

3 watt dc-dc converters

- REGULATED OUTPUTS
- 24PIN DIL PACKAGE
- LOW RIPPLE AND NOISE
- HIGH EFFICIENCY UP TO 70%
- LOW PROFILE METAL PACKAGE
- INPUT/OUTPUT ISOLATION: 1000, 3000 or 5200VDC
- OPERATING TEMPERATURE: -40°C ... +85°C
- PIN-COMPATIBLE WITH OTHER MANUFACTURERS
- CONTINUOUS SHORT CIRCUIT PROTECTION

GENERAL DESCRIPTION

The AM3N series is a family of cost effective 3W single and dual outputs DC-DC converters. These converters combines miniature package in a 24-pin DIL compatible case with high performance features such as 1000VDC, 3000VDC or 5200VDC input/output isolation voltage, continuous short circuit protection with

automatic restart and tight line/load regulation.

Input bus voltage of 5, 12 and 24VDC with producing output voltage levels of 5, 7.2, 9, 12, 15, 18, 24, ± 5 , ± 7.2 , ± 9 , ± 12 , ± 15 , ± 18 or ± 24 VDC.

Full SMD-design and a 100% production test of parameters ensure a high reliability of this product.

ELECTRICAL SPECIFICATIONS

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

Input Specifications:

Voltage range	$\pm 10\%$
Filter	π (Pi) Network

Isolation Specifications:

Rated voltage	1000, 3000, 5200VDC
Leakage current	1mA
Resistance	> 1000M Ω m
Capacitance	60pF, typ

General Specifications:

Efficiency	50% to 70%
Switching frequency	125KHz, typ

Physical Specifications

Dimensions	31.75x20.32x10.16mm 1.25x0.80x0.40inches
Weight	14.5 g
Case material	Nickel-Coated Copper

Output Specifications:

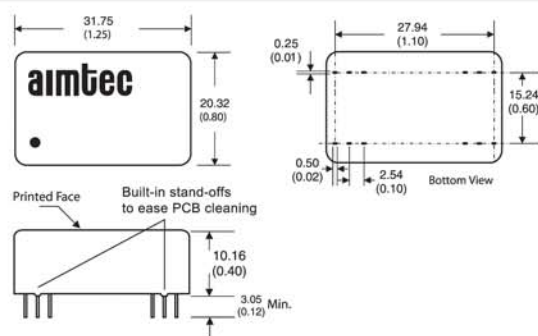
Voltage accuracy	$\pm 2\%$, max
Voltage balance (dual outputs)	$\pm 1\%$
Ripple and noise (at 20MHz BW)	75mVp-p, max
Short circuit protection	Continuous
Short circuit restart	Automatic
Line voltage regulation	$\pm 0.5\%$, max
Load voltage regulation	$\pm 0.5\%$, max
Temperature coefficient	$\pm 0.02\%/^{\circ}\text{C}$

Environmental Specifications:

Operating temperature (ambient)	-40°C ... +85°C
Storage temperature	-55°C ... +125°C
Derating	None required
Humidity (non-condensing)	Up to 90%
Cooling	Free-air Convection

MTBF (MIL-HDBK-217F, Ground Benign, $t=+25^{\circ}\text{C}$): > 954 000 hrs (single output), > 1 110 000 hrs (dual output)
Specifications are subject to change without notification

OUTLINE DIMENSIONS & PIN CONNECTIONS



Pin	1000VDC		3000, 5200VDC	
	Single	Dual	Single	Dual
1	+V Input	+V Input	+V Input	+V Input
2	N.C.	-V Output	+V Input	+V Input
3	N.C.	Common	Omitted	Omitted
10	-V Output	Common	Omitted	Common
11	+V Output	+V Output	Omitted	Common
12	-V Input	-V Input	-V Output	Omitted
13	-V Input	-V Input	+V Output	-V Output
14	+V Output	+V Output	Omitted	Omitted
15	-V Output	Common	Omitted	+V Output
22	N.C.	Common	Omitted	Omitted
23	N.C.	-V Output	-V Input	-V Input
24	+V Input	+V Input	-V Input	-V Input

MODELS

Single Output

Models			Input voltage	Output voltage	Output current max.
Isolation 1000VDC	Isolation 3000VDC	Isolation 5200VDC			
AM3N-0505S	AM3N-0505SH30	AM3N-0505SH52	5V±10%	5VDC	600mA
AM3N-0507S	AM3N-0507SH30	AM3N-0507SH52		7.2VDC	417mA
AM3N-0509S	AM3N-0509SH30	AM3N-0509SH52		9VDC	333mA
AM3N-0512S	AM3N-0512SH30	AM3N-0512SH52		12VDC	250mA
AM3N-0515S	AM3N-0515SH30	AM3N-0515SH52		15VDC	200mA
AM3N-0518S	AM3N-0518SH30	AM3N-0518SH52		18VDC	167mA
AM3N-0524S	AM3N-0524SH30	AM3N-0524SH52		24VDC	125mA
AM3N-1205S	AM3N-1205SH30	AM3N-1205SH52	12V±10%	5VDC	600mA
AM3N-1207S	AM3N-1207SH30	AM3N-1207SH52		7.2VDC	417mA
AM3N-1209S	AM3N-1209SH30	AM3N-1209SH52		9VDC	333mA
AM3N-1212S	AM3N-1212SH30	AM3N-1212SH52		12VDC	250mA
AM3N-1215S	AM3N-1215SH30	AM3N-1215SH52		15VDC	200mA
AM3N-1218S	AM3N-1218SH30	AM3N-1218SH52		18VDC	167mA
AM3N-1224S	AM3N-1224SH30	AM3N-1224SH52		24VDC	125mA
AM3N-2405S	AM3N-2405SH30	AM3N-2405SH52	24V±10%	5VDC	600mA
AM3N-2407S	AM3N-2407SH30	AM3N-2407SH52		7.2VDC	417mA
AM3N-2409S	AM3N-2409SH30	AM3N-2409SH52		9VDC	333mA
AM3N-2412S	AM3N-2412SH30	AM3N-2412SH52		12VDC	250mA
AM3N-2415S	AM3N-2415SH30	AM3N-2415SH52		15VDC	200mA
AM3N-2418S	AM3N-2418SH30	AM3N-2418SH52		18VDC	167mA
AM3N-2424S	AM3N-2424SH30	AM3N-2424SH52		24VDC	125mA

Dual Output

Models			Input voltage	Output voltage	Output current max.
Isolation 1000VDC	Isolation 3000VDC	Isolation 5200VDC			
AM3N-0505D	AM3N-0505DH30	AM3N-0505DH52	5V±10%	±5VDC	±300mA
AM3N-0507D	AM3N-0507DH30	AM3N-0507DH52		±7.2VDC	±208mA
AM3N-0509D	AM3N-0509DH30	AM3N-0509DH52		±9VDC	±167mA
AM3N-0512D	AM3N-0512DH30	AM3N-0512DH52		±12VDC	±125mA
AM3N-0515D	AM3N-0515DH30	AM3N-0515DH52		±15VDC	±100mA
AM3N-0518D	AM3N-0518DH30	AM3N-0518DH52		±18VDC	±84mA
AM3N-0524D	AM3N-0524DH30	AM3N-0524DH52		±24VDC	±63mA
AM3N-1205D	AM3N-1205DH30	AM3N-1205DH52	12V±10%	±5VDC	±300mA
AM3N-1207D	AM3N-1207DH30	AM3N-1207DH52		±7.2VDC	±208mA
AM3N-1209D	AM3N-1209DH30	AM3N-1209DH52		±9VDC	±167mA
AM3N-1212D	AM3N-1212DH30	AM3N-1212DH52		±12VDC	±125mA
AM3N-1215D	AM3N-1215DH30	AM3N-1215DH52		±15VDC	±100mA
AM3N-1218D	AM3N-1218DH30	AM3N-1218DH52		±18VDC	±84mA
AM3N-1224D	AM3N-1224DH30	AM3N-1224DH52		±24VDC	±63mA
AM3N-2405D	AM3N-2405DH30	AM3N-2405DH52	24V±10%	±5VDC	±300mA
AM3N-2407D	AM3N-2407DH30	AM3N-2407DH52		±7.2VDC	±208mA
AM3N-2409D	AM3N-2409DH30	AM3N-2409DH52		±9VDC	±167mA
AM3N-2412D	AM3N-2412DH30	AM3N-2412DH52		±12VDC	±125mA
AM3N-2415D	AM3N-2415DH30	AM3N-2415DH52		±15VDC	±100mA
AM3N-2418D	AM3N-2418DH30	AM3N-2418DH52		±18VDC	±84mA
AM3N-2424D	AM3N-2424DH30	AM3N-2424DH52		±24VDC	±63mA

INPUT CURRENT

No Load / Full Load

5V _{in} models	200 / 1130mA, typ
12V _{in} models	110 / 440mA, typ
24V _{in} models	38 / 200mA, typ