

FEATURES:

- RoHS compliant
- High efficiency up to 82%
- Low profile plastic package
- 7 pin SIP package
- Operating temperature -40°C to + 85°C
- 1 sec short circuit protection
- Pin compatible with multiple manufacturers

Models Single output

| Model | Input Voltage (V) | Output Voltage (V) | Output Current max (Ma) | Isolation (VDC) | Efficiency (%) |
|------------------|-------------------|--------------------|-------------------------|-----------------|----------------|
| AM1D-0505S-NZ | 4.5-5.5 | 5 | 200 | 1000 | 72 |
| AM1D-0509S-NZ | 4.5-5.5 | 9 | 110 | 1000 | 74 |
| AM1D-0512S-NZ | 4.5-5.5 | 12 | 83 | 1000 | 77 |
| AM1D-0515S-NZ | 4.5-5.5 | 15 | 70 | 1000 | 79 |
| AM1D-1205S-NZ | 10.8-13.2 | 5 | 200 | 1000 | 73 |
| AM1D-1209S-NZ | 10.8-13.2 | 9 | 110 | 1000 | 75 |
| AM1D-1212S-NZ | 10.8-13.2 | 12 | 83 | 1000 | 79 |
| AM1D-1215S-NZ | 10.8-13.2 | 15 | 70 | 1000 | 80 |
| AM1D-2405S-NZ | 21.6-26.4 | 5 | 200 | 1000 | 74 |
| AM1D-2409S-NZ | 21.6-26.4 | 9 | 110 | 1000 | 76 |
| AM1D-2412S-NZ | 21.6-26.4 | 12 | 83 | 1000 | 80 |
| AM1D-2415S-NZ | 21.6-26.4 | 15 | 70 | 1000 | 81 |
| AM1D-0505SH30-NZ | 4.5-5.5 | 5 | 200 | 3000 | 70 |
| AM1D-0509SH30-NZ | 4.5-5.5 | 9 | 110 | 3000 | 75 |
| AM1D-0512SH30-NZ | 4.5-5.5 | 12 | 83 | 3000 | 78 |
| AM1D-0515SH30-NZ | 4.5-5.5 | 15 | 70 | 3000 | 80 |
| AM1D-1205SH30-NZ | 10.8-13.2 | 5 | 200 | 3000 | 72 |
| AM1D-1209SH30-NZ | 10.8-13.2 | 9 | 110 | 3000 | 76 |
| AM1D-1212SH30-NZ | 10.8-13.2 | 12 | 83 | 3000 | 79 |
| AM1D-1215SH30-NZ | 10.8-13.2 | 15 | 70 | 3000 | 81 |
| AM1D-2405SH30-NZ | 21.6-26.4 | 5 | 200 | 3000 | 73 |
| AM1D-2409SH30-NZ | 21.6-26.4 | 9 | 110 | 3000 | 77 |
| AM1D-2412SH30-NZ | 21.6-26.4 | 12 | 83 | 3000 | 80 |
| AM1D-2415SH30-NZ | 21.6-26.4 | 15 | 70 | 3000 | 82 |
| AM1D-0505SH60-NZ | 4.5-5.5 | 5 | 200 | 6000 | 72 |
| AM1D-0509SH60-NZ | 4.5-5.5 | 9 | 110 | 6000 | 72 |
| AM1D-0512SH60-NZ | 4.5-5.5 | 12 | 83 | 6000 | 75 |
| AM1D-0515SH60-NZ | 4.5-5.5 | 15 | 70 | 6000 | 75 |
| AM1D-1205SH60-NZ | 10.8-13.2 | 5 | 200 | 6000 | 75 |
| AM1D-1209SH60-NZ | 10.8-13.2 | 9 | 110 | 6000 | 76 |
| AM1D-1212SH60-NZ | 10.8-13.2 | 12 | 83 | 6000 | 78 |
| AM1D-1215SH60-NZ | 10.8-13.2 | 15 | 70 | 6000 | 78 |
| AM1D-2412SH60-NZ | 21.6-26.4 | 12 | 83 | 6000 | 80 |

Models Dual output

| Model | Input Voltage (V) | Output Voltage (V) | Output Current (mA) | Isolation (VDC) | Efficiency (%) |
|---------------|-------------------|--------------------|---------------------|-----------------|----------------|
| AM1D-0505D-NZ | 4.5-5.5 | ±5 | ±100 | 1000 | 72 |
| AM1D-0509D-NZ | 4.5-5.5 | ±9 | ±55 | 1000 | 75 |
| AM1D-0512D-NZ | 4.5-5.5 | ±12 | ±42 | 1000 | 78 |
| AM1D-0515D-NZ | 4.5-5.5 | ±15 | ±35 | 1000 | 79 |
| AM1D-1205D-NZ | 10.8-13.2 | ±5 | ±100 | 1000 | 74 |
| AM1D-1209D-NZ | 10.8-13.2 | ±9 | ±55 | 1000 | 76 |
| AM1D-1212D-NZ | 10.8-13.2 | ±12 | ±42 | 1000 | 79 |

Models

Dual output (continued)

| Model | Input Voltage (V) | Output Voltage (V) | Output Current (mA) | Isolation (VDC) | Efficiency (%) |
|------------------|-------------------|--------------------|---------------------|-----------------|----------------|
| AM1D-1215D-NZ | 10.8-13.2 | ±15 | ±35 | 1000 | 80 |
| AM1D-2405D-NZ | 21.6-26.4 | ±5 | ±100 | 1000 | 74 |
| AM1D-2409D-NZ | 21.6-26.4 | ±9 | ±55 | 1000 | 76 |
| AM1D-2412D-NZ | 21.6-26.4 | ±12 | ±42 | 1000 | 80 |
| AM1D-2415D-NZ | 21.6-26.4 | ±15 | ±35 | 1000 | 81 |
| AM1D-0505DH30-NZ | 4.5-5.5 | ±5 | ±100 | 3000 | 72 |
| AM1D-0509DH30-NZ | 4.5-5.5 | ±9 | ±55 | 3000 | 75 |
| AM1D-0512DH30-NZ | 4.5-5.5 | ±12 | ±42 | 3000 | 78 |
| AM1D-0515DH30-NZ | 4.5-5.5 | ±15 | ±35 | 3000 | 79 |
| AM1D-1205DH30-NZ | 10.8-13.2 | ±5 | ±100 | 3000 | 74 |
| AM1D-1209DH30-NZ | 10.8-13.2 | ±9 | ±55 | 3000 | 76 |
| AM1D-1212DH30-NZ | 10.8-13.2 | ±12 | ±42 | 3000 | 79 |
| AM1D-1215DH30-NZ | 10.8-13.2 | ±15 | ±35 | 3000 | 80 |
| AM1D-2405DH30-NZ | 21.6-26.4 | ±5 | ±100 | 3000 | 74 |
| AM1D-2409DH30-NZ | 21.6-26.4 | ±9 | ±55 | 3000 | 76 |
| AM1D-2412DH30-NZ | 21.6-26.4 | ±12 | ±42 | 3000 | 80 |
| AM1D-2415DH30-NZ | 21.6-26.4 | ±15 | ±35 | 3000 | 81 |
| AM1D-0505DH60-NZ | 4.5-5.5 | ±5 | ±100 | 6000 | 72 |
| AM1D-0509DH60-NZ | 4.5-5.5 | ±9 | ±55 | 6000 | 72 |
| AM1D-0512DH60-NZ | 4.5-5.5 | ±12 | ±42 | 6000 | 75 |
| AM1D-0515DH60-NZ | 4.5-5.5 | ±15 | ±35 | 6000 | 75 |
| AM1D-1205DH60-NZ | 10.8-13.2 | ±5 | ±100 | 6000 | 75 |
| AM1D-1209DH60-NZ | 10.8-13.2 | ±9 | ±55 | 6000 | 76 |
| AM1D-1212DH60-NZ | 10.8-13.2 | ±12 | ±42 | 6000 | 78 |
| AM1D-1215DH60-NZ | 10.8-13.2 | ±15 | ±35 | 6000 | 78 |

Input Specifications

| Parameters | Conditions | Typical | Maximum | Units |
|---------------|------------|-----------------------------------|---------|-------|
| Voltage range | | 4.5-5.5 10.8-13.2 21.6-26.4 | | VDC |
| Filter | Capacitor | | | |

Isolation Specifications

| Parameters | Conditions | Typical | Maximum | Units |
|---------------|------------|-------------------|---------|-------|
| Rated voltage | 60 sec | 1000, 3000 & 6000 | | VDC |
| Resistance | | > 1000 | | MOhm |
| Capacitance | | 60 | | pF |

Output Specifications

| Parameters | Conditions | Typical | Maximum | Units |
|----------------------------------|--------------------|---------|---------|--------|
| Voltage accuracy | | | ±5 | % |
| Voltage balance | Dual Output | ±1 | | % |
| Short Circuit protection | 1 sec. | | | |
| 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% | | 10 | % |
| Load voltage regulation (Dual) | load 10~100% | | 10 | % |
| 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 | 150 | | KHz |
| Case temperature | | | +95 | °C |
| Operating temperature | | -40 to +85 | | °C |
| Storage temperature | | -55 to +125 | | °C |
| Derating | Non-Required | | | |
| Cooling | Free air convection | | | |
| Humidity | Non condensing | | 90 | % |
| Case material | Plastic UL94-VO | | | |
| Weight | | 2 | | g |
| Dimensions | 1000 & 3000VDC | 0.76 x 0.24 x 0.39 inch | 19.5 x 6.00 x 10.00 mm | |
| | 6000VDC | 0.76 x 0.39 x 0.49 inch | 19.50 x 9.80 x 12.5 mm | |
| MTBF | >1 100 000 hrs (MIL-HDBK -217F, Ground Benign, t=+25°C) | | | |

Safety Specifications

Standards

| | |
|------------------|--|
| Agency approvals | cULus (for 3000 & 6000VDC Isolated models) |
|------------------|--|

Pin Out Specifications

| Pin | 1000 VDC | | 3000 , 6000 VDC | |
|-----|------------|------------|-----------------|------------|
| | 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 |

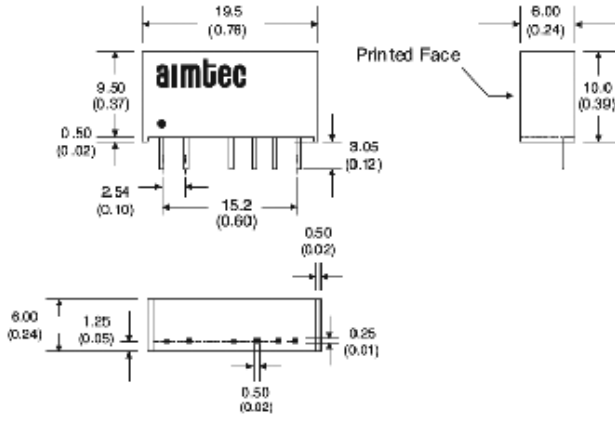
External capacitor – Single output

| Vin (VDC) | External capacitor (µF) | Vout (VDC) | External capacitor (µF) |
|-----------|-------------------------|------------|-------------------------|
| 5 | 4.7 | 5 | 10 |
| 12 | 2.2 | 9 | 4.7 |
| 24 | 1 | 12 | 2.2 |
| - | - | 15 | 1 |

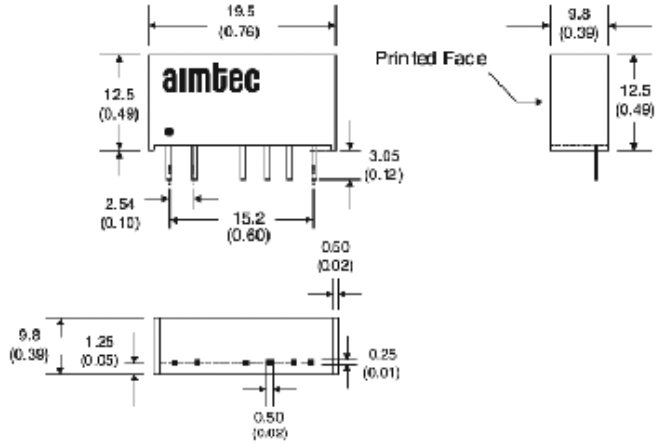
External capacitor – Dual output

| Vin (VDC) | External capacitor (µF) | Vout (VDC) | External capacitor (µF) |
|-----------|-------------------------|------------|-------------------------|
| 5 | 4.7 | 5 | 10 |
| 12 | 2.2 | 9 | 4.7 |
| 24 | 1 | 12 | 2.2 |
| - | - | 15 | 1 |

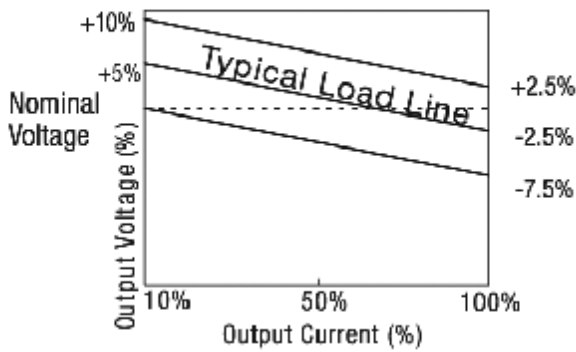
Dimensions
1000 and 3000VDC



Dimensions
6000VDC



Tolerance Envelope Graph



Temperature Derating Graph

