# Series AM1PS-NZ

## 1 Watt | DC-DC Converter




### FEATURES:

- Unregulated
- 8 Pin DIP Package
- Low ripple and noise
- High efficiency up to 82%
- Operating temperature -40ºC to + 105ºC
- 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) | Isolation (VDC) | Max. Capacitive Load (µF) | Efficiency (%) |
|---|---|---|---|---|---|---|
| AM1PS-0303S-NZ # | 2.97-3.63 | 3.3 | 303 | 1500 | 220 | 75 |
| AM1PS-0305S-NZ # | 2.97-3.63 | 5 | 200 | 1500 | 220 | 80 |
| AM1PS-0503S-NZ # | 4.5-5.5 | 3.3 | 303 | 1500 | 220 | 76 |
| AM1PS-0505S-NZ | 4.5-5.5 | 5 | 200 | 1500 | 220 | 80 |
| AM1PS-0509S-NZ | 4.5-5.5 | 9 | 111 | 1500 | 220 | 80 |
| AM1PS-0512S-NZ | 4.5-5.5 | 12 | 84 | 1500 | 220 | 81 |
| AM1PS-0515S-NZ | 4.5-5.5 | 15 | 67 | 1500 | 220 | 81 |
| AM1PS-0524S-NZ ‡ | 4.5-5.5 | 24 | 42 | 1500 | 220 | 81 |
| AM1PS-1203S-NZ | 10.8-13.2 | 3.3 | 303 | 1500 | 220 | 76 |
| AM1PS-1205S-NZ | 10.8-13.2 | 5 | 200 | 1500 | 220 | 80 |
| AM1PS-1209S-NZ | 10.8-13.2 | 9 | 110 | 1500 | 220 | 80 |
| AM1PS-1212S-NZ | 10.8-13.2 | 12 | 83 | 1500 | 220 | 81 |
| AM1PS-1215S-NZ | 10.8-13.2 | 15 | 67 | 1500 | 220 | 80 |
| AM1PS-2403S-NZ # | 21.6-26.4 | 3.3 | 303 | 1500 | 220 | 76 |
| AM1PS-2405S-NZ | 21.6-26.4 | 5 | 200 | 1500 | 220 | 80 |
| AM1PS-2409S-NZ | 21.6-26.4 | 9 | 110 | 1500 | 220 | 80 |
| AM1PS-2412S-NZ | 21.6-26.4 | 12 | 83 | 1500 | 220 | 81 |
| AM1PS-2415S-NZ | 21.6-26.4 | 15 | 67 | 1500 | 220 | 82 |
| AM1PS-2424S-NZ | 21.6-26.4 | 24 | 42 | 1500 | 220 | 82 |

**‡ With Momentary short circuit protection of 1 second**

**NOTE : The model AM1PS-0503S-NZ, AM1PS-0509S-NZ, AM1PS-0515S-NZ and AM1PS-0524S-NZ is not recommended for new designs; For new design, please refer to AM1PS-0503SH30JZ, AM1PS-0509SH30JZ, AM1PS-0515SH30JZ or AM1PS-0524SH30JZ.**

## Input Specifications

| Parameters | Nominal | Typical | Maximum | Units |
|---|---|---|---|---|
| Voltage range | 3.3 | 2.97-3.63 | | VDC |
| | 5 | 4.5-5.5 | | |
| | 12 | 10.8-13.2 | | |
| | 15 | 13.5-16.5 | | |
| | 24 | 21.6-26.4 | | |
| Absolute Max Rating (1 sec. max.) | 3.3 | | 5 | VDC |
| | 5 | | 9 | |
| | 12 | | 18 | |
| | 15 | | 21 | |
| | 24 | | 30 | |
| Filter | Capacitor | | | |

## Isolation Specifications

| Parameters | Conditions | Typical | Rated | Units |
|---|---|---|---|---|
| Tested I/O voltage | 60 sec | | 1500 | VDC |
| Resistance | | > 1000 | | MOhm |
| Capacitance | | 20 | | pF |

## Output Specifications

| Parameters | Conditions | Typical | Maximum | Units |
|---|---|---|---|---|
| Voltage accuracy | See tolerance graph | ±5 | | % |
| Short Circuit protection | | Continuous, unless marked with ‡ | | |
| Line voltage regulation | For 1.0% Vin, 3.3V Model<br>For 1.0% Vin, Other Model | ±1.5<br>±1.2 | | % of Vin |
| Load voltage regulation | Load 10 – 100% | 12 | | % |
| Temperature coefficient | | ±0.03 | | %/ºC |
| Ripple & Noise | At 20 MHz Bandwidth | 60 | | m Vp-p |

## General Specifications

| Parameters | Conditions | Typical | Maximum | Units |
|---|---|---|---|---|
| Switching frequency | 100% load | 100 - 300 | | KHz |
| Operating temperature | Derating above 85ºC | -40 to +105 | | ºC |
| Storage temperature | | -55 to +125 | | ºC |
| Maximum case temperature | | | 125 | ºC |
| Cooling | Free air convection | | | |
| Humidity | Non condensing | | 95 | % |
| Case material | Plastic UL94-VO | | | |
| Lead Soldering Temperature | 1.5mm from Lead, 10 sec max. | | 300 | ºC |
| Weight | | 1.8 | | g |
| Dimensions (L x W x H) | | 0.50 x 0.39 x 0.32 inches | 12.70 x 10.00 x 8.20 mm | |
| MTBF | >3500K hrs(MIL-HDBK -217F, Ground Benign, t=+25ºC) | | | |

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.

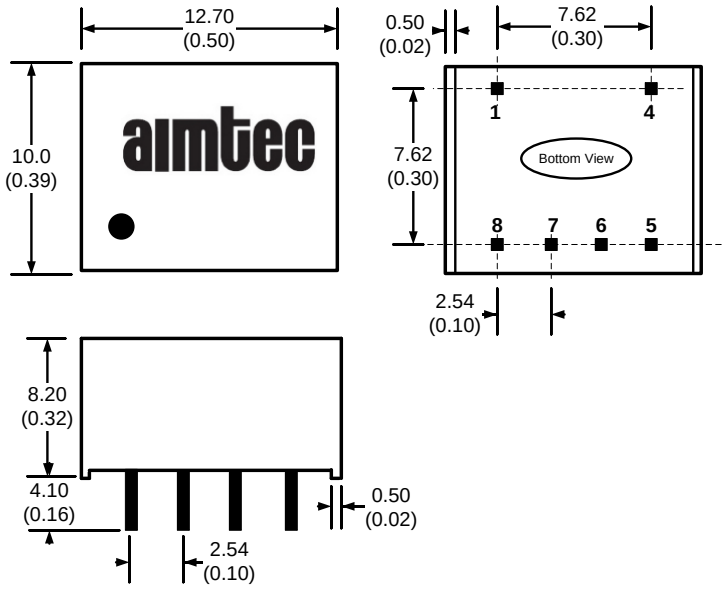
## Safety Specifications

| Parameters | |
|---|---|
| Agency approvals | cULus (with exception of the models marked # ) |
| Standards | UL 60950-1 |

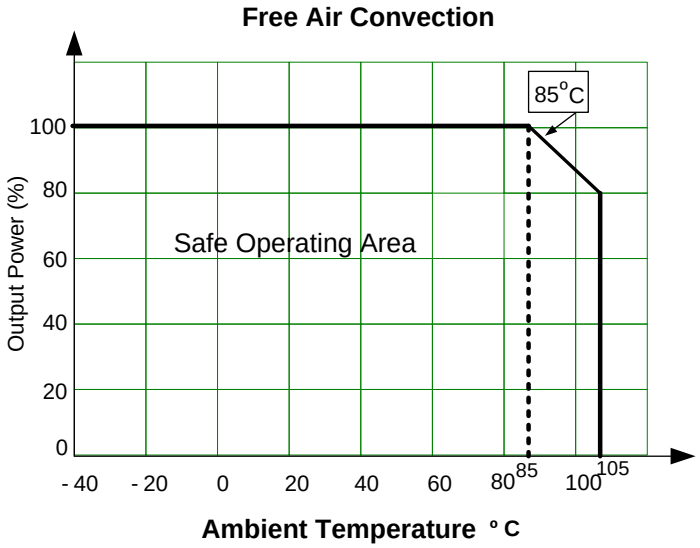
## Pin Out Specifications

| Pin | Single |
|---|---|
| 1 | - V Input |
| 4 | +V Input |
| 5 | +V Output |
| 6 | No pin |
| 7 | -V Output |
| 8 | No pin |

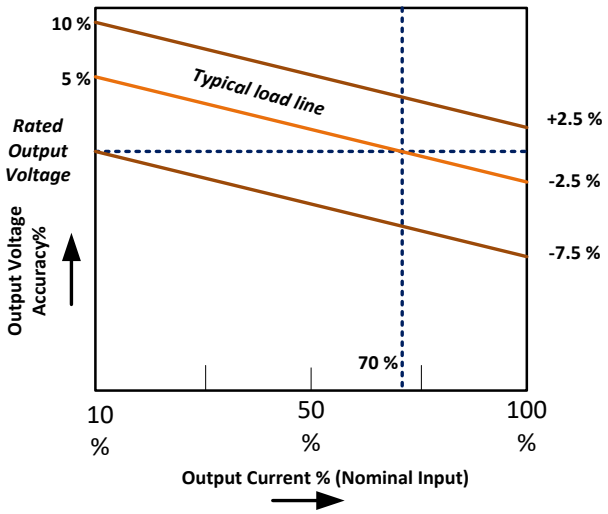
## Dimensions



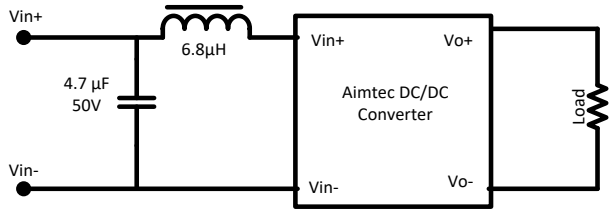
## Derating




## Typical Characteristics




## Recommended Circuit for EMI Class B




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