



**THE DATASHEET OF
AM3N-0505DH52-RZ**



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	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
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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	4.5-5.5		VDC
	12	10.8-13.2		
	24	21.6-26.4		
Filter	π (Pi) Network			
Absolute Maximum Rating	5 Vin	0-7		VDC
	12 Vin	0-15		
	24 Vin	0-28		
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

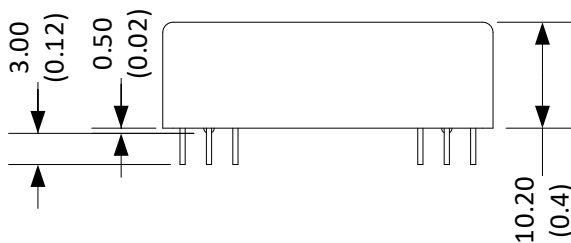
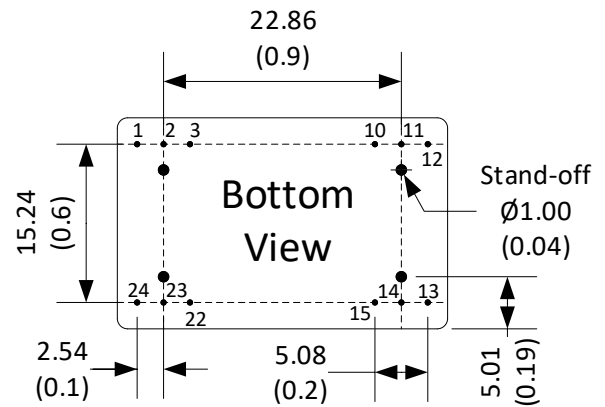
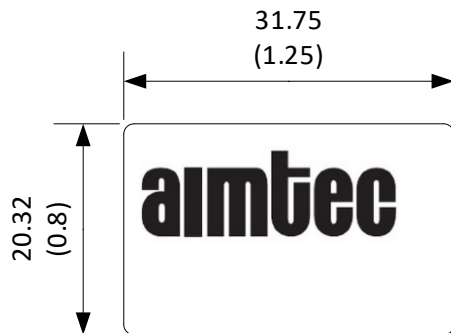
Parameters	
Agency Approvals	CE
Standards	Design to meet IEC/EN/UL 60950-1:2001 & IEC/EN/UL 62368-1
	EN55022 Class A, with the recommended circuit
	IEC61000-4-2, Perf. Criteria A
	IEC61000-4-3, Perf. Criteria A
	IEC61000-4-4, Perf. Criteria A (external 220uF/100V cap required)
	IEC61000-4-5, Perf. Criteria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

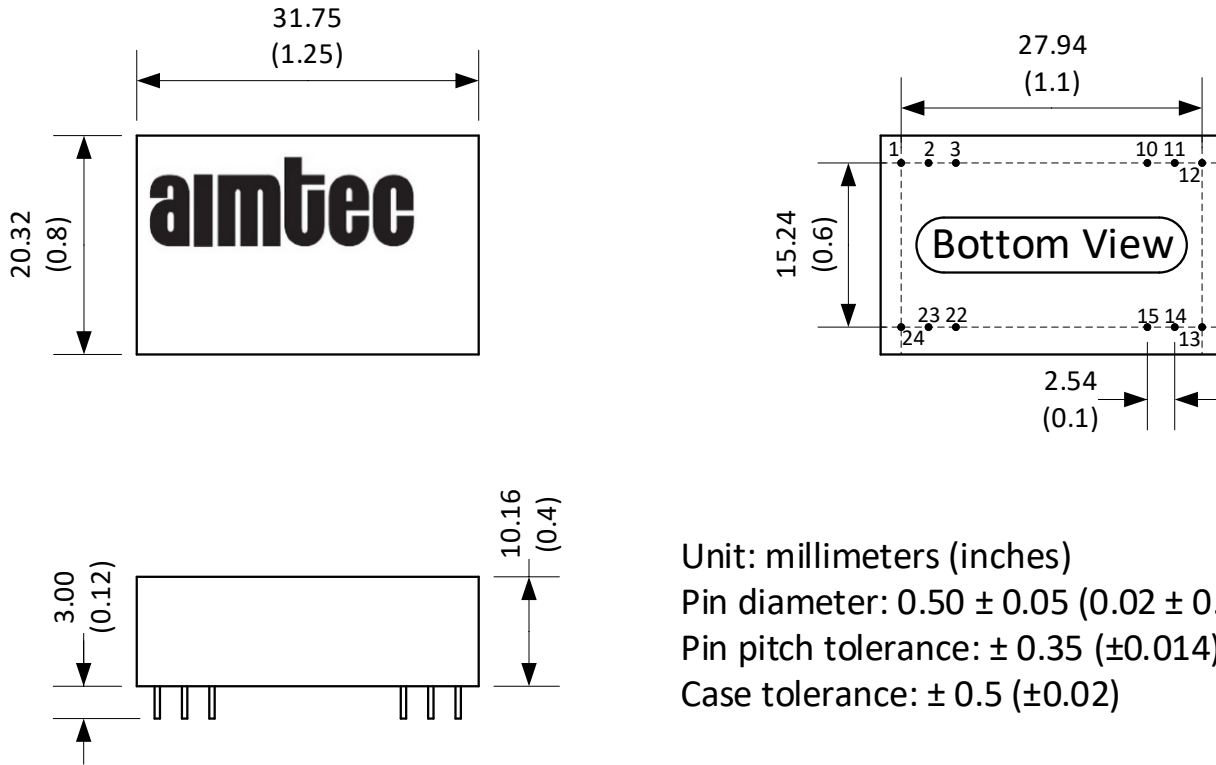
Pin diameter: 0.50 ± 0.05 (0.02 ± 0.002)

Pin pitch tolerance: ± 0.35 (± 0.014)

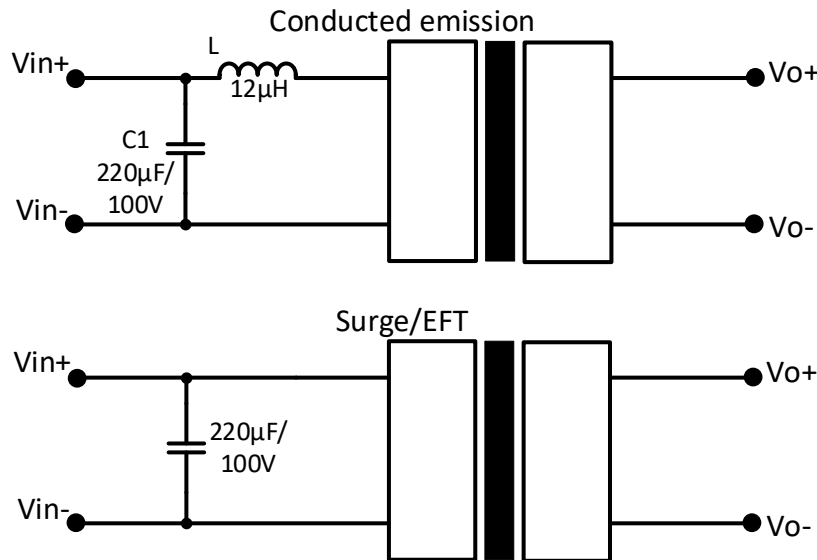
Case tolerance: ± 0.5 (± 0.02)

Stand-off tolerance: ± 0.1 (± 0.004)

5200V isolation models



Recommended Circuits



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