Tested I/O Voltage | 60 sec     |         | 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   |         | %/°C   |
| Ripple & Noise *         | At 20MHz Bandwidth | 60      |         | mV p-p |
| Voltage Balance          | Balanced Load      | ±1      |         | %      |

\* In order to achieve ripple and noise specification, a 100µF capacitor is required to be connected to the output of the converter

## General Specifications

| Parameters             | Conditions                                              | Typical                 | Maximum                  | Units |
|------------------------|---------------------------------------------------------|-------------------------|--------------------------|-------|
| Switching Frequency    | 100% load                                               | 100-400                 |                          | KHz   |
| Operating Temperature  | Full Load (see derating 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                 |                                                         | 12.16                   |                          | 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 10.16 mm |       |
| MTBF                   | >1,000,000 hrs (MIL-HDBK -217F, Ground Benign, t=+25°C) |                         |                          |       |

## Safety Specifications

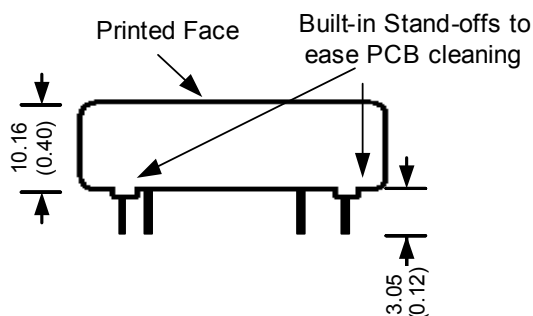
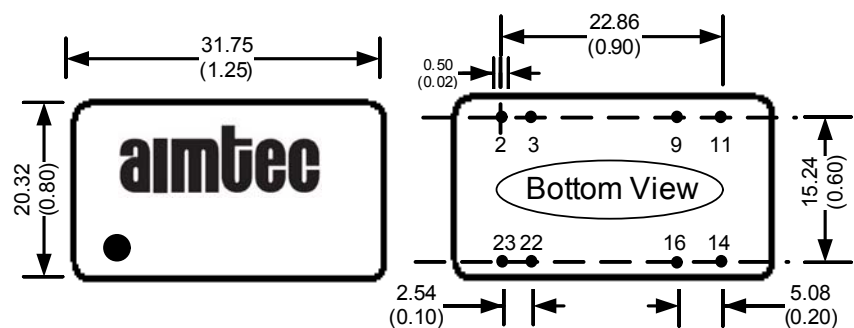
| Parameters |                              |
|------------|------------------------------|
| Standards  | Designed to meet IEC 60950-1 |

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.

## Pin Out Specifications

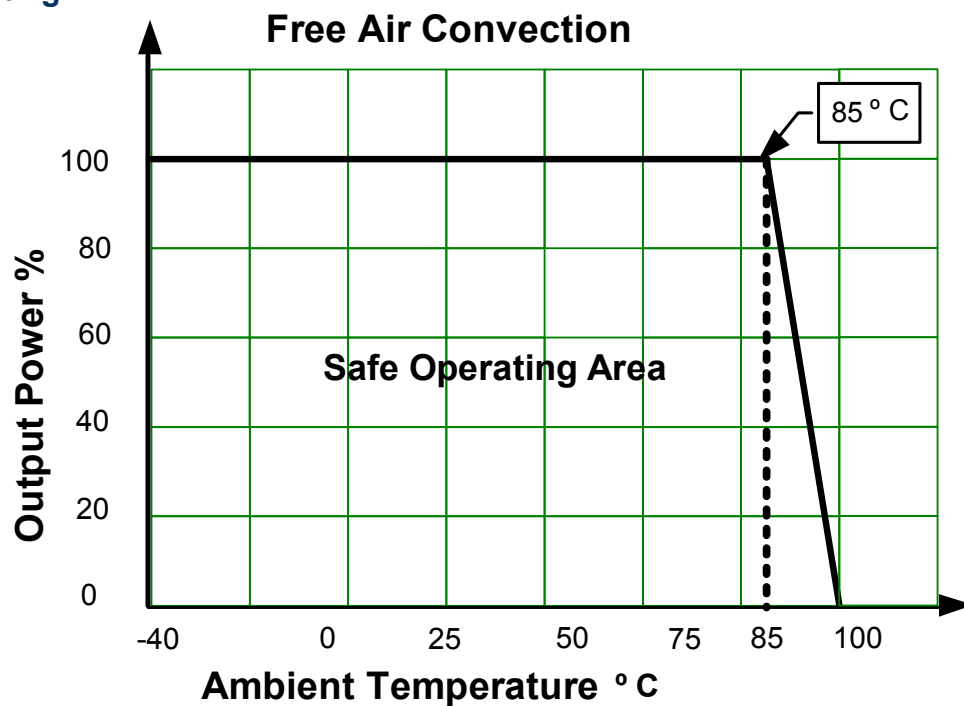
| Pin | 1500 VDC  |           |
|-----|-----------|-----------|
|     | Single    | Dual      |
| 2   | -V Input  | -V Input  |
| 3   | -V Input  | -V Input  |
| 9   | No pin    | Common    |
| 11  | N.C.      | -V Output |
| 14  | +V Output | +V Output |
| 16  | -V Output | Common    |
| 22  | +V Input  | +V Input  |
| 23  | +V Input  | +V Input  |

## Dimensions

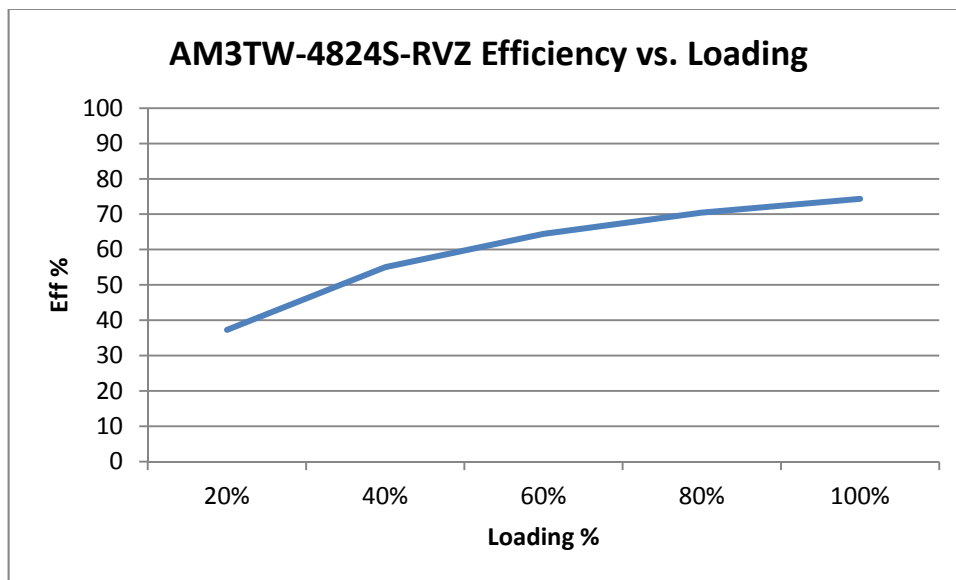
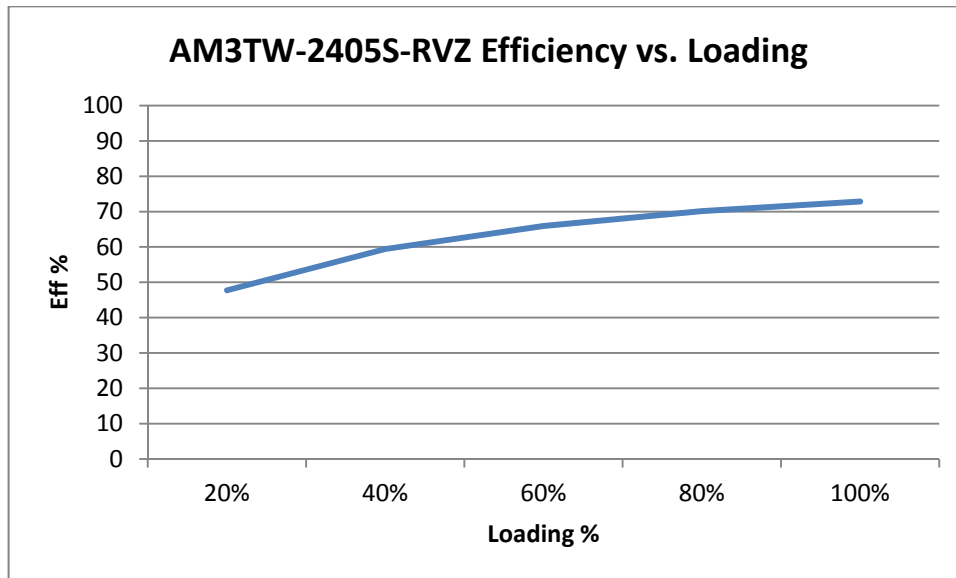


All dimensions are typical: millimeters (inches)  
 Pin Diameter:  $0.50 \pm 0.05$  ( $0.02 \pm 0.002$ )  
 Pin Pitch Tolerance:  $\pm 0.35$  ( $\pm 0.014$ )  
 Case Tolerance:  $\pm 0.5$  ( $\pm 0.02$ )

## Derating



**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](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).