aimtec
Your Power Partner

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 -40ºC to + 85ºC
- Input / Output Isolation 1000, 3000 and 5200VDC
- Pin compatible with multiple manufacturers
- Continuous short circuit protection
- Dual regulated output

RoHS CE

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	68
AM3N-0505D-RZ	4.5-5.5	±5	±300	1000	±470	71
AM3N-0507D-RZ	4.5-5.5	±7.2	±208	1000	±470	74
AM3N-0509D-RZ	4.5-5.5	±9	±167	1000	±470	76
AM3N-0512D-RZ	4.5-5.5	±12	±125	1000	±470	73
AM3N-0515D-RZ	4.5-5.5	±15	±100	1000	±470	74
AM3N-0518D-RZ	4.5-5.5	±18	±83.3	1000	±220	73
AM3N-0524D-RZ	4.5-5.5	±24	±62.5	1000	±220	75
AM3N-1203D-RZ	10.8-13.2	±3.3	±400	1000	±1000	72
AM3N-1205D-RZ	10.8-13.2	±5	±300	1000	±1000	78
AM3N-1207D-RZ	10.8-13.2	±7.2	±208	1000	±470	80
AM3N-1209D-RZ	10.8-13.2	±9	±167	1000	±470	80
AM3N-1212D-RZ	10.8-13.2	±12	±125	1000	±470	78
AM3N-1215D-RZ	10.8-13.2	±15	±100	1000	±470	81
AM3N-1218D-RZ	10.8-13.2	±18	±83.3	1000	±220	81
AM3N-1224D-RZ	10.8-13.2	±24	±62.5	1000	±220	79
AM3N-2403D-RZ	21.6-26.4	±3.3	±455	1000	±1000	72
AM3N-2405D-RZ	21.6-26.4	±5	±300	1000	±470	79
AM3N-2407D-RZ	21.6-26.4	±7.2	±208	1000	±470	79
AM3N-2409D-RZ	21.6-26.4	±9	±167	1000	±470	82
AM3N-2412D-RZ	21.6-26.4	±12	±125	1000	±470	83
AM3N-2415D-RZ	21.6-26.4	±15	±100	1000	±470	81
AM3N-2418D-RZ	21.6-26.4	±18	±83.3	1000	±220	80
AM3N-2424D-RZ	21.6-26.4	±24	±62.5	1000	±220	81
AM3N-0503DH30-RZ	4.5-5.5	±3.3	±400	3000	±1000	68
AM3N-0505DH30-RZ	4.5-5.5	±5	±300	3000	±470	71
AM3N-0507DH30-RZ	4.5-5.5	±7.2	±208	3000	±470	74
AM3N-0509DH30-RZ	4.5-5.5	±9	±167	3000	±470	76
AM3N-0512DH30-RZ	4.5-5.5	±12	±125	3000	±470	73
AM3N-0515DH30-RZ	4.5-5.5	±15	±100	3000	±470	74
AM3N-0518DH30-RZ	4.5-5.5	±18	±83.3	3000	±220	73
AM3N-0524DH30-RZ	4.5-5.5	±24	±62.5	3000	±220	75
AM3N-1203DH30-RZ	10.8-13.2	±3.3	±400	3000	±1000	72
AM3N-1205DH30-RZ	10.8-13.2	±5	±300	3000	±1000	78
AM3N-1207DH30-RZ	10.8-13.2	±7.2	±208	3000	±470	80
AM3N-1209DH30-RZ	10.8-13.2	±9	±167	3000	±470	80
AM3N-1212DH30-RZ	10.8-13.2	±12	±125	3000	±470	78
AM3N-1215DH30-RZ	10.8-13.2	±15	±100	3000	±470	81
AM3N-1218DH30-RZ	10.8-13.2	±18	±83.3	3000	±220	81
AM3N-1224DH30-RZ	10.8-13.2	±24	±62.5	3000	±220	79

Models
Dual output (Continue)

Model	Input Voltage (V)	Output Voltage (V)	Output Current max (mA)	Isolation (VDC)	Max Capacitive Load (uF)	Efficiency (%)
AM3N-2403DH30-RZ	21.6-26.4	±3.3	±455	3000	±1000	72
AM3N-2405DH30-RZ	21.6-26.4	±5	±300	3000	±470	79
AM3N-2407DH30-RZ	21.6-26.4	±7.2	±208	3000	±470	79
AM3N-2409DH30-RZ	21.6-26.4	±9	±167	3000	±470	82
AM3N-2412DH30-RZ	21.6-26.4	±12	±125	3000	±470	83
AM3N-2415DH30-RZ	21.6-26.4	±15	±100	3000	±470	81
AM3N-2418DH30-RZ	21.6-26.4	±18	±83.3	3000	±220	80
AM3N-2424DH30-RZ	21.6-26.4	±24	±62.5	3000	±220	81
AM3N-0503DH52-RZ	4.5-5.5	±3.3	±400	5200	±1000	68
AM3N-0505DH52-RZ	4.5-5.5	±5	±300	5200	±470	71
AM3N-0507DH52-RZ	4.5-5.5	±7.2	±208	5200	±470	74
AM3N-0509DH52-RZ	4.5-5.5	±9	±167	5200	±470	76
AM3N-0512DH52-RZ	4.5-5.5	±12	±125	5200	±470	73
AM3N-0515DH52-RZ	4.5-5.5	±15	±100	5200	±470	74
AM3N-0518DH52-RZ	4.5-5.5	±18	±83.3	5200	±220	73
AM3N-0524DH52-RZ	4.5-5.5	±24	±62.5	5200	±220	75
AM3N-1203DH52-RZ	10.8-13.2	±3.3	±400	5200	±1000	72
AM3N-1205DH52-RZ	10.8-13.2	±5	±300	5200	±1000	78
AM3N-1207DH52-RZ	10.8-13.2	±7.2	±208	5200	±470	80
AM3N-1209DH52-RZ	10.8-13.2	±9	±167	5200	±470	80
AM3N-1212DH52-RZ	10.8-13.2	±12	±125	5200	±470	78
AM3N-1215DH52-RZ	10.8-13.2	±15	±100	5200	±470	81
AM3N-1218DH52-RZ	10.8-13.2	±18	±83.3	5200	±220	81
AM3N-1224DH52-RZ	10.8-13.2	±24	±62.5	5200	±220	79
AM3N-2403DH52-RZ	21.6-26.4	±3.3	±455	5200	±1000	72
AM3N-2405DH52-RZ	21.6-26.4	±5	±300	5200	±470	79
AM3N-2407DH52-RZ	21.6-26.4	±7.2	±208	5200	±470	79
AM3N-2409DH52-RZ	21.6-26.4	±9	±167	5200	±470	82
AM3N-2412DH52-RZ	21.6-26.4	±12	±125	5200	±470	83
AM3N-2415DH52-RZ	21.6-26.4	±15	±100	5200	±470	81
AM3N-2418DH52-RZ	21.6-26.4	±18	±83.3	5200	±220	80
AM3N-2424DH52-RZ	21.6-26.4	±24	±62.5	5200	±220	81

Input Specifications

Parameters	Nominal	Typical	Maximum	Units
Voltage range	5 12 24	4.5-5.5 10.8-13.2 21.6-26.4		VDC
Filter	π (Pi) Network			
Absolute Maximum Rating	5 Vin 12 Vin 24 Vin	0-7 0-15 0-28		VDC
Peak Input Voltage time			100	ms
Transient Recovery time	25% load step change	10		ms
Input Reflected Ripple Current *		35		mA p-p
Transient Response Deviation	3.3V output models, 25% load step change		±5	%
	Other models, 25% load step change		±3	%

* The input reflected ripple current should be measured with a 12µH inductor.

Isolation Specifications

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

Output Specifications

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy			±2	%
Short Circuit protection	Continuous			
Short circuit restart	Auto-recovery			
Line voltage regulation			±0.5	%
Load voltage regulation	3.3V output models, 0 to 100% load		±2	%
	Other models, 0 to 100% load		±0.5	%
Temperature coefficient		±0.02		%/°C
Ripple & Noise	At 20MHz Bandwidth		75	mV p-p

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			100	°C
Cooling	Free air convection			
Humidity			95	%
Case material	Nickel coated copper for 1000V and 3000V isolation models UL94V-0 rated plastic for 5200V isolation models			
Weight	Metal case	17		g
	Plastic case	12.5		g
Dimensions (L x W x H)	1.25 x 0.80 x 0.40 inches 31.75 x 20.32 x 10.16 mm			
MTBF	>1 000 000 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

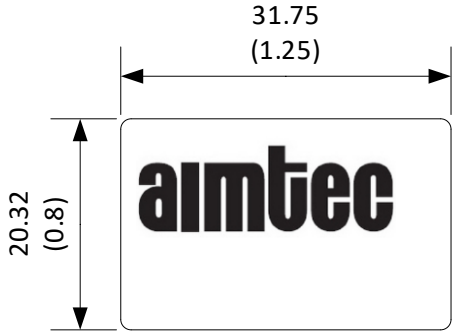
Parameters	
Agency Approvals	CE
Standards	Design to meet IEC/EN/UL 60950-1:2001 & IEC/EN/UL 62368-1
	EN55022 Class A, with the recommended circuit
	IEC61000-4-2, Perf. Criteria A
	IEC61000-4-3, Perf. Criteria A
	IEC61000-4-4, Perf. Criteria A (external 220uF/100V cap required)
	IEC61000-4-5, Perf. Criteria A (external 220uF/100V cap required)
	IEC61000-4-6, Perf. Criteria A
	IEC61000-4-8, Perf. Criteria A

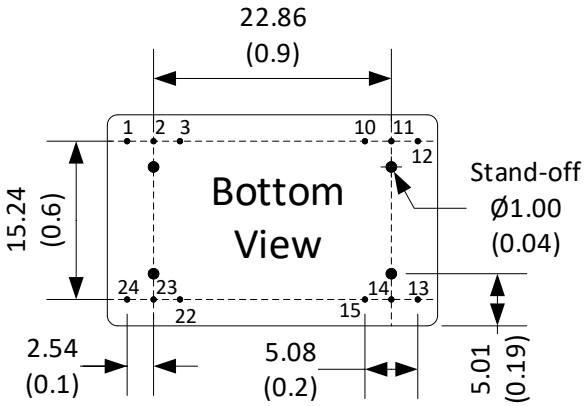
Pin Out Specifications

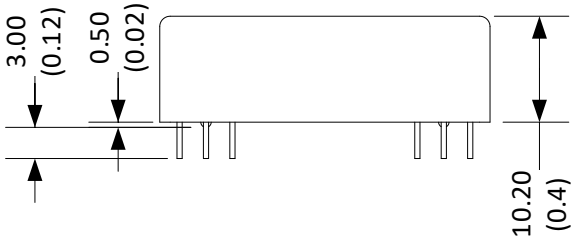
Pin	1000VDC	3000 and 5200VDC
	Dual	Dual
1	+V Input	+V Input
2	-V Output	+V Input
3	Common	No pin
10	Common	Common
11	+V Output	Common
12	-V Input	No pin
13	-V Input	-V Output
14	+V Output	No pin
15	Common	+V Output
22	Common	No pin
23	-V Output	-V Input
24	+V Input	-V Input

Dimensions

1000V and 3000V isolation models

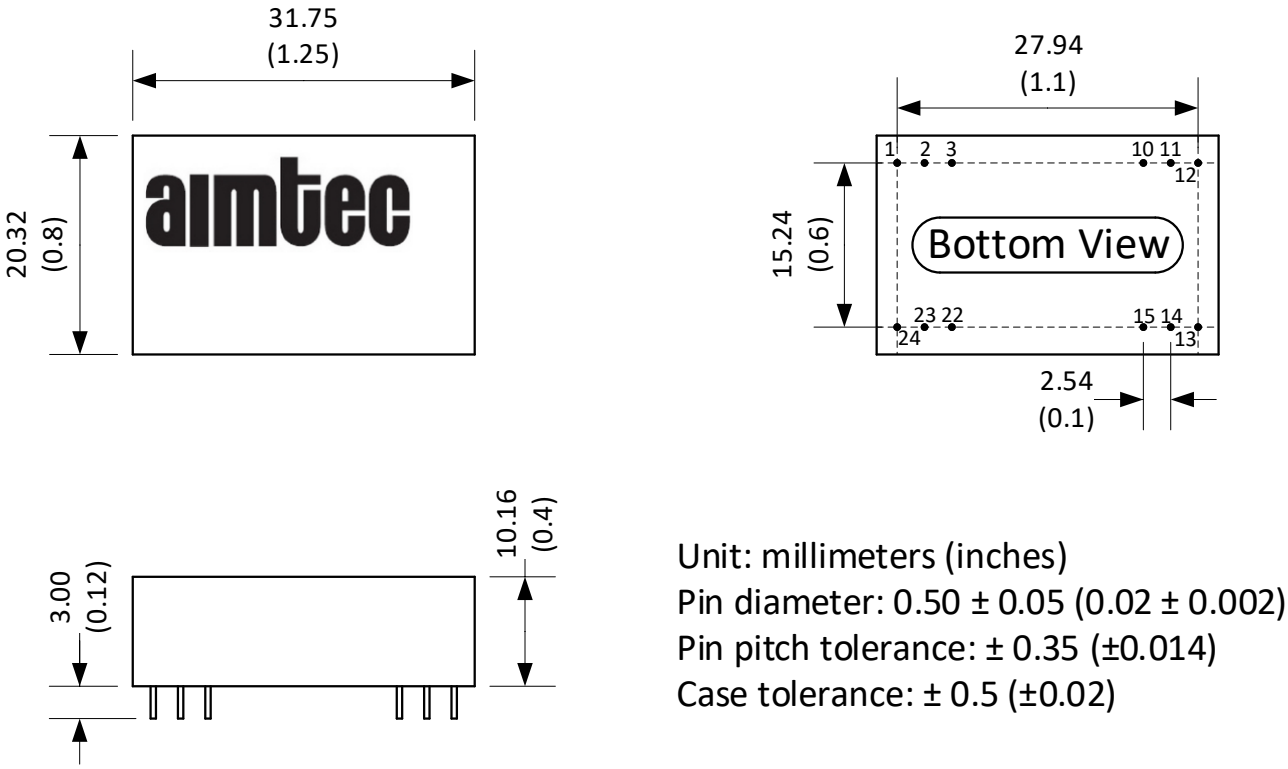






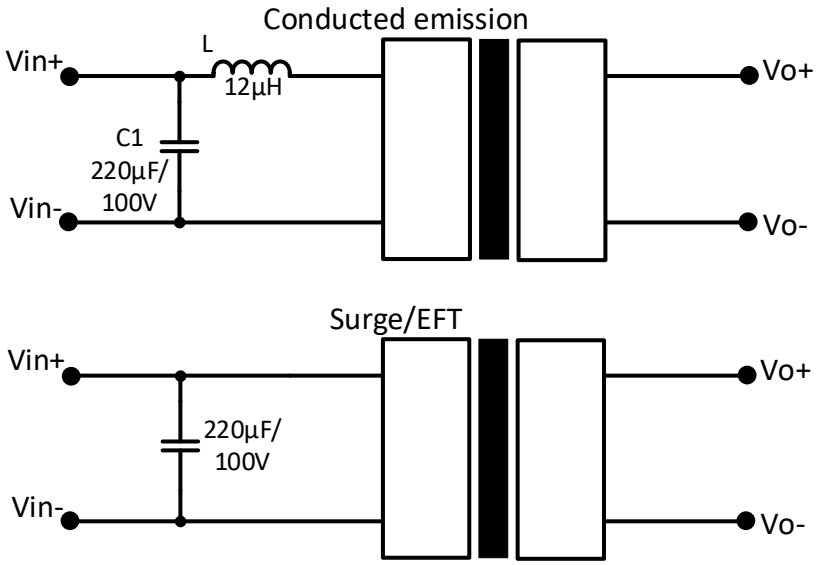
Unit: millimeters (inches)
Pin diameter: 0.50 ± 0.05 (0.02 ± 0.002)
Pin pitch tolerance: ± 0.35 (±0.014)
Case tolerance: ± 0.5 (±0.02)
Stand-off tolerance: ± 0.1 (±0.004)

5200V isolation models



Unit: millimeters (inches)
Pin diameter: 0.50 ± 0.05 (0.02 ± 0.002)
Pin pitch tolerance: ± 0.35 (±0.014)
Case tolerance: ± 0.5 (±0.02)

Recommended Circuits



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.