

Series AM3N-D-RZ

3 Watt | DC-DC Converter



FEATURES:

- RoHS compliant
- 24 Pin DIP Package
- Low ripple and noise
- High efficiency up to 80%
- Low profile packaging
- Operating temperature -40°C to + 85°C
- Input / Output Isolation 1000, 3000 and 5200VDC
- Pin compatible with multiple manufacturers
- Continuous short circuit protection
- Dual regulated output



Models

Dual output

Model	Input Voltage (V)	Output Voltage (V)	Output Current max (mA)	Isolation (VDC)	Max Capacitive Load (uF)	Efficiency (%)
AM3N-0503D-RZ	4.5-5.5	±3.3	±400	1000	±1000	64
AM3N-0505D-RZ	4.5-5.5	±5	±300	1000	±1000	66
AM3N-0507D-RZ	4.5-5.5	±7.2	±208	1000	±470	55
AM3N-0509D-RZ	4.5-5.5	±9	±167	1000	±470	68
AM3N-0512D-RZ	4.5-5.5	±12	±125	1000	±470	70
AM3N-0515D-RZ	4.5-5.5	±15	±100	1000	±470	70
AM3N-0518D-RZ	4.5-5.5	±18	±84	1000	±220	57
AM3N-0524D-RZ	4.5-5.5	±24	±63	1000	±220	69
AM3N-1203D-RZ	10.8-13.2	±3.3	±400	1000	±1000	52
AM3N-1205D-RZ	10.8-13.2	±5	±300	1000	±1000	75
AM3N-1207D-RZ	10.8-13.2	±7.2	±208	1000	±470	55
AM3N-1209D-RZ	10.8-13.2	±9	±167	1000	±470	78
AM3N-1212D-RZ	10.8-13.2	±12	±125	1000	±470	80
AM3N-1215D-RZ	10.8-13.2	±15	±100	1000	±470	78
AM3N-1218D-RZ	10.8-13.2	±18	±84	1000	±220	62
AM3N-1224D-RZ	10.8-13.2	±24	±63	1000	±220	76
AM3N-2403D-RZ	21.6-26.4	±3.3	±400	1000	±1000	52
AM3N-2405D-RZ	21.6-26.4	±5	±300	1000	±1000	77
AM3N-2407D-RZ	21.6-26.4	±7.2	±208	1000	±470	55
AM3N-2409D-RZ	21.6-26.4	±9	±167	1000	±470	78
AM3N-2412D-RZ	21.6-26.4	±12	±125	1000	±470	80
AM3N-2415D-RZ	21.6-26.4	±15	±100	1000	±470	78
AM3N-2418D-RZ	21.6-26.4	±18	±84	1000	±220	65
AM3N-2424D-RZ	21.6-26.4	±24	±63	1000	±220	76
AM3N-0503DHD30-RZ	4.5-5.5	±3.3	±400	3000	±1000	64
AM3N-0505DHD30-RZ	4.5-5.5	±5	±300	3000	±1000	66
AM3N-0507DHD30-RZ	4.5-5.5	±7.2	±208	3000	±470	55
AM3N-0509DHD30-RZ	4.5-5.5	±9	±167	3000	±470	68
AM3N-0512DHD30-RZ	4.5-5.5	±12	±125	3000	±470	70
AM3N-0515DHD30-RZ	4.5-5.5	±15	±100	3000	±470	70
AM3N-0518DHD30-RZ	4.5-5.5	±18	±84	3000	±220	57
AM3N-0524DHD30-RZ	4.5-5.5	±24	±63	3000	±220	69
AM3N-1203DHD30-RZ	10.8-13.2	±3.3	±400	3000	±1000	64
AM3N-1205DHD30-RZ	10.8-13.2	±5	±300	3000	±1000	75
AM3N-1207DHD30-RZ	10.8-13.2	±7.2	±208	3000	±470	55
AM3N-1209DHD30-RZ	10.8-13.2	±9	±167	3000	±470	78
AM3N-1212DHD30-RZ	10.8-13.2	±12	±125	3000	±470	80
AM3N-1215DHD30-RZ	10.8-13.2	±15	±100	3000	±470	78
AM3N-1218DHD30-RZ	10.8-13.2	±18	±84	3000	±220	62
AM3N-1224DHD30-RZ	10.8-13.2	±24	±63	3000	±220	76
AM3N-2403DHD30-RZ	21.6-26.4	±3.3	±400	3000	±1000	64
AM3N-2405DHD30-RZ	21.6-26.4	±5	±300	3000	±1000	77
AM3N-2407DHD30-RZ	21.6-26.4	±7.2	±208	3000	±470	55
AM3N-2409DHD30-RZ	21.6-26.4	±9	±167	3000	±470	78
AM3N-2412DHD30-RZ	21.6-26.4	±12	±125	3000	±470	80

AM3N-2415DH30-RZ	21.6-26.4	±15	±100	3000	±470	78
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Models

Dual output (Continue)

Model	Input Voltage (V)	Output Voltage (V)	Output Current max (mA)	Isolation (VDC)	Max Capacitive Load (uF)	Efficiency (%)
AM3N-2418DH30-RZ	21.6-26.4	±18	±84	3000	±220	65
AM3N-2424DH30-RZ	21.6-26.4	±24	±63	3000	±220	76
AM3N-0503DH52-RZ	4.5-5.5	±3.3	±400	5200	±1000	64
AM3N-0505DH52-RZ	4.5-5.5	±5	±300	5200	±1000	66
AM3N-0507DH52-RZ	4.5-5.5	±7.2	±208	5200	±470	53
AM3N-0509DH52-RZ	4.5-5.5	±9	±167	5200	±470	68
AM3N-0512DH52-RZ	4.5-5.5	±12	±125	5200	±470	70
AM3N-0515DH52-RZ	4.5-5.5	±15	±100	5200	±470	70
AM3N-0518DH52-RZ	4.5-5.5	±18	±84	5200	±220	57
AM3N-0524DH52-RZ	4.5-5.5	±24	±63	5200	±220	69
AM3N-1203DH52-RZ	10.8-13.2	±3.3	±400	5200	±1000	64
AM3N-1205DH52-RZ	10.8-13.2	±5	±300	5200	±1000	75
AM3N-1207DH52-RZ	10.8-13.2	±7.2	±208	5200	±470	55
AM3N-1209DH52-RZ	10.8-13.2	±9	±167	5200	±470	78
AM3N-1212DH52-RZ	10.8-13.2	±12	±125	5200	±470	80
AM3N-1215DH52-RZ	10.8-13.2	±15	±100	5200	±470	78
AM3N-1218DH52-RZ	10.8-13.2	±18	±84	5200	±220	62
AM3N-1224DH52-RZ	10.8-13.2	±24	±63	5200	±220	76
AM3N-2403DH52-RZ	21.6-26.4	±3.3	±400	5200	±1000	64
AM3N-2405DH52-RZ	21.6-26.4	±5	±300	5200	±1000	77
AM3N-2407DH52-RZ	21.6-26.4	±7.2	±208	5200	±470	53
AM3N-2409DH52-RZ	21.6-26.4	±9	±167	5200	±470	78
AM3N-2412DH52-RZ	21.6-26.4	±12	±125	5200	±470	80
AM3N-2415DH52-RZ	21.6-26.4	±15	±100	5200	±470	78
AM3N-2418DH52-RZ	21.6-26.4	±18	±84	5200	±220	65
AM3N-2424DH52-RZ	21.6-26.4	±24	±63	5200	±220	76

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	π (Pi) Network			
Turn on Transient process time			100	ms
Start up time		300		ms
Absolute Maximum Rating	5 Vin	0-7		VDC
	12 Vin	0-15		
	24 Vin	0-28		
Peak Input Voltage time		100		ms

Isolation Specifications

Parameters	Conditions	Typical	Rated	Units
Tested I/O voltage	3 sec		1000, 3000 and 5200	VDC
Resistance		> 1000		MOhm
Capacitance		60		pF

Output Specifications

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy		±2		%
Voltage balance		±1		%
Short Circuit protection	Continuous			
Short circuit restart	Auto-recovery			

Output Specifications (continued)

Parameters	Conditions	Typical	Maximum	Units
Line voltage regulation (Dual)		±0.5		%
Load voltage regulation (Dual)	0 to 100% load	±0.5		%
Load voltage regulation (Dual) 3.3V output model	0 to 100% load	±1.5		%
Temperature coefficient		±0.02		%/°C
Ripple & Noise	At 20MHz Bandwidth	75		mV p-p
Rising time		150		ms

General Specifications

Parameters	Conditions	Typical	Maximum	Units
Switching frequency	100% load	250		KHz
Operating temperature	Full Load without Derating		-40 to +85	°C
Storage temperature			-40 to +125	°C
Max Case temperature			95	°C
Cooling	Free air convection			
Humidity			90	%
Case material	Nickel coated copper, at 5200VDC plastic			
Weight		14.5		g
Dimensions (L x W x H)	Tolerance ±0.5 mm or ±0.02 inches	1.25 x 0.80 x 0.40 inches	31.75 x 20.32 x 10.16 mm	
MTBF	>3 000 000 hrs (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

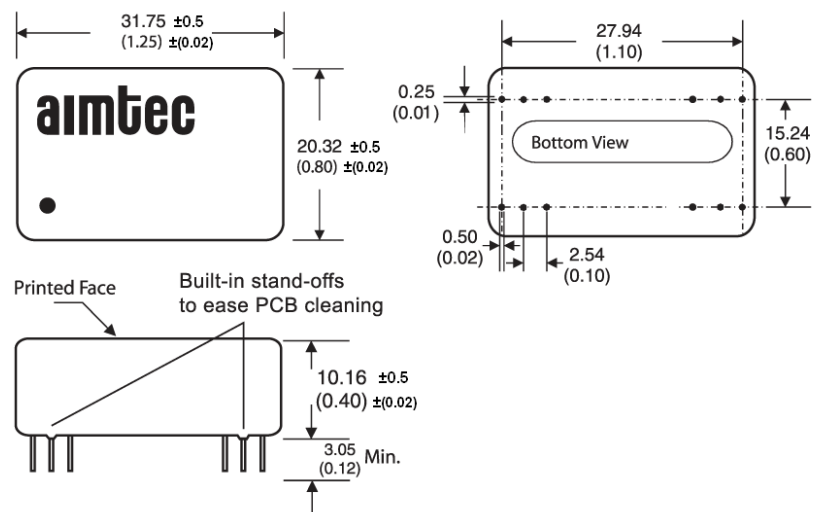
Safety Specifications

Parameters	
Agency Approvals	CE
Standards	EN55022 Class A,
	IEC61000-4-2, Perf. Criteria B
	IEC61000-4-3, Perf. Criteria A
	IEC61000-4-4, Perf. Criteria B (external 220uF/100V cap required)
	IEC61000-4-5, Perf. Criteria B (external 220uF/100V cap required)
	IEC61000-4-6, Perf. Criteria A
	IEC61000-4-8, Perf. Criteria A

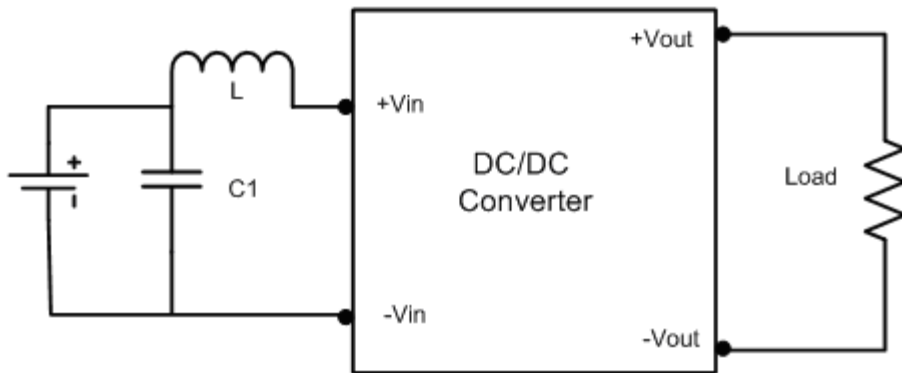
Pin Out Specifications

Pin	1000VDC	3000 and 5200VDC
	Dual	Dual
1	+V Input	+V Input
2	-V Output	+V Input
3	Common	No pin
10	Common	Common
11	+V Output	Common
12	-V Input	No pin
13	-V Input	-V Output
14	+V Output	No pin
15	Common	+V Output
22	Common	No pin
23	-V Output	-V Input
24	+V Input	-V Input

Dimensions

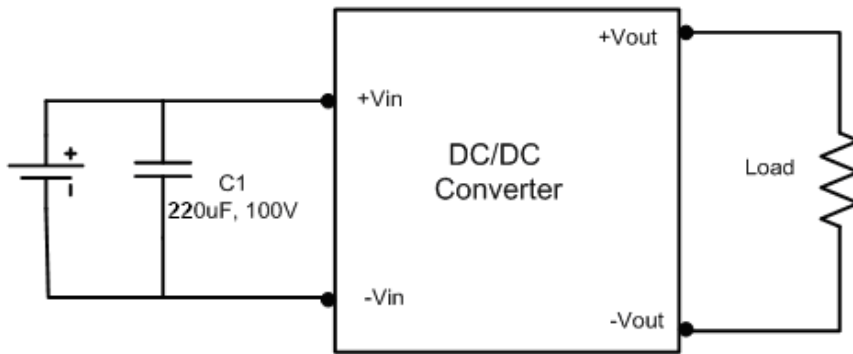


Test Circuits
Conducted Emissions:



C1	L1
220 μ F/100V	22 μ H

Surge:



NOTE: 1. Datasheets are updated as needed and as such, specifications are subject to change without notice. Once printed or downloaded, datasheets are no longer controlled by Aimtec; refer to www.aimtec.com for the most current product specifications. 2. Product labels shown, including safety agency certifications on labels, may vary based on the date manufactured. 3. Mechanical drawings and specifications are for reference only. 4. All specifications are measured at an ambient temperature of 25°C, humidity<75%, nominal input voltage and at rated output load unless otherwise specified. 5. Aimtec may not have conducted destructive testing or chemical analysis on all internal components and chemicals at the time of publishing this document. CAS numbers and other limited information are considered proprietary and may not be available for release. 6. This product is not designed for use in critical life support systems, equipment used in hazardous environments, nuclear control systems or other such applications which necessitate specific safety and regulatory standards other the ones listed in this datasheet. 7. Warranty is in accordance with Aimtec's standard Terms of Sale available at www.aimtec.com.