

# AM3TW Series



## 3 watt dc-dc converters

- 24-PIN DIP PACKAGE
- LOW PROFILE METAL PACKAGE
- HIGH EFFICIENCY UP TO 79%
- WIDE 4:1 INPUT RANGE
- INPUT/OUTPUT ISOLATION: 1500 & 3500VDC
- OPERATING TEMPERATURE: -40°C ... +85°C
- PIN-COMPATIBLE WITH MULTIPLE MANUFACTURERS
- CONTINUOUS SHORT CIRCUIT PROTECTION

## GENERAL DESCRIPTION

Our AM3TW series is a family of cost effective 3W single and dual output DC-DC converters. These converters combine nickel-coated copper package in a 24-pin DIP compatible case with high performance features such as 1500 & 3500VDC input/output isolation voltage, continuous short circuit protection with automatic restart and tight line / load regulation. Wide range devices operate over 4:1 input voltage range providing stable output voltage. Devices are encapsulated using flame retardant resin. Input voltages of 24

& 48VDC with output voltages of 3.3, 5, 7.2, 9, 12, 15, 18, 24, ±3.3, ±5, ±7.2, ±9, ±12, ±15, ±18 & ±24VDC. High performance features include high efficiency operation up to 79% and output voltage accuracy of ±1% maximum. All models are packaged in a low profile 31.75x20.32x10.16mm 24 pin DIP nickel-coated copper case. Operation is specified over the full operating temperature range of -40°C to +85°C with no derating required. Cooling is by free-air convection.

## ELECTRICAL SPECIFICATIONS

Specifications typical at +25°C, nominal input voltage, rated output current unless otherwise specified

### Input Specifications:

|               |                                     |
|---------------|-------------------------------------|
| Voltage range | 24 VDC, 9~36VDC<br>48 VDC, 18~72VDC |
| Filter        | π (Pi) Network                      |

### Isolation Specifications:

|               |                |
|---------------|----------------|
| Rated voltage | 1500 & 3500VDC |
| Resistance    | > 1000MΩ       |
| Capacitance   | 80pF, typ.     |

### General Specifications:

|                     |                        |
|---------------------|------------------------|
| Efficiency          | 75% to 79%             |
| Switching Frequency | 250KHz, typ. 100% load |

### Physical Specifications:

|               |  |
|---------------|--|
| Dimensions    | 31.75x20.32x10.16mm<br>1.25x0.8x0.4 inches |
| Weight        | 21g  |
| Case material | Nickel-Coated Copper                       |

### Output Specifications:

|                               |                 |
|-------------------------------|-----------------|
| Voltage accuracy              | ±1%, max.       |
| Voltage balance (Dual Output) | ±1%             |
| Ripple & noise (at 20MHz BW)  | 60mVp-p, max.   |
| Short circuit protection      | Continuous      |
| Short circuit restart         | Automatic       |
| Line voltage regulation       | ±0.5%, max.     |
| Load voltage regulation       | ±0.5%, max.     |
| Temperature Coefficient       | ±0.02%/°C, typ. |

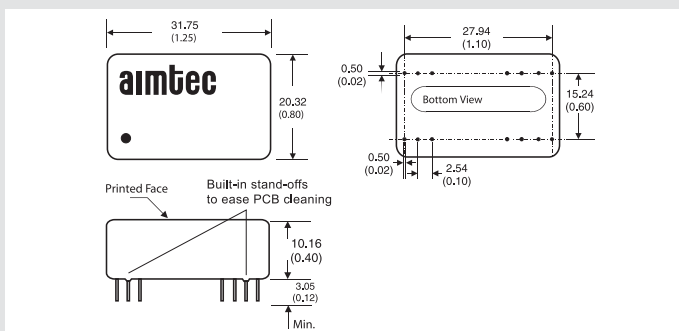
### Environmental Specifications:

|                                 |                     |
|---------------------------------|---------------------|
| Operating temperature (ambient) | -40°C ... +85°C     |
| Storage temperature             | -55°C +125°C        |
| Case temperature                | +100°C, max.        |
| Derating                        | None required       |
| Humidity (non-condensing)       | Up to 90%           |
| Cooling                         | Free-air Convection |

MTBF: >1 222000 hrs (MIL-HDBK-217F, Ground Benign, t=+25°C)

Specifications are subject to change without notification

## OUTLINE DIMENSIONS & PIN CONNECTIONS



| Pin   | 1500VDC   |           | 3500VDC   |           |
|-------|-----------|-----------|-----------|-----------|
|       | Single    | Dual      | Single    | Dual      |
| 1     | +V Input  | +V Input  | Omitted   | Omitted   |
| 2     | N.C.      | -V Output | -V Input  | -V Input  |
| 3     | N.C.      | Common    | -V Input  | -V Input  |
| 9     | Omitted   | Omitted   | N.C.      | Common    |
| 10    | -V Output | Common    | Omitted   | Omitted   |
| 11    | +V Output | +V Output | N.C.      | -V Output |
| 12/13 | -V Input  | -V Input  | Omitted   | Omitted   |
| 14    | +V Output | +V Output | +V Output | +V Output |
| 15    | -V Output | Common    | Omitted   | Omitted   |
| 16    | Omitted   | Omitted   | -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  | Omitted   | Omitted   |

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# AM3TW Series

## MODELS Single output

| Models            |                   | Input Voltage | Output Voltage | Output Current max. |
|-------------------|-------------------|---------------|----------------|---------------------|
| Isolation 1500VDC | Isolation 3500VDC |               |                |                     |
| AM3TW-2403S       | AM3TW-2403SH35    | 9VDC - 36VDC  | 3.3VDC         | 800mA               |
| AM3TW-2405S       | AM3TW-2405SH35    |               | 5VDC           | 600mA               |
| AM3TW-2407S       | AM3TW-2407SH35    |               | 7.2VDC         | 417mA               |
| AM3TW-2409S       | AM3TW-2409SH35    |               | 9VDC           | 333mA               |
| AM3TW-2412S       | AM3TW-2412SH35    |               | 12VDC          | 250mA               |
| AM3TW-2415S       | AM3TW-2415SH35    |               | 15VDC          | 200mA               |
| AM3TW-2418S       | AM3TW-2418SH35    |               | 18VDC          | 167mA               |
| AM3TW-2424S       | AM3TW-2424SH35    |               | 24VDC          | 125mA               |
| AM3TW-4803S       | AM3TW-4803SH35    | 18VDC - 72VDC | 3.3VDC         | 800mA               |
| AM3TW-4805S       | AM3TW-4805SH35    |               | 5VDC           | 600mA               |
| AM3TW-4807S       | AM3TW-4807SH35    |               | 7.2VDC         | 417mA               |
| AM3TW-4809S       | AM3TW-4809SH35    |               | 9VDC           | 333mA               |
| AM3TW-4812S       | AM3TW-4812SH35    |               | 12VDC          | 250mA               |
| AM3TW-4815S       | AM3TW-4815SH35    |               | 15VDC          | 200mA               |
| AM3TW-4818S       | AM3TW-4818SH35    |               | 18VDC          | 167mA               |
| AM3TW-4824S       | AM3TW-4824SH35    |               | 24VDC          | 125mA               |

## Dual output

| Models            |                   | Input Voltage | Output Voltage | Output Current max. |
|-------------------|-------------------|---------------|----------------|---------------------|
| Isolation 1500VDC | Isolation 3500VDC |               |                |                     |
| AM3TW-2403D       | AM3TW-2403DH35    | 9VDC - 36VDC  | ±3.3VDC        | ±400mA              |
| AM3TW-2405D       | AM3TW-2405DH35    |               | ±5VDC          | ±300mA              |
| AM3TW-2407D       | AM3TW-2407DH35    |               | ±7.2VDC        | ±208mA              |
| AM3TW-2409D       | AM3TW-2409DH35    |               | ±9VDC          | ±167mA              |
| AM3TW-2412D       | AM3TW-2412DH35    |               | ±12VDC         | ±125mA              |
| AM3TW-2415D       | AM3TW-2415DH35    |               | ±15VDC         | ±100mA              |
| AM3TW-2418D       | AM3TW-2418DH35    |               | ±18VDC         | ±84mA               |
| AM3TW-2424D       | AM3TW-2424DH35    |               | ±24VDC         | ±63mA               |
| AM3TW-4803D       | AM3TW-4803DH35    | 18VDC - 72VDC | ±3.3VDC        | ±400mA              |
| AM3TW-4805D       | AM3TW-4805DH35    |               | ±5VDC          | ±300mA              |
| AM3TW-4807D       | AM3TW-4807DH35    |               | ±7.2VDC        | ±208mA              |
| AM3TW-4809D       | AM3TW-4809DH35    |               | ±9VDC          | ±167mA              |
| AM3TW-4812D       | AM3TW-4812DH35    |               | ±12VDC         | ±125mA              |
| AM3TW-4815D       | AM3TW-4815DH35    |               | ±15VDC         | ±100mA              |
| AM3TW-4818D       | AM3TW-4818DH35    |               | ±18VDC         | ±84mA               |
| AM3TW-4824D       | AM3TW-4824DH35    |               | ±24VDC         | ±63mA               |