

**FEATURES:**

- RoHS Compliant
- Low ripple and noise
- High efficiency up to 89%
- UL94-VO case
- Input / Output Isolation 1000, 3000VDC
- Operating temperature -40°C to + 105°C
- Pin compatible with multiple manufacturers
- 7 pin SIP package
- Continuous Short Circuit Protection


**Models**  
Single output

| Model            | Input Voltage (V) | Output Voltage (V) | Output Current max(mA) | Isolation (VDC) | Efficiency (%) |
|------------------|-------------------|--------------------|------------------------|-----------------|----------------|
| AM2D-0505S-NZ    | 4.5-5.5           | 5                  | 400                    | 1000            | 89             |
| AM2D-0509S-NZ    | 4.5-5.5           | 9                  | 222                    | 1000            | 84             |
| AM2D-0512S-NZ    | 4.5-5.5           | 12                 | 167                    | 1000            | 84             |
| AM2D-0515S-NZ    | 4.5-5.5           | 15                 | 134                    | 1000            | 84             |
| AM2D-1205S-NZ    | 10.8-13.2         | 5                  | 400                    | 1000            | 84             |
| AM2D-1209S-NZ    | 10.8-13.2         | 9                  | 222                    | 1000            | 84             |
| AM2D-1212S-NZ    | 10.8-13.2         | 12                 | 167                    | 1000            | 84             |
| AM2D-1215S-NZ    | 10.8-13.2         | 15                 | 134                    | 1000            | 84             |
| AM2D-2405S-NZ    | 21.6-26.4         | 5                  | 400                    | 1000            | 84             |
| AM2D-2409S-NZ    | 21.6-26.4         | 9                  | 222                    | 1000            | 84             |
| AM2D-2412S-NZ    | 21.6-26.4         | 12                 | 167                    | 1000            | 84             |
| AM2D-2415S-NZ    | 21.6-26.4         | 15                 | 134                    | 1000            | 84             |
|                  |                   |                    |                        |                 |                |
| AM2D-0505SH30-NZ | 4.5-5.5           | 5                  | 400                    | 3000            | 80             |
| AM2D-0509SH30-NZ | 4.5-5.5           | 9                  | 222                    | 3000            | 81             |
| AM2D-0512SH30-NZ | 4.5-5.5           | 12                 | 167                    | 3000            | 82             |
| AM2D-0515SH30-NZ | 4.5-5.5           | 15                 | 134                    | 3000            | 84             |
| AM2D-1205SH30-NZ | 10.8-13.2         | 5                  | 400                    | 3000            | 80             |
| AM2D-1209SH30-NZ | 10.8-13.2         | 9                  | 222                    | 3000            | 83             |
| AM2D-1212SH30-NZ | 10.8-13.2         | 12                 | 167                    | 3000            | 84             |
| AM2D-1215SH30-NZ | 10.8-13.2         | 15                 | 134                    | 3000            | 85             |
| AM2D-2405SH30-NZ | 21.6-26.4         | 5                  | 400                    | 3000            | 81             |
| AM2D-2409SH30-NZ | 21.6-26.4         | 9                  | 222                    | 3000            | 84             |
| AM2D-2412SH30-NZ | 21.6-26.4         | 12                 | 167                    | 3000            | 85             |
| AM2D-2415SH30-NZ | 21.6-26.4         | 15                 | 134                    | 3000            | 86             |

**Models**  
Dual output

| Model            | Input Voltage (V) | Output Voltage (V) | Output Current max (mA) | Isolation (VDC) | Efficiency (%) |
|------------------|-------------------|--------------------|-------------------------|-----------------|----------------|
| AM2D-0505D-NZ    | 4.5-5.5           | ±5                 | ±200                    | 1000            | 80             |
| AM2D-0509D-NZ    | 4.5-5.5           | ±9                 | ±111                    | 1000            | 84             |
| AM2D-0512D-NZ    | 4.5-5.5           | ±12                | ±83                     | 1000            | 84             |
| AM2D-0515D-NZ    | 4.5-5.5           | ±15                | ±67                     | 1000            | 84             |
| AM2D-1205D-NZ    | 10.8-13.2         | ±5                 | ±200                    | 1000            | 80             |
| AM2D-1209D-NZ    | 10.8-13.2         | ±9                 | ±111                    | 1000            | 84             |
| AM2D-1212D-NZ    | 10.8-13.2         | ±12                | ±83                     | 1000            | 85             |
| AM2D-1215D-NZ    | 10.8-13.2         | ±15                | ±67                     | 1000            | 84             |
| AM2D-2405D-NZ    | 21.6-26.4         | ±5                 | ±200                    | 1000            | 80             |
| AM2D-2409D-NZ    | 21.6-26.4         | ±9                 | ±111                    | 1000            | 84             |
| AM2D-2412D-NZ    | 21.6-26.4         | ±12                | ±83                     | 1000            | 84             |
| AM2D-2415D-NZ    | 21.6-26.4         | ±15                | ±67                     | 1000            | 84             |
|                  |                   |                    |                         |                 |                |
| AM2D-0505DH30-NZ | 4.5-5.5           | ±5                 | ±200                    | 3000            | 82             |
| AM2D-0509DH30-NZ | 4.5-5.5           | ±9                 | ±111                    | 3000            | 83             |

## Models

### Dual output (continued)

| Model            | Input Voltage (V) | Output Voltage (V) | Output Current max (mA) | Isolation (VDC) | Efficiency (%) |
|------------------|-------------------|--------------------|-------------------------|-----------------|----------------|
| AM2D-0512DH30-NZ | 4.5-5.5           | ±12                | ±83                     | 3000            | 85             |
| AM2D-0515DH30-NZ | 4.5-5.5           | ±15                | ±67                     | 3000            | 85             |
| AM2D-1205DH30-NZ | 10.8-13.2         | ±5                 | ±200                    | 3000            | 83             |
| AM2D-1209DH30-NZ | 10.8-13.2         | ±9                 | ±111                    | 3000            | 84             |
| AM2D-1212DH30-NZ | 10.8-13.2         | ±12                | ±83                     | 3000            | 86             |
| AM2D-1215DH30-NZ | 10.8-13.2         | ±15                | ±67                     | 3000            | 86             |
| AM2D-2405DH30-NZ | 21.6-26.4         | ±5                 | ±200                    | 3000            | 84             |
| AM2D-2409DH30-NZ | 21.6-26.4         | ±9                 | ±111                    | 3000            | 85             |
| AM2D-2412DH30-NZ | 21.6-26.4         | ±12                | ±83                     | 3000            | 87             |
| AM2D-2415DH30-NZ | 21.6-26.4         | ±15                | ±67                     | 3000            | 87             |

## Input Specifications

| Parameters    | Nominal   | Typical   | Maximum | Units |
|---------------|-----------|-----------|---------|-------|
| Voltage range | 5         | 4.5-5.5   |         | VDC   |
|               | 12        | 10.8-13.2 |         |       |
|               | 24        | 21.6-26.4 |         |       |
| Filter        | Capacitor |           |         |       |

## Isolation Specifications

| Parameters         | Conditions | Typical | Rated         | Units |
|--------------------|------------|---------|---------------|-------|
| Tested I/O voltage | 60 sec     |         | 1000 and 3000 | VDC   |
| Resistance         |            | > 1000  |               | MOhm  |
| Capacitance        |            | 60      |               | pF    |

## Output Specifications

| Parameters                       | Conditions         | Typical                       | Maximum | Units  |
|----------------------------------|--------------------|-------------------------------|---------|--------|
| Voltage accuracy                 |                    | See tolerance graph           |         |        |
| Voltage balance                  | Dual output        | ±1                            |         | %      |
| Short Circuit protection         |                    | Continuous automatic recovery |         |        |
| Line voltage regulation (Single) | For 1.0% of Vin    | ±1.2                          |         | %      |
| Line voltage regulation (Dual)   | For 1.0% of Vin    | ±1.2                          |         | %      |
| Load voltage regulation (Single) | Load 10~100%       | ±8                            |         | %      |
| Load voltage regulation (Dual)   | Load 10~100%       | ±8                            |         | %      |
| Temperature coefficient          |                    | ±0.03                         |         | %/°C   |
| Ripple & Noise                   | At 20MHz Bandwidth | 75                            |         | mV p-p |

## General Specifications

| Parameters             | Conditions | Typical                                                | Maximum | Units |
|------------------------|------------|--------------------------------------------------------|---------|-------|
| Switching frequency    | 100% load  | 100                                                    | 300     | KHz   |
| Operating temperature  |            | -40 to +75                                             |         |       |
| Storage temperature    |            | -55 to +125                                            |         |       |
| Max Case temperature   |            |                                                        | +105    | °C    |
| Cooling                |            | Free air convection                                    |         |       |
| Humidity               |            |                                                        | 95      | %     |
| Case material          |            | Plastic UL94-VO                                        |         |       |
| Weight                 |            | 2.4                                                    |         | g     |
| Dimensions (L x W x H) |            | 0.772 x 0.276 x 0.394 inch 19.60 x 7.00 x 10.0 mm      |         |       |
| MTBF                   |            | >3 500 000hrs (MIL-HDBK -217F, Ground Benign, t=+25°C) |         |       |

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.

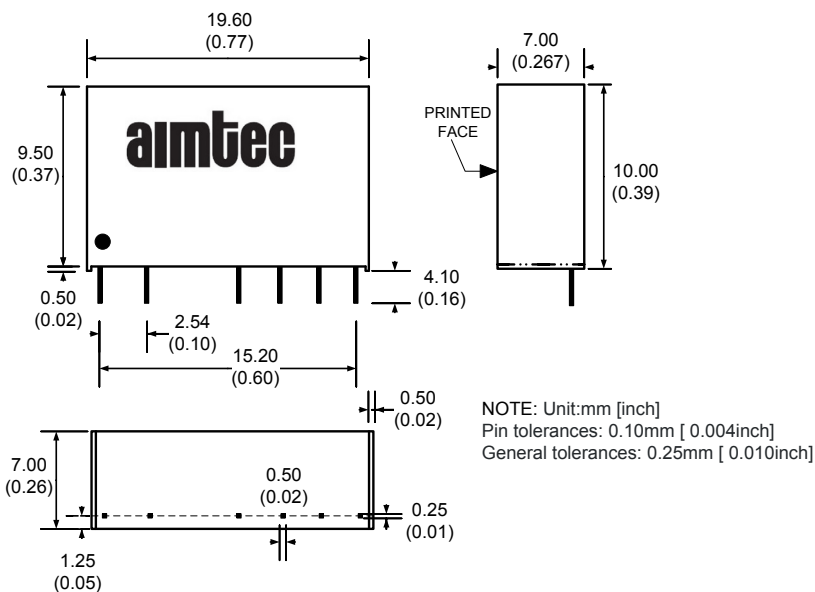
## Safety Specifications

| Parameters       |                                                                                                                                              |
|------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| Agency approvals | Designed to meet                                                                                                                             |
| Standards        | EN55022 Class B (with recommended circuit)<br>IEC / EN61000-4-2 Contact $\pm 6K$ Criteria B<br>IEC / EN61000-4-2 Contact $\pm 8K$ Criteria B |

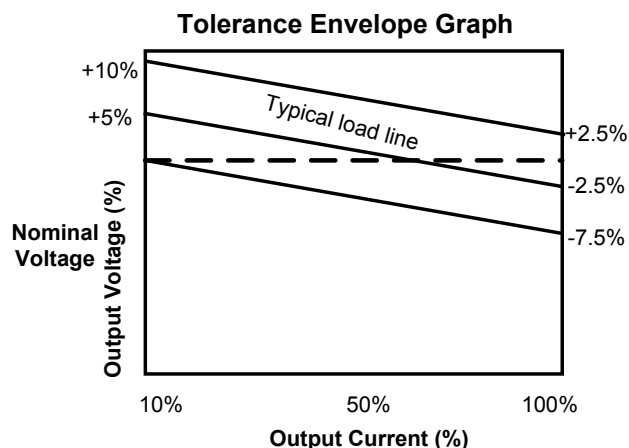
## Pin Out Specifications

| Pin | 1000VDC    |            | 3000VDC   |           |
|-----|------------|------------|-----------|-----------|
|     | Single     | Dual       | Single    | Dual      |
| 1   | + V Input  | + V Input  | + V Input | + V Input |
| 2   | - V Input  | - V Input  | - V Input | - V Input |
| 4   | -V Output  | - V Output | No pin    | No pin    |
| 5   | No pin     | Common     | -V Output | -V Output |
| 6   | + V Output | + V Output | No pin    | Common    |
| 7   | No pin     | No pin     | +V Output | +V Output |

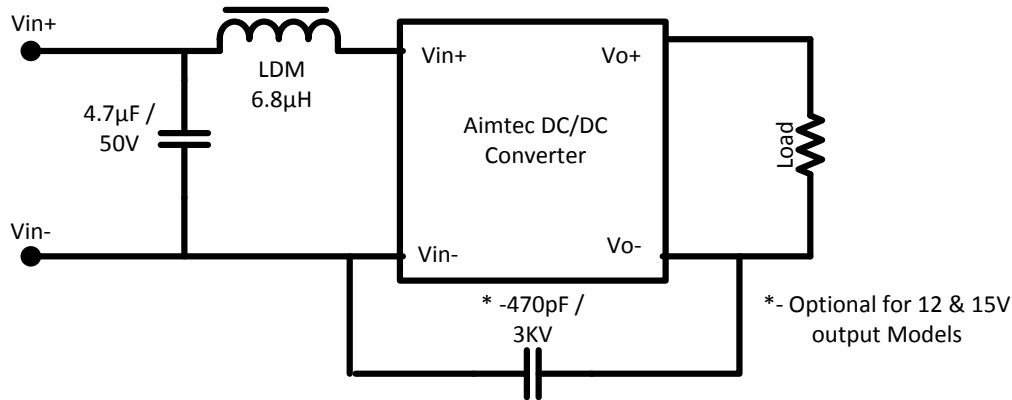
## Dimensions



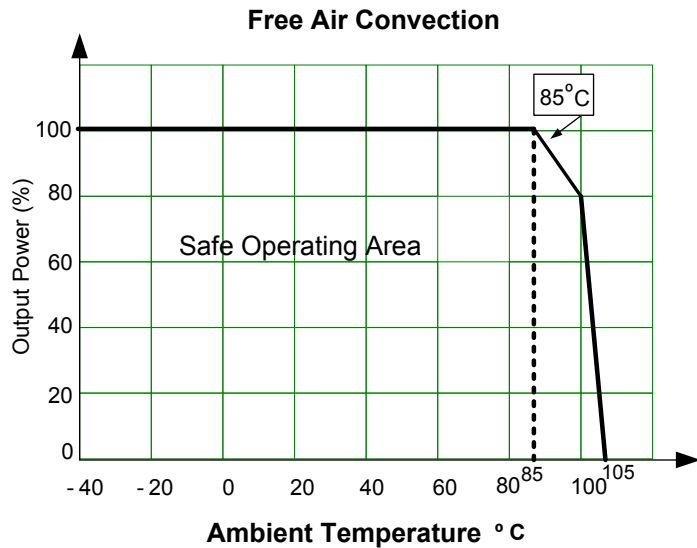
## Typical characteristics



### Typical EMI Filter



### Derating



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