aimtec
Your Power Partner

# Series AM3TW-Z
## 3 Watt | DC-DC Converter


### FEATURES:

- RoHS compliant
- Low profile metal package
- High efficiency up to 82%
- Wide 4:1 input range
- Operating temperature -40°C to + 85°C
- Input / Output Isolation 1500 and 3500VDC
- Pin compatible with multiple manufacturers
- Continuous short circuit protection

## Models
## Single output

RoHS

| Model | Input Voltage (V) | Output Voltage (V) | Output Current max (mA) | Isolation (VDC) | Capacitive load, max (µF) | Efficiency (%) |
|---|---|---|---|---|---|---|
| AM3TW-2403SZ | 9-36 | 3.3 | 900 | 1500 | 680 | 75 |
| AM3TW-2405SZ | 9-36 | 5 | 600 | 1500 | 470 | 78 |
| AM3TW-2407SZ | 9-36 | 7.2 | 417 | 1500 | 330 | 80 |
| AM3TW-2409SZ | 9-36 | 9 | 333 | 1500 | 100 | 80 |
| AM3TW-2412SZ | 9-36 | 12 | 250 | 1500 | 68 | 80 |
| AM3TW-2415SZ | 9-36 | 15 | 200 | 1500 | 47 | 80 |
| AM3TW-2418SZ | 9-36 | 18 | 167 | 1500 | 22 | 81 |
| AM3TW-2424SZ | 9-36 | 24 | 125 | 1500 | 22 | 80 |
| AM3TW-4803SZ | 18-72 | 3.3 | 900 | 1500 | 680 | 75 |
| AM3TW-4805SZ | 18-72 | 5 | 600 | 1500 | 470 | 78 |
| AM3TW-4807SZ | 18-72 | 7.2 | 417 | 1500 | 470 | 80 |
| AM3TW-4809SZ | 18-72 | 9 | 333 | 1500 | 100 | 80 |
| AM3TW-4812SZ | 18-72 | 12 | 250 | 1500 | 68 | 80 |
| AM3TW-4815SZ | 18-72 | 15 | 200 | 1500 | 47 | 80 |
| AM3TW-4818SZ | 18-72 | 18 | 167 | 1500 | 68 | 81 |
| AM3TW-4824SZ | 18-72 | 24 | 125 | 1500 | 22 | 80 |
| | | | | | | |
| AM3TW-2403SH35Z | 9-36 | 3.3 | 900 | 3500 | 680 | 75 |
| AM3TW-2405SH35Z | 9-36 | 5 | 600 | 3500 | 470 | 78 |
| AM3TW-2409SH35Z | 9-36 | 9 | 333 | 3500 | 100 | 80 |
| AM3TW-2412SH35Z | 9-36 | 12 | 250 | 3500 | 68 | 80 |
| AM3TW-2415SH35Z | 9-36 | 15 | 200 | 3500 | 47 | 80 |
| AM3TW-2424SH35Z | 9-36 | 24 | 125 | 3500 | 22 | 80 |
| AM3TW-4803SH35Z | 18-72 | 3.3 | 900 | 3500 | 680 | 75 |
| AM3TW-4805SH35Z | 18-72 | 5 | 600 | 3500 | 470 | 78 |
| AM3TW-4807SH35Z | 18-72 | 7.2 | 417 | 3500 | 470 | 80 |
| AM3TW-4809SH35Z | 18-72 | 9 | 333 | 3500 | 100 | 80 |
| AM3TW-4812SH35Z | 18-72 | 12 | 250 | 3500 | 68 | 80 |
| AM3TW-4815SH35Z | 18-72 | 15 | 200 | 3500 | 47 | 80 |
| AM3TW-4824SH35Z | 18-72 | 24 | 125 | 3500 | 22 | 80 |

## Models
## Dual output

| Model | Input Voltage (V) | Output Voltage (V) | Output Current max (mA) | Isolation (VDC) | Capacitive load, max (µF) | Efficiency (%) |
|---|---|---|---|---|---|---|
| AM3TW-2403DZ | 9-36 | ±3.3 | ±454 | 1500 | ±330 | 75 |
| AM3TW-2405DZ | 9-36 | ±5 | ±300 | 1500 | ±220 | 78 |
| AM3TW-2407DZ | 9-36 | ±7.2 | ±208 | 1500 | ±220 | 79 |
| AM3TW-2409DZ | 9-36 | ±9 | ±166 | 1500 | ±47 | 80 |
| AM3TW-2412DZ | 9-36 | ±12 | ±125 | 1500 | ±33 | 80 |
| AM3TW-2415DZ | 9-36 | ±15 | ±100 | 1500 | ±22 | 80 |
| AM3TW-2418DZ | 9-36 | ±18 | ±84 | 1500 | ±10 | 77 |

## Models

### Dual output

| Model | Input Voltage (V) | Output Voltage (V) | Output Current max (mA) | Isolation (VDC) | Capacitive load, max (µF) | Efficiency (%) |
|---|---|---|---|---|---|---|
| AM3TW-2424DZ | 9-36 | ±24 | ±63 | 1500 | ±10 | 80 |
| AM3TW-4803DZ | 18-72 | ±3.3 | ±454 | 1500 | ±330 | 75 |
| AM3TW-4805DZ | 18-72 | ±5 | ±300 | 1500 | ±220 | 78 |
| AM3TW-4807DZ | 18-72 | ±7.2 | ±208 | 1500 | ±100 | 78 |
| AM3TW-4809DZ | 18-72 | ±9 | ±166 | 1500 | ±47 | 80 |
| AM3TW-4812DZ | 18-72 | ±12 | ±125 | 1500 | ±33 | 80 |
| AM3TW-4815DZ | 18-72 | ±15 | ±100 | 1500 | ±22 | 80 |
| AM3TW-4818DZ | 18-72 | ±18 | ±84 | 1500 | ±22 | 76 |
| AM3TW-4824DZ | 18-72 | ±24 | ±63 | 1500 | ±10 | 80 |
| | | | | | | |
| AM3TW-2403DH35Z | 9-36 | ±3.3 | ±454 | 3500 | ±330 | 75 |
| AM3TW-2405DH35Z | 9-36 | ±5 | ±300 | 3500 | ±220 | 78 |
| AM3TW-2407DH35Z | 9-36 | ±7.2 | ±208 | 3500 | ±220 | 79 |
| AM3TW-2409DH35Z | 9-36 | ±9 | ±166 | 3500 | ±47 | 80 |
| AM3TW-2412DH35Z | 9-36 | ±12 | ±125 | 3500 | ±33 | 80 |
| AM3TW-2415DH35Z | 9-36 | ±15 | ±100 | 3500 | ±22 | 80 |
| AM3TW-2424DH35Z | 9-36 | ±24 | ±63 | 3500 | ±10 | 80 |
| AM3TW-4803DH35Z | 18-72 | ±3.3 | ±454 | 3500 | ±330 | 75 |
| AM3TW-4805DH35Z | 18-72 | ±5 | ±300 | 3500 | ±220 | 78 |
| AM3TW-4809DH35Z | 18-72 | ±9 | ±166 | 3500 | ±47 | 80 |
| AM3TW-4812DH35Z | 18-72 | ±12 | ±125 | 3500 | ±33 | 80 |
| AM3TW-4815DH35Z | 18-72 | ±15 | ±100 | 3500 | ±22 | 80 |
| AM3TW-4824DH35Z | 18-72 | ±24 | ±63 | 3500 | ±10 | 80 |

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.

## Input Specifications

| Parameters | Nominal | Typical | Maximum | Units |
|---|---|---|---|---|
| Voltage range | 24<br>48 | 9-36<br>18-72 | | VDC |
| Filter | | π (Pi) Network | | |
| Absolute Maximum Rating | 24 Vin<br>48 Vin | -0.7-40<br>-0.7-80 | | VDC |
| Peak Input Voltage time | | 100 | | ms |
| Input Reflected ripple current * | | 35 | | mA p-p |

## Isolation Specifications

| Parameters | Conditions | Typical | Rated | Units |
|---|---|---|---|---|
| Tested I/O voltage | 60 sec | | 1500 and 3500 | VDC |
| Tested Case/ I, O voltage | 60 sec | | 1000 | VDC |
| Resistance | | > 1000 | | MOhm |
| Capacitance | | 470 | | pF |

## Output Specifications

| Parameters | Conditions | Typical | Maximum | Units |
|---|---|---|---|---|
| Voltage accuracy | | ±1 | | % |
| Short Circuit protection | Continuous | | | |
| Short circuit restart | Automatic | | | |
| Line voltage regulation | LL-HL | ±0.5 | | % |
| Load voltage regulation | 3.3/±3.3Vout models | ±1.5 | | % |
| | Other models | ±0.5 | | % |
| Temperature coefficient | | ±0.02 | | %/°C |
| Ripple & Noise* | 20MHz Bandwidth | 60 | | mV p-p |

* Measured with a 1µF CC.

## General Specifications

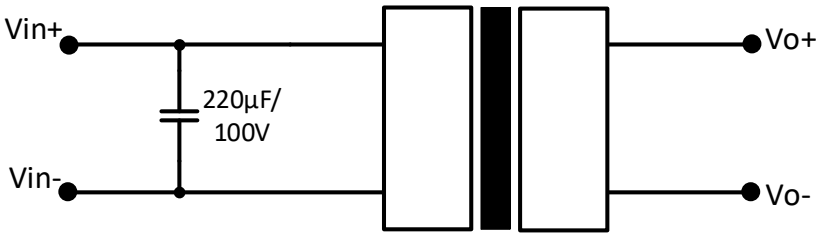
| Parameters | Conditions | Typical | Maximum | Units |
|---|---|---|---|---|
| Switching frequency | 100% load | 266 | | KHz |
| Operating temperature | Full Load without Derating | -40 to +85 | | °C |
| Storage temperature | | -40 to +125 | | °C |
| Case temperature | | | 100 | °C |
| Cooling | Free air convection | | | |
| Humidity | Non condensing | | 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 0.4inches 31.75 x 20.32 x 10.16mm | | |
| MTBF | >1 121 000 hrs (MIL-HDBK -217F, Ground Benign, t=+25°C) | | | |

## Safety Specifications

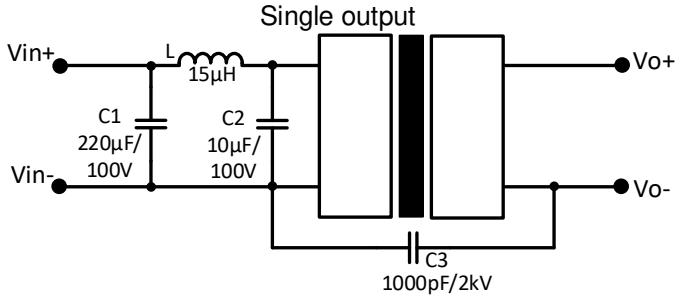
| Parameters | |
|---|---|
| Standards | Designed to meet IEC/EN/UL60950-1, 62368-1 |
| | EN55032 Class A, with recommended EMI circuit |
| | IEC61000-4-2, Perf. Criteria A |
| | IEC61000-4-3, Perf. Criteria A |
| | IEC61000-4-4, Perf. Criteria A (external 220uF/100V cap required) |
| | IEC61000-4-5, Perf. Criteria A (external 220uF/100V cap required) |
| | IEC61000-4-6, Perf. Criteria A |
| | IEC61000-4-8, Perf. Criteria A |

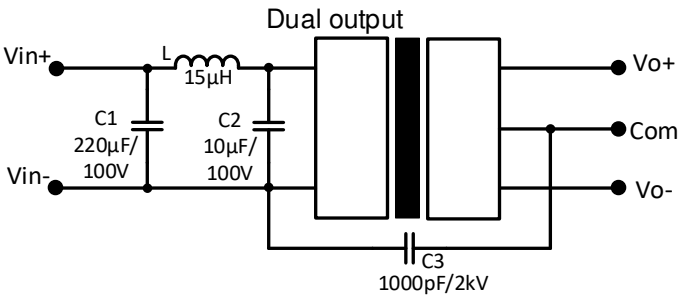
## Recommended Circuits

### Surge/EFT




### EMI

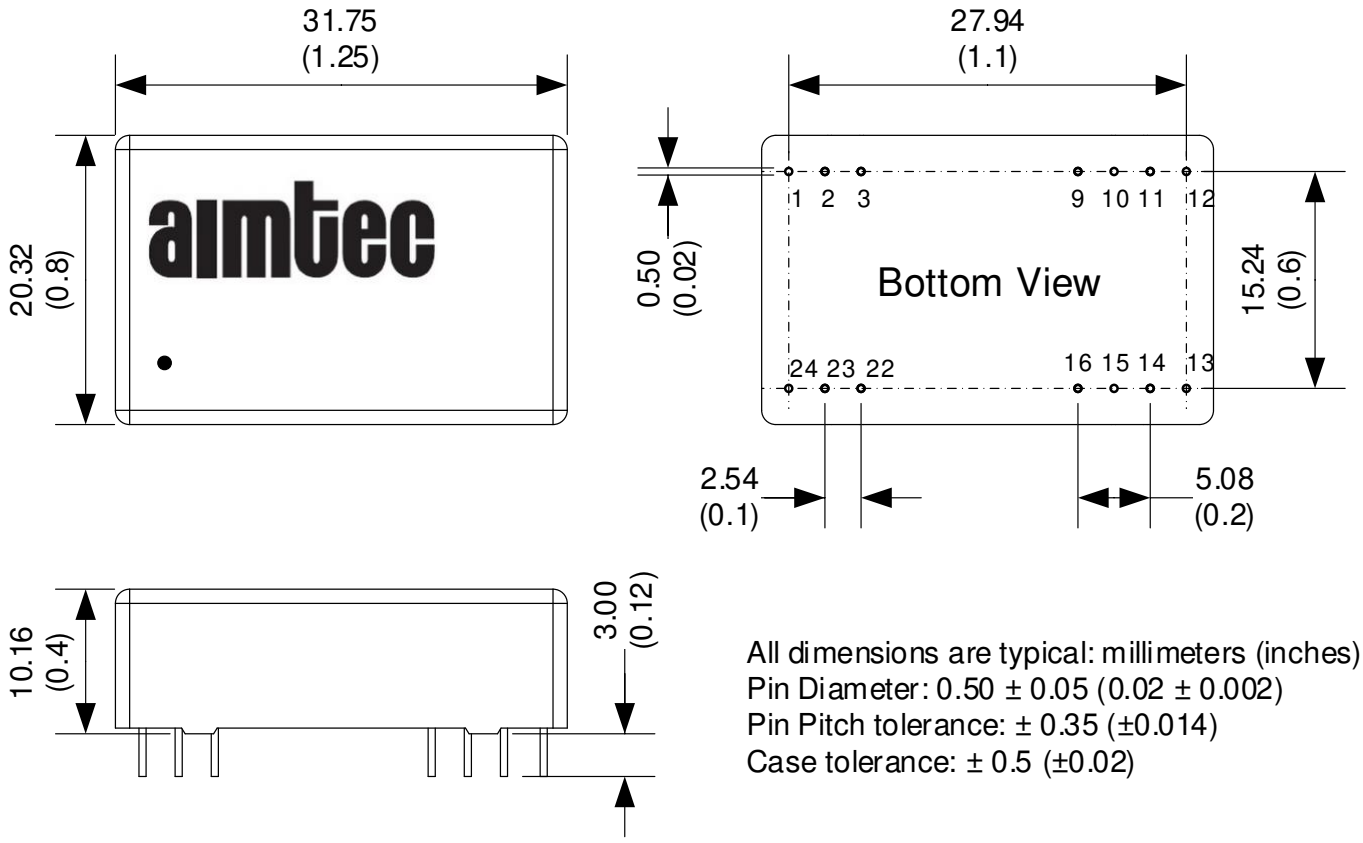


## Pin Out Specifications

| 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)

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