



FEATURES:

- RoHS Compliant
- High efficiency up to 89%
- Low ripple and noise
- 7 pin SIP package
- Operating temperature -40°C to +85°C
- Pin compatible with multiple manufacturers
- Input / Output Isolation 1000, 3000 VDC
- Non-Conductive Plastic Case



Models Single output

| Model | Input Voltage (V) | Output Voltage (V) | Output Current max (mA) | Isolation (VDC) | Max Capacitive Load (uF) | Efficiency (%) |
|------------------|-------------------|--------------------|-------------------------|-----------------|--------------------------|----------------|
| AM2D-0505S-RZ | 4.5-5.5 | 5 | 400 | 1000 | 220 | 81 |
| AM2D-0509S-RZ | 4.5-5.5 | 9 | 222 | 1000 | 220 | 85 |
| AM2D-0512S-RZ | 4.5-5.5 | 12 | 167 | 1000 | 100 | 85 |
| AM2D-0515S-RZ | 4.5-5.5 | 15 | 134 | 1000 | 100 | 86 |
| AM2D-1205S-RZ | 10.8-13.2 | 5 | 400 | 1000 | 220 | 84 |
| AM2D-1209S-RZ | 10.8-13.2 | 9 | 222 | 1000 | 220 | 86 |
| AM2D-1212S-RZ | 10.8-13.2 | 12 | 167 | 1000 | 100 | 88 |
| AM2D-1215S-RZ | 10.8-13.2 | 15 | 134 | 1000 | 100 | 88 |
| AM2D-1505S-RZ | 13.5-16.5 | 5 | 400 | 1000 | 220 | 85 |
| AM2D-1509S-RZ | 13.5-16.5 | 9 | 222 | 1000 | 220 | 87 |
| AM2D-1512S-RZ | 13.5-16.5 | 12 | 167 | 1000 | 100 | 87 |
| AM2D-1515S-RZ | 13.5-16.5 | 15 | 134 | 1000 | 100 | 88 |
| AM2D-2405S-RZ | 21.6-26.4 | 5 | 400 | 1000 | 220 | 82 |
| AM2D-2409S-RZ | 21.6-26.4 | 9 | 222 | 1000 | 220 | 84 |
| AM2D-2412S-RZ | 21.6-26.4 | 12 | 167 | 1000 | 100 | 86 |
| AM2D-2415S-RZ | 21.6-26.4 | 15 | 134 | 1000 | 100 | 87 |
| AM2D-4805S-RZ | 43.2-52.8 | 5 | 400 | 1000 | 220 | 82 |
| AM2D-4809S-RZ | 43.2-52.8 | 9 | 222 | 1000 | 220 | 84 |
| AM2D-4812S-RZ | 43.2-52.8 | 12 | 167 | 1000 | 100 | 86 |
| AM2D-4815S-RZ | 43.2-52.8 | 15 | 134 | 1000 | 100 | 87 |
| AM2D-0505SH30-RZ | 4.5-5.5 | 5 | 400 | 3000 | 220 | 81 |
| AM2D-0509SH30-RZ | 4.5-5.5 | 9 | 222 | 3000 | 220 | 85 |
| AM2D-0512SH30-RZ | 4.5-5.5 | 12 | 167 | 3000 | 100 | 85 |
| AM2D-0515SH30-RZ | 4.5-5.5 | 15 | 134 | 3000 | 100 | 86 |
| AM2D-1205SH30-RZ | 10.8-13.2 | 5 | 400 | 3000 | 220 | 84 |
| AM2D-1209SH30-RZ | 10.8-13.2 | 9 | 222 | 3000 | 220 | 86 |
| AM2D-1212SH30-RZ | 10.8-13.2 | 12 | 167 | 3000 | 100 | 88 |
| AM2D-1215SH30-RZ | 10.8-13.2 | 15 | 134 | 3000 | 100 | 88 |
| AM2D-1505SH30-RZ | 13.5-16.5 | 5 | 400 | 3000 | 220 | 85 |
| AM2D-1509SH30-RZ | 13.5-16.5 | 9 | 222 | 3000 | 220 | 87 |
| AM2D-1512SH30-RZ | 13.5-16.5 | 12 | 167 | 3000 | 100 | 87 |
| AM2D-1515SH30-RZ | 13.5-16.5 | 15 | 134 | 3000 | 100 | 88 |
| AM2D-2405SH30-RZ | 21.6-26.4 | 5 | 400 | 3000 | 220 | 82 |
| AM2D-2409SH30-RZ | 21.6-26.4 | 9 | 222 | 3000 | 220 | 84 |
| AM2D-2412SH30-RZ | 21.6-26.4 | 12 | 167 | 3000 | 100 | 86 |
| AM2D-2415SH30-RZ | 21.6-26.4 | 15 | 134 | 3000 | 100 | 87 |
| AM2D-4805SH30-RZ | 43.2-52.8 | 5 | 400 | 3000 | 220 | 82 |
| AM2D-4809SH30-RZ | 43.2-52.8 | 9 | 222 | 3000 | 220 | 84 |
| AM2D-4812SH30-RZ | 43.2-52.8 | 12 | 167 | 3000 | 100 | 86 |
| AM2D-4815SH30-RZ | 43.2-52.8 | 15 | 134 | 3000 | 100 | 87 |

Models
Dual output

| Model | Input Voltage (V) | Output Voltage (V) | Output Current max (mA) | Isolation (VDC) | Max Capacitive Load (uF) | Efficiency (%) |
|------------------|-------------------|--------------------|-------------------------|-----------------|--------------------------|----------------|
| AM2D-0505D-RZ | 4.5-5.5 | ±5 | ±200 | 1000 | ±100 | 82 |
| AM2D-0509D-RZ | 4.5-5.5 | ±9 | ±111 | 1000 | ±100 | 85 |
| AM2D-0512D-RZ | 4.5-5.5 | ±12 | ±83 | 1000 | ±47 | 86 |
| AM2D-0515D-RZ | 4.5-5.5 | ±15 | ±67 | 1000 | ±47 | 87 |
| AM2D-1205D-RZ | 10.8-13.2 | ±5 | ±200 | 1000 | ±100 | 84 |
| AM2D-1209D-RZ | 10.8-13.2 | ±9 | ±111 | 1000 | ±100 | 88 |
| AM2D-1212D-RZ | 10.8-13.2 | ±12 | ±83 | 1000 | ±47 | 89 |
| AM2D-1215D-RZ | 10.8-13.2 | ±15 | ±67 | 1000 | ±47 | 89 |
| AM2D-1505D-RZ | 13.5-16.5 | ±5 | ±200 | 1000 | ±100 | 85 |
| AM2D-1509D-RZ | 13.5-16.5 | ±9 | ±111 | 1000 | ±100 | 88 |
| AM2D-1512D-RZ | 13.5-16.5 | ±12 | ±83 | 1000 | ±47 | 88 |
| AM2D-1515D-RZ | 13.5-16.5 | ±15 | ±67 | 1000 | ±47 | 88 |
| AM2D-2405D-RZ | 21.6-26.4 | ±5 | ±200 | 1000 | ±100 | 82 |
| AM2D-2409D-RZ | 21.6-26.4 | ±9 | ±111 | 1000 | ±100 | 85 |
| AM2D-2412D-RZ | 21.6-26.4 | ±12 | ±83 | 1000 | ±47 | 86 |
| AM2D-2415D-RZ | 21.6-26.4 | ±15 | ±67 | 1000 | ±47 | 87 |
| AM2D-4805D-RZ | 43.2-52.8 | ±5 | 400 | 1000 | ±100 | 82 |
| AM2D-4809D-RZ | 43.2-52.8 | ±9 | 222 | 1000 | ±100 | 84 |
| AM2D-4812D-RZ | 43.2-52.8 | ±12 | 167 | 1000 | ±47 | 86 |
| AM2D-4815D-RZ | 43.2-52.8 | ±15 | 134 | 1000 | ±47 | 87 |
| AM2D-0505DH30-RZ | 4.5-5.5 | ±5 | ±200 | 3000 | ±100 | 82 |
| AM2D-0509DH30-RZ | 4.5-5.5 | ±9 | ±111 | 3000 | ±100 | 85 |
| AM2D-0512DH30-RZ | 4.5-5.5 | ±12 | ±83 | 3000 | ±47 | 86 |
| AM2D-0515DH30-RZ | 4.5-5.5 | ±15 | ±67 | 3000 | ±47 | 87 |
| AM2D-1205DH30-RZ | 10.8-13.2 | ±5 | ±200 | 3000 | ±100 | 84 |
| AM2D-1209DH30-RZ | 10.8-13.2 | ±9 | ±111 | 3000 | ±100 | 88 |
| AM2D-1212DH30-RZ | 10.8-13.2 | ±12 | ±83 | 3000 | ±47 | 89 |
| AM2D-1215DH30-RZ | 10.8-13.2 | ±15 | ±67 | 3000 | ±47 | 89 |
| AM2D-1505DH30-RZ | 13.5-16.5 | ±5 | ±200 | 3000 | ±100 | 85 |
| AM2D-1509DH30-RZ | 13.5-16.5 | ±9 | ±111 | 3000 | ±100 | 88 |
| AM2D-1512DH30-RZ | 13.5-16.5 | ±12 | ±83 | 3000 | ±47 | 88 |
| AM2D-1515DH30-RZ | 13.5-16.5 | ±15 | ±67 | 3000 | ±47 | 88 |
| AM2D-2405DH30-RZ | 21.6-26.4 | ±5 | ±200 | 3000 | ±100 | 82 |
| AM2D-2409DH30-RZ | 21.6-26.4 | ±9 | ±111 | 3000 | ±100 | 85 |
| AM2D-2412DH30-RZ | 21.6-26.4 | ±12 | ±83 | 3000 | ±47 | 86 |
| AM2D-2415DH30-RZ | 21.6-26.4 | ±15 | ±67 | 3000 | ±47 | 87 |
| AM2D-4805DH30-RZ | 43.2-52.8 | ±5 | 400 | 3000 | ±100 | 82 |
| AM2D-4809DH30-RZ | 43.2-52.8 | ±9 | 222 | 3000 | ±100 | 84 |
| AM2D-4812DH30-RZ | 43.2-52.8 | ±12 | 167 | 3000 | ±47 | 86 |
| AM2D-4815DH30-RZ | 43.2-52.8 | ±15 | 134 | 3000 | ±47 | 87 |

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.

Input Specifications

| Parameters | Nominal | Typical | Maximum | Units |
|-------------------------|-----------|-----------|---------|-------|
| Voltage range | 5 | 4.5-5.5 | | VDC |
| | 12 | 10.8-13.2 | | |
| | 15 | 13.5-16.5 | | |
| | 24 | 21.6-26.4 | | |
| | 48 | 43.2-52.8 | | |
| Filter | Capacitor | | | |
| Absolute Maximum Rating | 5 Vin | | 9 | VDC |
| | 12 Vin | | 18 | |
| | 15 Vin | | 20 | |
| | 24 Vin | | 30 | |
| | 48 Vin | | 54 | |
| Peak Input Voltage time | | | 100 | ms |
| No Load Input Current | | 50 | | mA |

Isolation Specifications

| Parameters | Conditions | Typical | Maximum | Units |
|--------------------|------------|---------|------------|-------|
| Tested I/O voltage | 3 sec | | 1000, 3000 | VDC |
| Resistance | | >1000 | | MOhm |
| Capacitance | | 60 | | pF |

Output Specifications

| Parameters | Conditions | Typical | Maximum | Units |
|--------------------------|-----------------|-------------------|---------|----------|
| Voltage accuracy | | +2, -4 | | % |
| Short Circuit protection | | Momentary (1sec). | | |
| Line voltage regulation | For 1.0% of Vin | 1.2 | | % of Vin |
| Load voltage regulation | Load 10~100% | ±5 | | % |
| Temperature coefficient | | ±0.02 | | %/°C |
| Ripple & Noise | 20MHz Bandwidth | 50 | | mV p-p |
| Minimum Load Current | | 10 | | % of Max |

General Specifications

| Parameters | Conditions | Typical | Maximum | Units |
|-------------------------------|----------------------------|---|-------------------------|-------|
| Switching frequency | 100% load | 70 | | KHz |
| Operating temperature | | -40 to +85 | | °C |
| Storage temperature | | -40 to +125 | | °C |
| Maximum case temperature | | | 100 | °C |
| Cooling | | Free Air Convection | | |
| Humidity | | | 95 | % RH |
| Case material | | Plastic UL94V-0 | | |
| Weight | | 2.8 | | g |
| Dimensions (L x W x H) | | 0.76 x 0.28 x 0.39 inch | 19.50 x 7.20 x 10.00 mm | |
| MTBF | | >1.9 Mhrs (MIL-HDBK -217F, Ground Benign, t=+25°C)hours | | |
| Maximum soldering temperature | 1.5mm from case for 10 sec | | 260 | °C |

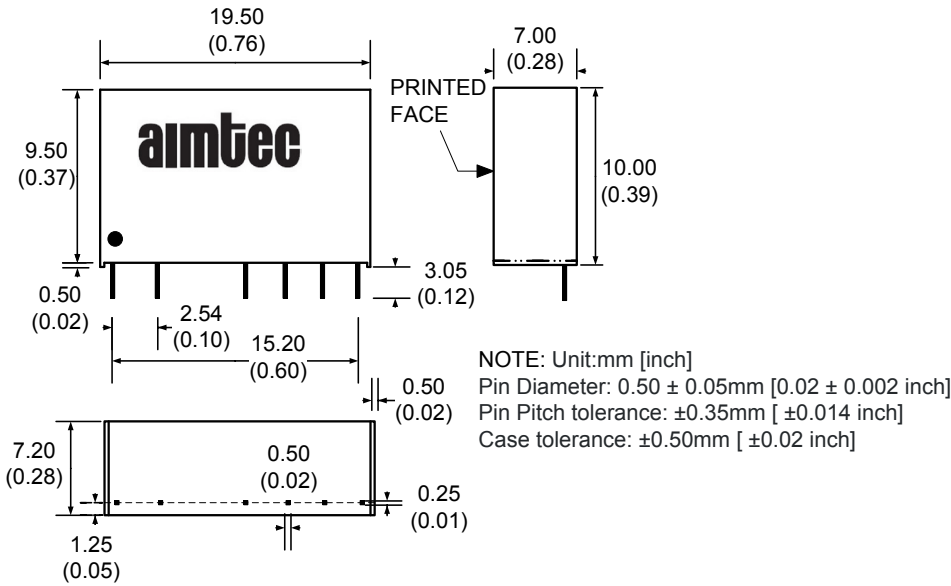
Safety Specifications

| Parameters | |
|-----------------|------------------------------------|
| Agency Approval | CE |
| Standards | EN55022: 2006 + A1: 2007, Class B |
| | EN55024: 1998 + A1: 2001 + A2:2003 |
| | IEC61000-4-2:2008 |
| | IEC61000-4-3: 2006 + A1: 2007 |
| | IEC61000-4-4, 2004 |
| | IEC61000-4-6: 2008 |
| | IEC61000-4-8: 1993 + A1:2000 |

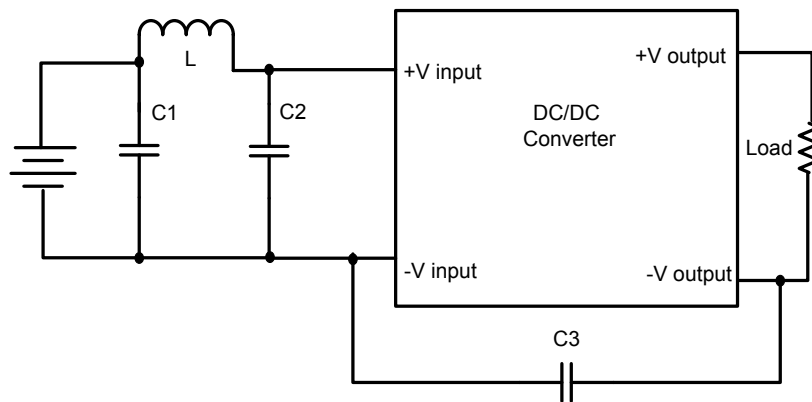
Pin Out Specifications

| Pin | 1000 VDC | | 3000 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 |

Dimensions

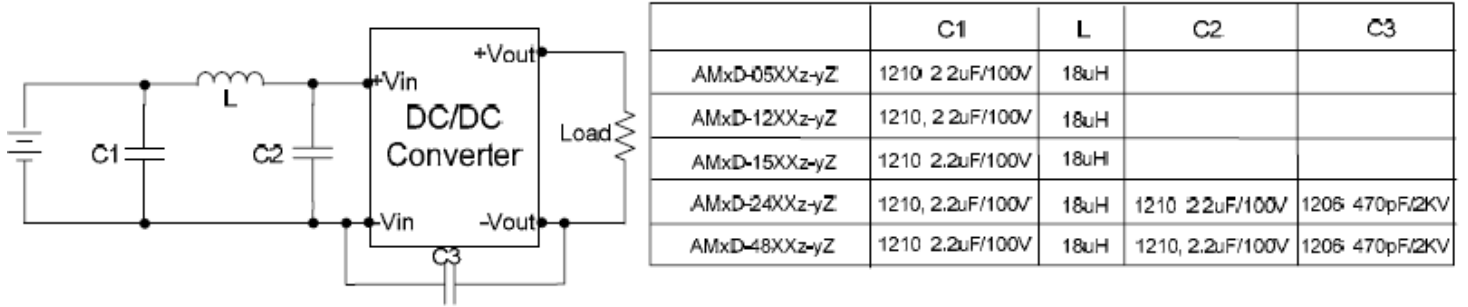


Application Circuit

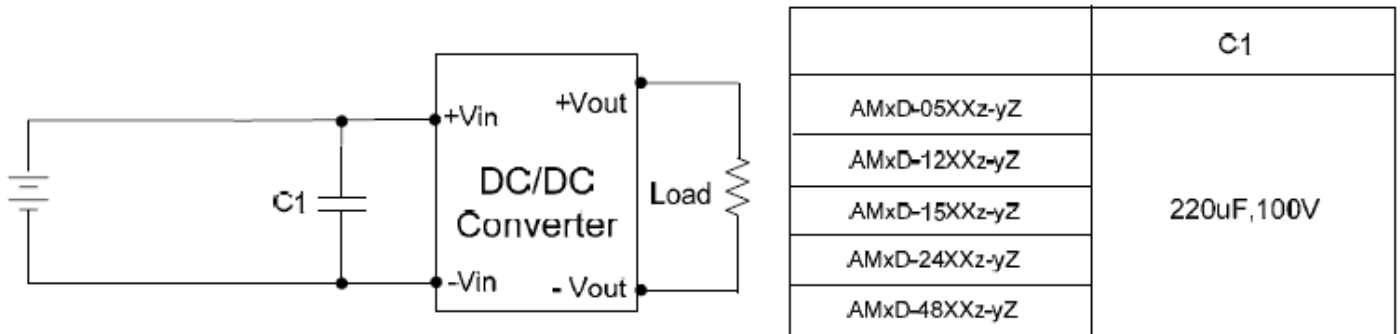


| Input Voltage (VDC) | C1 | L | C2 | C3 |
|---------------------|------------|------|------------|-----------|
| 5 | 2.2uF/100V | 18uH | N/A | N/A |
| 12 | 2.2uF/100V | 18uH | N/A | N/A |
| 15 | 2.2uF/100V | 18uH | N/A | N/A |
| 24 | 2.2uF/100V | 18uH | 2.2uF/100V | 470pF/2KV |

Conducted Emissions



EFT



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