

# AM6TW Series

## 6 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: 1500VDC & 3500VDC
- OPERATING TEMPERATURE: -40°C ... +85°C
- PIN-COMPATIBLE WITH MULTIPLE MANUFACTURERS
- CONTINUOUS SHORT CIRCUIT PROTECTION

### GENERAL DESCRIPTION

Our AM6TW series is a family of cost effective 6W single and dual output DC-DC converters. These converters combine a nickel-coated copper package in a 24-pin DIP compatible case with high performance features such as 1500VDC & 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,  $\pm 3.3$ ,  $\pm 5$ ,  $\pm 7.2$ ,  $\pm 9$ ,  $\pm 12$ ,  $\pm 15$ ,  $\pm 18$  &  $\pm 24$ VDC. High performance features include high efficiency operation up to 79% and output voltage accuracy of  $\pm 1\%$  maximum.

### ELECTRICAL SPECIFICATIONS

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

#### Input Specifications:

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

#### Isolation Specifications:

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

#### General Specifications:

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

#### Physical Specifications:

|               |   |
|---------------|---|
| Dimensions    | 31.75x20.32x10.16 mm<br>1.25x0.80x0.40 inches |
| Weight        | 26 g  |
| Case material | Nickel-Coated Copper                          |

#### Output Specifications:

|                                |                                     |
|--------------------------------|-------------------------------------|
| Voltage accuracy               | $\pm 1\%$ max.                      |
| Voltage balance (dual outputs) | $\pm 1\%$                           |
| Ripple & Noise (at 20MHz BW)   | 60m V p-p, max.                     |
| Short circuit protection       | Continuous                          |
| Short circuit restart          | Automatic                           |
| Line voltage regulation        | $\pm 0.5\%$ , max.                  |
| Load voltage regulation        | $\pm 0.5\%$ , max.                  |
| Temperature Coefficient        | $\pm 0.2\%/^{\circ}\text{C}$ , typ. |

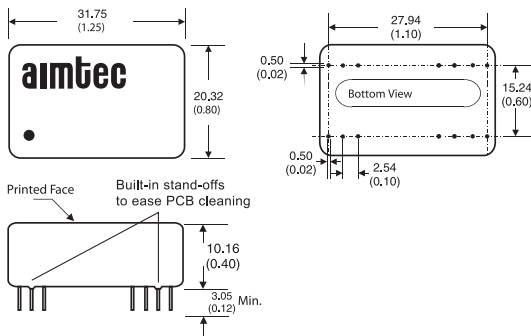
#### Environmental Specifications:

|                                 |                     |
|---------------------------------|---------------------|
| 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: > 1,003,000 hrs (MIL-HDBK-217F, Ground Benign,  $t=+25^{\circ}\text{C}$ )

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   |

# AM6TW Series

## MODELS Single output

| Models            |                   | Input Voltage | Ouput Voltage | Ouput Current max. |
|-------------------|-------------------|---------------|---------------|--------------------|
| Isolation 1500VDC | Isolation 3500VDC |               |               |                    |
| AM6TW-2403S       | AM6TW-2403SH35    | 9VDC - 36VDC  | 3.3VDC        | 1500mA             |
| AM6TW-2405S       | AM6TW-2405SH35    |               | 5VDC          | 1200mA             |
| AM6TW-2407S       | AM6TW-2407SH35    |               | 7.2VDC        | 833mA              |
| AM6TW-2409S       | AM6TW-2409SH35    |               | 9VDC          | 667mA              |
| AM6TW-2412S       | AM6TW-2412SH35    |               | 12VDC         | 500mA              |
| AM6TW-2415S       | AM6TW-2415SH35    |               | 15VDC         | 400mA              |
| AM6TW-2418S       | AM6TW-2418SH35    |               | 18VDC         | 333mA              |
| AM6TW-2424S       | AM6TW-2424SH35    |               | 24VDC         | 250mA              |
| AM6TW-4803S       | AM6TW-4803SH35    | 18VDC - 72VDC | 3.3VDC        | 1500mA             |
| AM6TW-4805S       | AM6TW-4805SH35    |               | 5VDC          | 1200mA             |
| AM6TW-4807S       | AM6TW-4807SH35    |               | 7.2VDC        | 833mA              |
| AM6TW-4809S       | AM6TW-4809SH35    |               | 9VDC          | 667mA              |
| AM6TW-4812S       | AM6TW-4812SH35    |               | 12VDC         | 500mA              |
| AM6TW-4815S       | AM6TW-4815SH35    |               | 15VDC         | 400mA              |
| AM6TW-4818S       | AM6TW-4818SH35    |               | 18VDC         | 333mA              |
| AM6TW-4824S       | AM6TW-4824SH35    |               | 24VDC         | 250mA              |

## Dual output

| Models            |                   | Input Voltage | Ouput Voltage | Ouput Current max. |
|-------------------|-------------------|---------------|---------------|--------------------|
| Isolation 1500VDC | Isolation 3500VDC |               |               |                    |
| AM6TW-2403D       | AM6TW-2403DH35    | 9VDC - 36VDC  | ±3.3VDC       | ±750mA             |
| AM6TW-2405D       | AM6TW-2405DH35    |               | ±5VDC         | ±600mA             |
| AM6TW-2407D       | AM6TW-2407DH35    |               | ±7.2VDC       | ±417mA             |
| AM6TW-2409D       | AM6TW-2409DH35    |               | ±9VDC         | ±334mA             |
| AM6TW-2412D       | AM6TW-2412DH35    |               | ±12VDC        | ±250mA             |
| AM6TW-2415D       | AM6TW-2415DH35    |               | ±15VDC        | ±200mA             |
| AM6TW-2418D       | AM6TW-2418DH35    |               | ±18VDC        | ±167mA             |
| AM6TW-2424D       | AM6TW-2424DH35    |               | ±24VDC        | ±125mA             |
| AM6TW-4803D       | AM6TW-4803DH35    | 18VDC - 72VDC | ±3.3VDC       | ±750mA             |
| AM6TW-4805D       | AM6TW-4805DH35    |               | ±5VDC         | ±600mA             |
| AM6TW-4807D       | AM6TW-4807DH35    |               | ±7.2VDC       | ±417mA             |
| AM6TW-4809D       | AM6TW-4809DH35    |               | ±9VDC         | ±334mA             |
| AM6TW-4812D       | AM6TW-4812DH35    |               | ±12VDC        | ±250mA             |
| AM6TW-4815D       | AM6TW-4815DH35    |               | ±15VDC        | ±200mA             |
| AM6TW-4818D       | AM6TW-4818DH35    |               | ±18VDC        | ±167mA             |
| AM6TW-4824D       | AM6TW-4824DH35    |               | ±24VDC        | ±125mA             |