

AM1D Series

1 Watt DC-DC Converters

Features

- 7PIN SIP PACKAGE
- LOW RIPPLE & NOISE
- HIGH EFFICIENCY UP TO 80%
- INPUT/OUTPUT ISOLATION: 1000, 3000, 4000 & 5200VDC
- OPERATING TEMPERATURE: -40°C ... +85°C
- PIN-COMPATIBLE WITH MULTIPLE MANUFACTURERS



General Description

Our AM1D series is a family of cost effective 1W single, dual, dual separate output isolated DC-DC converters. These converters achieve low cost and ultra-miniature SIP7 pin size without compromising performance and reliability.

Two hundred sixteen models operates from input voltages of 5, 12 & 24VDC; producing output voltage levels of 3.3, 5, 7.2, 9, 12, 15, 18, 24, ± 3.3 , ± 5 , ± 7.2 , ± 9 , ± 12 , ± 15 , ± 18 & ± 24 VDC. Full SMD-design and a 100% production test of parameters ensures a high reliability in this product.

Electrical Specifications

Specifications typical at +25°C, nominal input voltage, rated output current unless otherwise specified

MTBF: > 1,191,000 hrs (MIL-HDBK-217F, Ground Benign, $t=+25^{\circ}\text{C}$)

Isolation Specifications

Rated voltage (60 sec): 1000VDC (all models); 3000, 4000 & 5200VDC (single/dual output)

Resistance: > 1000M Ω

Capacitance: 60pF, typ.

Environmental Specifications

Operating temperature (ambient): -40°C ... +85°C

Storage temperature: -55°C ... +125°C

Case Temperature: +95°C, max.

Derating: None required

Humidity (non-condensing): Up to 90%

Cooling: Free-air Convection

Input Specifications

Voltage: $\pm 10\%$

Filter: Capacitor

Output Specifications

Voltage balance (dual output): $\pm 1\%$

Voltage accuracy: $\pm 5\%$, max

Ripple & noise (at 20MHz BW): 75mVp-p, max.

Short circuit protection: Momentary

Line voltage regulation: $\pm 1.2\%$ / 1.0% of V_{in}

Load voltage regulation: $\pm 8\%$, load=20~100%

Temperature coefficient: $\pm 0.02\%/^{\circ}\text{C}$, typ.

General Specifications

Efficiency: 65% to 80%

Switching frequency: 125KHz, typ. 100%load

Physical Specifications

Dimensions: 19.50x6.00x10.00mm; 0.76x0.24x0.39 inches

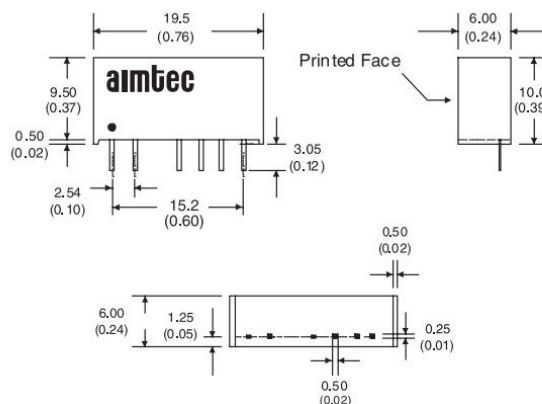
Weight: 2g

Case material: Non-conductive black plastic

Specifications are subject to change without notification

Outline Dimensions & Pin Connections

Pin	1000VDC	3000, 4000 & 5200VDC
1	+V Input	+V Input
2	-V Input	-V Input
4	-V Output	Omitted
5	+V Output	-V Output
6	Omitted	+V Output
7	Omitted	Omitted



Single / Dual output pin connections as listed above.

Models

Single output

Models / Isolation 1000VDC	Isolation 3000VDC	Isolation 4000VDC	Isolation 5200VDC	Input Voltage	Output Voltage	Output Current max.
AM1D-0503S	AM1D-0503SH30	AM1D-0503SH40	AM1D-0503SH52	5V±10%	3.3VDC	300mA
AM1D-0505S	AM1D-0505SH30	AM1D-0505SH40	AM1D-0505SH52		5VDC	200mA
AM1D-0507S	AM1D-0507SH30	AM1D-0507SH40	AM1D-0507SH52		7.2VDC	140mA
AM1D-0509S	AM1D-0509SH30	AM1D-0509SH40	AM1D-0509SH52		9VDC	110mA
AM1D-0512S	AM1D-0512SH30	AM1D-0512SH40	AM1D-0512SH52		12VDC	83mA
AM1D-0515S	AM1D-0515SH30	AM1D-0515SH40	AM1D-0515SH52		15VDC	70mA
AM1D-0518S	AM1D-0518SH30	AM1D-0518SH40	AM1D-0518SH52		18VDC	55mA
AM1D-0524S	AM1D-0524SH30	AM1D-0524SH40	AM1D-0524SH52		24VDC	40mA
AM1D-1203S	AM1D-1203SH30	AM1D-1203SH40	AM1D-1203SH52	12V±10%	3.3VDC	300mA
AM1D-1205S	AM1D-1205SH30	AM1D-1205SH40	AM1D-1205SH52		5VDC	200mA
AM1D-1207S	AM1D-1207SH30	AM1D-1207SH40	AM1D-1207SH52		7.2VDC	140mA
AM1D-1209S	AM1D-1209SH30	AM1D-1209SH40	AM1D-1209SH52		9VDC	110mA
AM1D-1212S	AM1D-1212SH30	AM1D-1212SH40	AM1D-1212SH52		12VDC	83mA
AM1D-1215S	AM1D-1215SH30	AM1D-1215SH40	AM1D-1215SH52		15VDC	70mA
AM1D-1218S	AM1D-1218SH30	AM1D-1218SH40	AM1D-1218SH52		18VDC	55mA
AM1D-1224S	AM1D-1224SH30	AM1D-1224SH40	AM1D-1224SH52		24VDC	40mA
AM1D-2403S	AM1D-2403SH30	AM1D-2403SH40	AM1D-2403SH52	24V±10%	3.3VDC	300mA
AM1D-2405S	AM1D-2405SH30	AM1D-2405SH40	AM1D-2405SH52		5VDC	200mA
AM1D-2407S	AM1D-2407SH30	AM1D-2407SH40	AM1D-2407SH52		7.2VDC	140mA
AM1D-2409S	AM1D-2409SH30	AM1D-2409SH40	AM1D-2409SH52		9VDC	110mA
AM1D-2412S	AM1D-2412SH30	AM1D-2412SH40	AM1D-2412SH52		12VDC	83mA
AM1D-2415S	AM1D-2415SH30	AM1D-2415SH40	AM1D-2415SH52		15VDC	70mA
AM1D-2418S	AM1D-2418SH30	AM1D-2418SH40	AM1D-2418SH52		18VDC	55mA
AM1D-2424S	AM1D-2424SH30	AM1D-2424SH40	AM1D-2424SH52		24VDC	40mA

Dual output

Models / Isolation 1000VDC	Isolation 3000VDC	Isolation 4000VDC	Isolation 5200VDC	Input Voltage	Output Voltage	Output Current max.
AM1D-0503D	AM1D-0503DH30	AM1D-0503DH40	AM1D-0503DH52	5V±10%	±3.3VDC	±150mA
AM1D-0505D	AM1D-0505DH30	AM1D-0505DH40	AM1D-0505DH52		±5VDC	±100mA
AM1D-0507D	AM1D-0507DH30	AM1D-0507DH40	AM1D-0507DH52		±7.2VDC	±70mA
AM1D-0509D	AM1D-0509DH30	AM1D-0509DH40	AM1D-0509DH52		±9VDC	±55mA

Models / Isolation 1000VDC	Isolation 3000VDC	Isolation 4000VDC	Isolation 5200VDC	Input Voltage	Output Voltage	Output Current max.
AM1D-0512D	AM1D-0512DH30	AM1D-0512DH40	AM1D-0512DH52		±12VDC	±42mA
AM1D-0515D	AM1D-0515DH30	AM1D-0515DH40	AM1D-0515DH52		±15VDC	±35mA
AM1D-0518D	AM1D-0518DH30	AM1D-0518DH40	AM1D-0518DH52		±18VDC	±27mA
AM1D-0524D	AM1D-0524DH30	AM1D-0524DH40	AM1D-0524DH52		±24VDC	±20mA
AM1D-1203D	AM1D-1203DH30	AM1D-1203DH40	AM1D-1203DH52	12V±10%	±3.3VDC	±150mA
AM1D-1205D	AM1D-1205DH30	AM1D-1205DH40	AM1D-1205DH52		±5VDC	±100mA
AM1D-1207D	AM1D-1207DH30	AM1D-1207DH40	AM1D-1207DH52		±7.2VDC	±70mA
AM1D-1209D	AM1D-1209DH30	AM1D-1209DH40	AM1D-1209DH52		±9VDC	±55mA
AM1D-1212D	AM1D-1212DH30	AM1D-1212DH40	AM1D-1212DH52		±12VDC	±42mA
AM1D-1215D	AM1D-1215DH30	AM1D-1215DH40	AM1D-1215DH52		±15VDC	±35mA
AM1D-1218D	AM1D-1218DH30	AM1D-1218DH40	AM1D-1218DH52		±18VDC	±27mA
AM1D-1224D	AM1D-1224DH30	AM1D-1224DH40	AM1D-1224DH52		±24VDC	±20mA
AM1D-2403D	AM1D-2403DH30	AM1D-2403DH40	AM1D-2403DH52	24V±10%	±3.3VDC	±150mA
AM1D-2405D	AM1D-2405DH30	AM1D-2405DH40	AM1D-2405DH52		±5VDC	±100mA
AM1D-2407D	AM1D-2407DH30	AM1D-2407DH40	AM1D-2407DH52		±7.2VDC	±70mA
AM1D-2409D	AM1D-2409DH30	AM1D-2409DH40	AM1D-2409DH52		±9VDC	±55mA
AM1D-2412D	AM1D-2412DH30	AM1D-2412DH40	AM1D-2412DH52		±12VDC	±42mA
AM1D-2415D	AM1D-2415DH30	AM1D-2415DH40	AM1D-2415DH52		±15VDC	±35mA
AM1D-2418D	AM1D-2418DH30	AM1D-2418DH40	AM1D-2418DH52		±18VDC	±27mA
AM1D-2424D	AM1D-2424DH30	AM1D-2424DH40	AM1D-2424DH52		±24VDC	±20mA

Dual separate

Models	Input Voltage	Output Voltage	Output Current max.
AM1D-050303D	5V±10%	3.3/3.3VDC	150/150mA
AM1D-050505D		5/5VDC	100/100mA
AM1D-050707D		7.2/7.2VDC	70/70mA
AM1D-050909D		9/9VDC	55/55mA
AM1D-051212D		12/12VDC	42/42mA
AM1D-051515D		15/15VDC	35/35mA
AM1D-051818D		18/18VDC	27/27mA
AM1D-052424D		24/24VDC	20/20mA
AM1D-120303D	12V±10%	3.3/3.3VDC	150/150mA
AM1D-120505D		5/5VDC	100/100mA
AM1D-120707D		7.2/7.2VDC	70/70mA
AM1D-120909D		9/9VDC	55/55mA

Models	Input Voltage	Output Voltage	Output Current max.
AM1D-121212D		12/12VDC	42/42mA
AM1D-121515D		15/15VDC	35/35mA
AM1D-121818D		18/18VDC	27/27mA
AM1D-122424D		24/24VDC	20/20mA
AM1D-240303D	24V±10%	3.3/3.3VDC	150/150mA
AM1D-240505D		5/5VDC	100/100mA
AM1D-240707D		7.2/7.2VDC	70/70mA
AM1D-240909D		9/9VDC	55/55mA
AM1D-241212D		12/12VDC	42/42mA
AM1D-241515D		15/15VDC	35/35mA
AM1D-241818D		18/18VDC	27/27mA
AM1D-242424D		24/24VDC	20/20mA