



3 watt dc-dc converters

- 24 PIN DIP PACKAGE
- WIDE 2:1 INPUT RANGE
- HIGH EFFICIENCY UP TO 79%
- CONTINUOUS SHORT CIRCUIT PROTECTION
- INPUT/OUTPUT ISOLATION: 1500 & 3500VDC
- OPERATING TEMPERATURE: -40°C ... +85°C
- PIN-COMPATIBLE WITH MULTIPLE MANUFACTURERS
- LOW PROFILE METAL PACKAGE

GENERAL DESCRIPTION

Our AM3T 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 2:1 input voltage range providing stable output voltage. Devices are encapsulated using flame retardant resin. Ninety six models operate from input voltages of 12,

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 & ± 24 VDC. High performance features include high efficiency operation up to 79% and output voltage accuracy of $\pm 1\%$ maximum. All models are package in a low profile 31.75 x 20.32 x 10.16mm 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 | 12VDC, 9~18VDC 24VDC, 18~36VDC 48VDC, 36~72VDC |
| Filter | π (Pi) Network |

Isolation Specifications:

| | |
|------------------------|------------------|
| Rated voltage (60 sec) | 1500, 3500VDC |
| Resistance | > 1000M Ω |
| Capacitance | 80pF, 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 |

General Specifications:

| | |
|---------------------|------------------------|
| Efficiency | 74% to 79% |
| Switching frequency | 250KHz, typ. 100% load |

Output Specifications:

| | |
|-------------------------------|--------------------------------------|
| Voltage accuracy | $\pm 1\%$, max. |
| Voltage balance (Dual Output) | $\pm 1\%$ |
| Ripple & noise (at 20MHz BW) | 60mVp-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 | $\pm 0.02\%/^{\circ}\text{C}$, typ. |

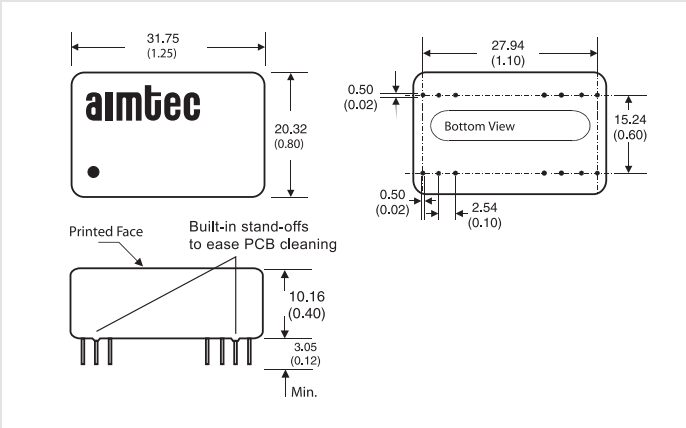
Physical Specifications:

| | |
|---------------|---|
| Dimensions | 31.75x20.32x10.16mm 1.25x0.8x0.4inches |
| Weight | 16.3g |
| Case material | Nickel-Coated Copper |

MTBF: > 1,039,000 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 |
| 22 | N.C | Common | -V Output | Common |
| 23 | N.C | -V Output | +V Input | +V Input |
| 24 | +V Input | +V Input | Omitted | Omitted |

MODELS

Single output

| Models | | Input Voltage | Output Voltage | Output Current max. |
|-------------------|-------------------|---------------|----------------|---------------------|
| Isolation 1500VDC | Isolation 3500VDC | | | |
| AM3T-1203S | AM3T-1203SH35 | 9VDC - 18VDC | 3.3VDC | 800mA |
| AM3T-1205S | AM3T-1205SH35 | | 5VDC | 600mA |
| AM3T-1207S | AM3T-1207SH35 | | 7.2VDC | 417mA |
| AM3T-1209S | AM3T-1209SH35 | | 9VDC | 333mA |
| AM3T-1212S | AM3T-1212SH35 | | 12VDC | 250mA |
| AM3T-1215S | AM3T-1215SH35 | | 15VDC | 200mA |
| AM3T-1218S | AM3T-1218SH35 | | 18VDC | 167mA |
| AM3T-1224S | AM3T-1224SH35 | | 24VDC | 125mA |
| AM3T-2403S | AM3T-2403SH35 | 18VDC - 36VDC | 3.3VDC | 800mA |
| AM3T-2405S | AM3T-2405SH35 | | 5VDC | 600mA |
| AM3T-2407S | AM3T-2407SH35 | | 7.2VDC | 417mA |
| AM3T-2409S | AM3T-2409SH35 | | 9VDC | 333mA |
| AM3T-2412S | AM3T-2412SH35 | | 12VDC | 250mA |
| AM3T-2415S | AM3T-2415SH35 | | 15VDC | 200mA |
| AM3T-2418S | AM3T-2418SH35 | | 18VDC | 167mA |
| AM3T-2424S | AM3T-2424SH35 | | 24VDC | 125mA |
| AM3T-4803S | AM3T-4803SH35 | 36VDC - 72VDC | 3.3VDC | 800mA |
| AM3T-4805S | AM3T-4805SH35 | | 5VDC | 600mA |
| AM3T-4807S | AM3T-4807SH35 | | 7.2VDC | 417mA |
| AM3T-4809S | AM3T-4809SH35 | | 9VDC | 333mA |
| AM3T-4812S | AM3T-4812SH35 | | 12VDC | 250mA |
| AM3T-4815S | AM3T-4815SH35 | | 15VDC | 200mA |
| AM3T-4818S | AM3T-4818SH35 | | 18VDC | 167mA |
| AM3T-4824S | AM3T-4824SH35 | | 24VDC | 125mA |

AM3T Series

MODELS Dual output

DC-DC CONVERTERS

| Models | | Input Voltage | Output Voltage | Output Current max. |
|-------------------|-------------------|---------------|----------------|---------------------|
| Isolation 1500VDC | Isolation 3500VDC | | | |
| AM3T-1203D | AM3T-1203DH35 | 9VDC - 18VDC | ±3.3VDC | ±400mA |
| AM3T-1205D | AM3T-1205DH35 | | ±5VDC | ±300mA |
| AM3T-1207D | AM3T-1207DH35 | | ±7.2VDC | ±208mA |
| AM3T-1209D | AM3T-1209DH35 | | ±9VDC | ±167mA |
| AM3T-1212D | AM3T-1212DH35 | | ±12VDC | ±125mA |
| AM3T-1215D | AM3T-1215DH35 | | ±15VDC | ±100mA |
| AM3T-1218D | AM3T-1218DH35 | | ±18VDC | ±84mA |
| AM3T-1224D | AM3T-1224DH35 | | ±24VDC | ±63mA |
| AM3T-2403D | AM3T-2403DH35 | 18VDC - 36VDC | ±3.3VDC | ±400mA |
| AM3T-2405D | AM3T-2405DH35 | | ±5VDC | ±300mA |
| AM3T-2407D | AM3T-2407DH35 | | ±7.2VDC | ±208mA |
| AM3T-2409D | AM3T-2409DH35 | | ±9VDC | ±167mA |
| AM3T-2412D | AM3T-2412DH35 | | ±12VDC | ±125mA |
| AM3T-2415D | AM3T-2415DH35 | | ±15VDC | ±100mA |
| AM3T-2418D | AM3T-2418DH35 | | ±18VDC | ±84mA |
| AM3T-2424D | AM3T-2424DH35 | | ±24VDC | ±63mA |
| AM3T-4803D | AM3T-4803DH35 | 36VDC - 72VDC | ±3.3VDC | ±400mA |
| AM3T-4805D | AM3T-4805DH35 | | ±5VDC | ±300mA |
| AM3T-4807D | AM3T-4807DH35 | | ±7.2VDC | ±208mA |
| AM3T-4809D | AM3T-4809DH35 | | ±9VDC | ±167mA |
| AM3T-4812D | AM3T-4812DH35 | | ±12VDC | ±125mA |
| AM3T-4815D | AM3T-4815DH35 | | ±15VDC | ±100mA |
| AM3T-4818D | AM3T-4818DH35 | | ±18VDC | ±84mA |
| AM3T-4824D | AM3T-4824DH35 | | ±24VDC | ±63mA |