Series AM3T-Z

3 Watt | DC-DC Converter

FEATURES:

- RoHS compliant
- Wide 2:1 input range
- High efficiency up to 82%
- Continuous short circuit protection
- Operating temperature -40°C to + 85°C
- Input / Output Isolation 1500 and 3500 VDC
- Pin compatible with multiple manufacturers
- Low profile metal package

RoHS

Models
Single output

Model	Input Voltage (V)	Output Voltage (V)	Output Current max (mA)	Isolation (VDC)	Capacitive load, max (µF)	Efficiency (%)
AM3T-1203SZ	9-18	3.3	900	1500	470	72
AM3T-1205SZ	9-18	5	600	1500	470	76
AM3T-1207SZ	9-18	7.2	417	1500	100	79
AM3T-1209SZ	9-18	9	333	1500	68	78
AM3T-1212SZ	9-18	12	250	1500	47	80
AM3T-1215SZ	9-18	15	200	1500	47	80
AM3T-1218SZ	9-18	18	167	1500	47	79
AM3T-1224SZ	9-18	24	125	1500	22	80
AM3T-2403SZ	18-36	3.3	900	1500	470	72
AM3T-2405SZ	18-36	5	600	1500	470	76
AM3T-2407SZ	18-36	7.2	417	1500	220	81
AM3T-2409SZ	18-36	9	333	1500	68	78
AM3T-2412SZ	18-36	12	250	1500	47	80
AM3T-2415SZ	18-36	15	200	1500	47	82
AM3T-2418SZ	18-36	18	167	1500	100	82
AM3T-2424SZ	18-36	24	125	1500	22	82
AM3T-4803SZ	36-72	3.3	900	1500	470	72
AM3T-4805SZ	36-72	5	600	1500	470	76
AM3T-4807SZ	36-72	7.2	417	1500	470	81
AM3T-4809SZ	36-72	9	333	1500	68	78
AM3T-4812SZ	36-72	12	250	1500	47	80
AM3T-4815SZ	36-72	15	200	1500	47	80
AM3T-4818SZ	36-72	18	167	1500	100	83
AM3T-4824SZ	36-72	24	125	1500	22	80
AM3T-1203SH35Z	9-18	3.3	900	3500	470	72
AM3T-1205SH35Z	9-18	5	600	3500	470	76
AM3T-1207SH35Z	9-18	7.2	417	3500	220	79
AM3T-1209SH35Z	9-18	9	333	3500	68	78
AM3T-1212SH35Z	9-18	12	250	3500	47	80
AM3T-1215SH35Z	9-18	15	200	3500	47	80
AM3T-1218SH35Z	9-18	18	167	3500	22	79
AM3T-1224SH35Z	9-18	24	125	3500	22	80
AM3T-2403SH35Z	18-36	3.3	900	3500	470	72
AM3T-2405SH35Z	18-36	5	600	3500	470	76
AM3T-2407SH35Z	18-36	7.2	417	3500	220	81
AM3T-2409SH35Z	18-36	9	333	3500	68	78
AM3T-2412SH35Z	18-36	12	250	3500	47	80
AM3T-2415SH35Z	18-36	15	200	3500	47	82
AM3T-2418SH35Z	18-36	18	167	3500	47	82
AM3T-2424SH35Z	18-36	24	125	3500	22	82
AM3T-4803SH35Z	36-72	3.3	900	3500	470	72
AM3T-4805SH35Z	36-72	5	600	3500	470	76
AM3T-4807SH35Z	36-72	7.2	417	3500	470	81
AM3T-4809SH35Z	36-72	9	333	3500	68	78
AM3T-4812SH35Z	36-72	12	250	3500	47	80
AM3T-4815SH35Z	36-72	15	200	3500	47	80

Models
Single output (continue)

Model	Input Voltage (V)	Output Voltage (V)	Output Current max (mA)	Isolation (VDC)	Capacitive load, max (µF)	Efficiency (%)
AM3T-4818SH35Z	36-72	18	167	3500	47	83
AM3T-4824SH35Z	36-72	24	125	3500	22	80

Models
Dual output

Model	Input Voltage (V)	Output Voltage (V)	Output Current max (mA)	Isolation (VDC)	Capacitive load, max (µF)	Efficiency (%)
AM3T-1203DZ	9-18	±3.3	±450	1500	±220	72
AM3T-1205DZ	9-18	±5	±300	1500	±220	76
AM3T-1207DZ	9-18	±7.2	±208	1500	±100	78
AM3T-1209DZ	9-18	±9	±167	1500	±33	80
AM3T-1212DZ	9-18	±12	±125	1500	±22	80
AM3T-1215DZ	9-18	±15	±100	1500	±22	80
AM3T-1218DZ	9-18	±18	±83	1500	±22	78
AM3T-1224DZ	9-18	±24	±63	1500	±10	80
AM3T-2403DZ	18-36	±3.3	±450	1500	±220	72
AM3T-2405DZ	18-36	±5	±300	1500	±220	78
AM3T-2407DZ	18-36	±7.2	±208	1500	±220	80
AM3T-2409DZ	18-36	±9	±167	1500	±33	80
AM3T-2412DZ	18-36	±12	±125	1500	±22	82
AM3T-2415DZ	18-36	±15	±100	1500	±22	82
AM3T-2418DZ	18-36	±18	±83	1500	±10	78
AM3T-2424DZ	18-36	±24	±63	1500	±10	82
AM3T-4803DZ	36-72	±3.3	±450	1500	±220	72
AM3T-4805DZ	36-72	±5	±300	1500	±220	76
AM3T-4807DZ	36-72	±7.2	±208	1500	±330	79
AM3T-4809DZ	36-72	±9	±167	1500	±33	80
AM3T-4812DZ	36-72	±12	±125	1500	±22	80
AM3T-4815DZ	36-72	±15	±100	1500	±22	80
AM3T-4818DZ	36-72	±18	±83	1500	±68	80
AM3T-4824DZ	36-72	±24	±63	1500	±10	80
AM3T-1203DH35Z	9-18	±3.3	±450	3500	±220	72
AM3T-1205DH35Z	9-18	±5	±300	3500	±220	76
AM3T-1207DH35Z	9-18	±7.2	±208	3500	±100	78
AM3T-1209DH35Z	9-18	±9	±167	3500	±33	80
AM3T-1212DH35Z	9-18	±12	±125	3500	±22	80
AM3T-1215DH35Z	9-18	±15	±100	3500	±22	80
AM3T-1218DH35Z	9-18	±18	±83	3500	±22	78
AM3T-1224DH35Z	9-18	±24	±63	3500	±10	80
AM3T-2403DH35Z	18-36	±3.3	±450	3500	±220	72
AM3T-2405DH35Z	18-36	±5	±300	3500	±220	76
AM3T-2407DH35Z	18-36	±7.2	±208	3500	±220	78
AM3T-2409DH35Z	18-36	±9	±167	3500	±33	80
AM3T-2412DH35Z	18-36	±12	±125	3500	±22	80
AM3T-2415DH35Z	18-36	±15	±100	3500	±22	80
AM3T-2418DH35Z	18-36	±18	±83	3500	±22	78
AM3T-2424DH35Z	18-36	±24	±63	3500	±10	80
AM3T-4803DH35Z	36-72	±3.3	±450	3500	±220	72
AM3T-4805DH35Z	36-72	±5	±300	3500	±220	76
AM3T-4807DH35Z	36-72	±7.2	±208	3500	±220	80
AM3T-4809DH35Z	36-72	±9	±167	3500	±33	79
AM3T-4812DH35Z	36-72	±12	±125	3500	±22	80

Models

Dual output (continue)

Model	Input Voltage (V)	Output Voltage (V)	Output Current max (mA)	Isolation (VDC)	Capacitive load, max (µF)	Efficiency (%)
AM3T-4815DH35Z	36-72	±15	±100	3500	±22	80
AM3T-4818DH35Z	36-72	±18	±83	3500	±22	80
AM3T-4824DH35Z	36-72	±24	±63	3500	±10	80

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

Input Specifications

Parameters	Nominal	Typical	Maximum	Units
Voltage range	12	9-18		VDC
	24	18-36		VDC
	48	36-72		VDC
Filter	π (Pi) Network			
Absolute Maximum Rating	12 Vin	-0.7-24		VDC
	24 Vin	-0.7-40		VDC
	48 Vin	-0.7-80		VDC
Peak Input Voltage time		100		ms
Input Reflected ripple current *		35		mA p-p

* The input reflected ripple current should be measured with connected 12µH inductor and a 47µF capacitor.

Isolation Specifications

Parameters	Conditions	Typical	Rated	Units
Tested I/O voltage	60 sec		1500 or 3500	VDC
Tested Case/Input and Output	60 sec		1000	VDC
Resistance		> 1000		MOhm
Capacitance		470		pF

Output Specifications

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy		±1		%
Short Circuit protection	Continuous			
Short circuit restart	Auto-recovery			
Line voltage regulation	LL-HL	±0.5		%
Load voltage regulation	0 – 100% load, 3.3V/±3.3V Models	±1.5		%
	0 – 100% load, others	±0.5		%
Temperature coefficient		±0.02		%/°C
Ripple & Noise*	At 20MHz Bandwidth	60		mV p-p

* Measured with a 1µF CC.

General Specifications

Parameters	Conditions	Typical	Maximum	Units
Switching frequency	100% load	266		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			
Weight		17		g
Dimensions(L x W x H)	Tolerance ±0.5 mm or ±0.02 inches	1.25 x 0.8 x 0.4 inches 31.75 x 20.32 x 10.16mm		
MTBF	>1 121 000 hrs (MIL-HDBK -217F, Ground Benign, t=+25°C)			
Manual soldering temperature	1.5mm from case for 10sec		260	°C

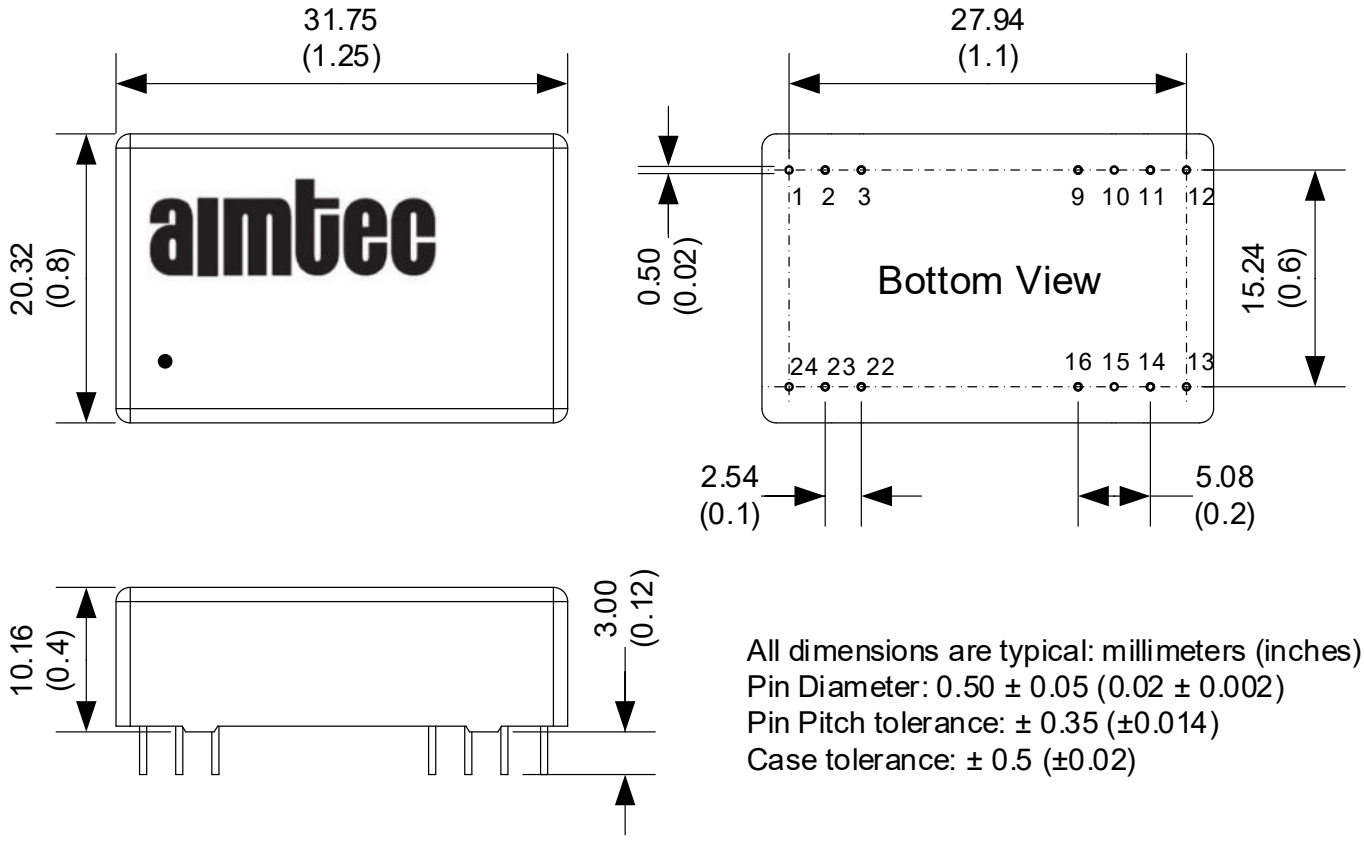
Safety Specifications

Parameters	
Standards	Designed to meet IEC/EN/UL60950-1, 62368-1
	EN55032 Class A, with 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	1500VDC		3500VDC	
	Single	Dual	Single	Dual
1	+V Input	+V Input	No pin	No pin
2	N.C.	-V Output	-V Input	-V Input
3	N.C.	Common	-V Input	-V Input
9	No pin	No pin	No pin	Common
10	-V Output	Common	No pin	No pin
11	+V Output	+V Output	N.C.	-V Output
12/13	-V Input	-V Input	No pin	No pin
14	+V Output	+V Output	+V Output	+V Output
15	-V Output	Common	No pin	No pin
16	No pin	No pin	-V Output	Common
22	N.C.	Common	+V Input	+V Input
23	N.C.	-V Output	+V Input	+V Input
24	+V Input	+V Input	No pin	No pin

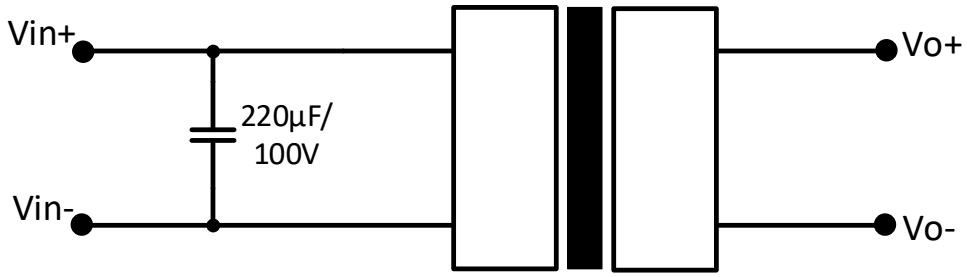
Dimensions



All dimensions are typical: 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

Surge/EFT



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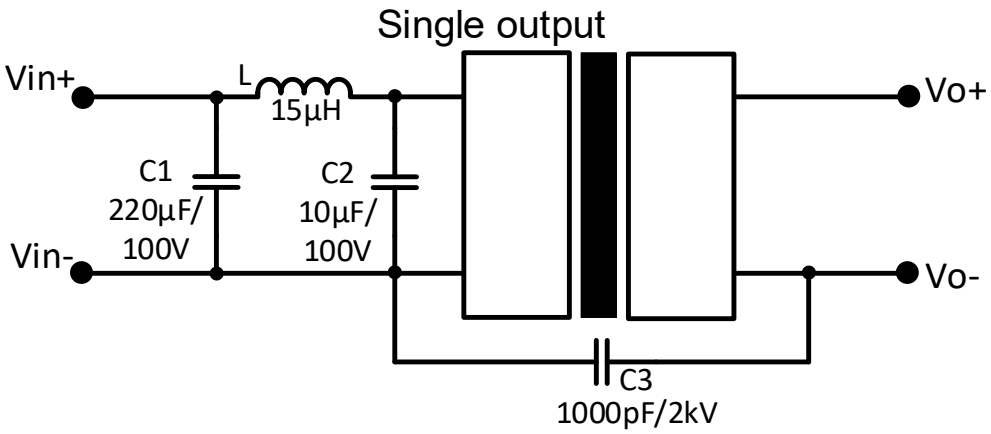

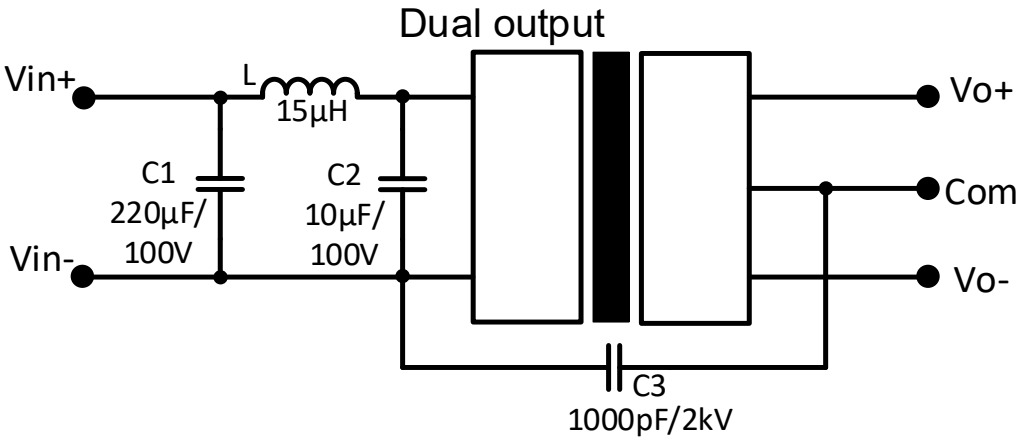

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