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AM3T-LPZ



24PIN DIP Package

The AM3T-LPZ is a 3W 24PIN DIP DC/DC converter that offers great cost savings thanks to an improved manufacturing process. It also features excellent reliability and performance while offering a standard input voltage range of 4.5-75VDC as well as an output voltage of -24 to 28V. This compact 24PIN DIP design will surely benefit your new system design.

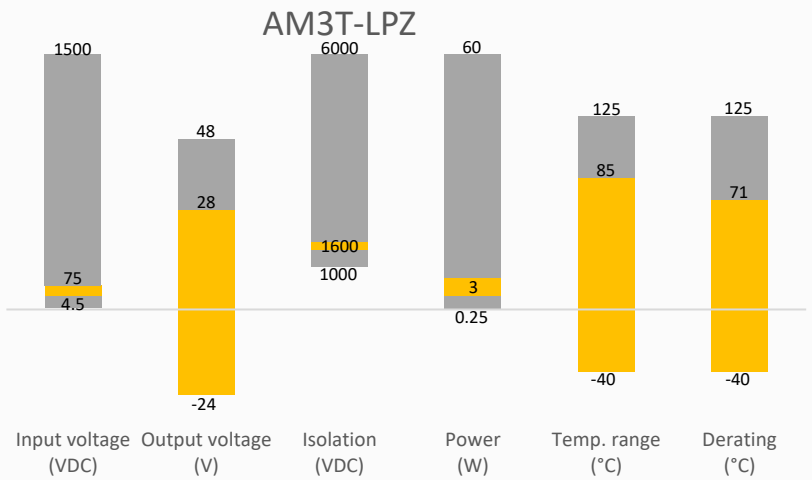
This new series offers a great operating temperature range from -40 to 85°C. Also, an isolation of 1600VDC for improved reliability and system safety.

The AM3T-LPZ is suitable for many applications such as industrial systems, portable equipment, and internet of things.

Features

- Continuous Short circuit protection
- Operating Temp: -40 °C to +85 °C
- Industry standard 24PIN DIP pin-out
- Efficiency up to 82%
- Regulated output
- 2:1 Input Voltages Range

Summary



RoHS

3yr Warranty

Training

Product Training Video (click to open)

Press Release

Coming Soon!

Application Notes

Applications

Industrial

Portable Equipment

IoT

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Models & Specifications

Single Output								
Model	Input Voltage (VDC)	Output Voltage (VDC)	Output Current max (mA)	Input Current		Efficiency Typ. (%)	Maximum Capacitive Load (µF)	Isolation (VDC)
				No Load mA	Full Load mA			
AM3T-0503SLPZ	5 (4.5-9)	3.3	909	50	789	74	4700	1600
AM3T-0505SLPZ	5 (4.5-9)	5	600	50	789	76	4700	1600
AM3T-0506SLPZ	5 (4.5-9)	6	500	50	789	76	3600	1600
AM3T-0509SLPZ	5 (4.5-9)	9	333	50	789	78	2700	1600
AM3T-0512SLPZ	5 (4.5-9)	12	250	50	789	78	2700	1600
AM3T-0515SLPZ	5 (4.5-9)	15	200	50	789	78	2200	1600
AM3T-0518SLPZ	5 (4.5-9)	18	167	50	789	78	1800	1600
AM3T-0524SLPZ	5 (4.5-9)	24	125	50	789	78	1800	1600
AM3T-0528SLPZ	5 (4.5-9)	28	107	50	789	78	1200	1600
AM3T-1203SLPZ	12 (9-18)	3.3	909	30	316	77	4700	1600
AM3T-1205SLPZ	12 (9-18)	5	600	30	316	80	4700	1600
AM3T-1206SLPZ	12 (9-18)	6	500	30	316	80	3600	1600
AM3T-1209SLPZ	12 (9-18)	9	333	30	316	80	2700	1600
AM3T-1212SLPZ	12 (9-18)	12	250	30	316	81	2700	1600
AM3T-1215SLPZ	12 (9-18)	15	200	30	316	81	2200	1600
AM3T-1218SLPZ	12 (9-18)	18	167	30	316	81	1800	1600
AM3T-1224SLPZ	12 (9-18)	24	125	30	316	81	1800	1600
AM3T-1228SLPZ	12 (9-18)	28	107	30	316	81	1200	1600
AM3T-2403SLPZ	24 (18-36)	3.3	909	15	156	77	4700	1600
AM3T-2405SLPZ	24 (18-36)	5	600	15	156	80	4700	1600
AM3T-2406SLPZ	24 (18-36)	6	500	15	156	80	3600	1600
AM3T-2409SLPZ	24 (18-36)	9	333	15	156	81	2700	1600
AM3T-2412SLPZ	24 (18-36)	12	250	15	156	82	2700	1600
AM3T-2415SLPZ	24 (18-36)	15	200	15	156	82	2200	1600
AM3T-2418SLPZ	24 (18-36)	18	167	15	156	82	1800	1600
AM3T-2424SLPZ	24 (18-36)	24	125	15	156	82	1800	1600
AM3T-2428SLPZ	24 (18-36)	28	107	15	156	82	1800	1600
AM3T-4803SLPZ	48 (36-75)	3.3	909	5	81	74	4700	1600
AM3T-4805SLPZ	48 (36-75)	5	600	5	81	77	4700	1600
AM3T-4806SLPZ	48 (36-75)	6	500	5	81	77	3600	1600
AM3T-4809SLPZ	48 (36-75)	9	333	5	81	80	2700	1600
AM3T-4812SLPZ	48 (36-75)	12	250	5	81	81	2700	1600
AM3T-4815SLPZ	48 (36-75)	15	200	5	81	81	2200	1600
AM3T-4818SLPZ	48 (36-75)	18	167	5	81	81	1800	1600
AM3T-4824SLPZ	48 (36-75)	24	125	5	81	81	1800	1600
AM3T-4828SLPZ	48 (36-75)	28	107	5	81	81	1200	1600

Dual Output								
Model	Input Voltage (VDC)	Output Voltage (VDC)	Output Current max (mA)	Input Current		Efficiency Typ. (%)	Maximum Capacitive Load (µF)	Isolation (VDC)
				No Load mA	Full Load mA			
AM3T-0503DLPZ	5 (4.5-9)	±3.3	±454	50	789	74	2200	1600
AM3T-0505DLPZ	5 (4.5-9)	±5	±300	50	789	76	2200	1600
AM3T-0509DLPZ	5 (4.5-9)	±9	±167	50	789	76	2000	1600

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AM3T-0512DLPZ	5 (4.5-9)	±12	±125	50	789	77	1800	1600
AM3T-0515DLPZ	5 (4.5-9)	±15	±100	50	789	77	1000	1600
AM3T-0524DLPZ	5 (4.5-9)	±24	±63	50	789	77	680	1600
AM3T-1203DLPZ	12 (9-18)	±3.3	±454	30	316	77	2200	1600
AM3T-1205DLPZ	12 (9-18)	±5	±300	30	316	79	2200	1600
AM3T-1209DLPZ	12 (9-18)	±9	±167	30	316	80	2000	1600
AM3T-1212DLPZ	12 (9-18)	±12	±125	30	316	81	1800	1600
AM3T-1215DLPZ	12 (9-18)	±15	±100	30	316	81	1000	1600
AM3T-1224DLPZ	12 (9-18)	±24	±63	30	316	81	680	1600
AM3T-2403DLPZ	24 (18-36)	±3.3	±454	15	156	79	2200	1600
AM3T-2405DLPZ	24 (18-36)	±5	±300	15	156	81	2200	1600
AM3T-2409DLPZ	24 (18-36)	±9	±167	15	156	82	2000	1600
AM3T-2412DLPZ	24 (18-36)	±12	±125	15	156	82	1800	1600
AM3T-2415DLPZ	24 (18-36)	±15	±100	15	156	82	1000	1600
AM3T-2424DLPZ	24 (18-36)	±24	±63	15	156	82	680	1600
AM3T-4803DLPZ	48 (36-75)	±3.3	±454	5	81	77	2200	1600
AM3T-4805DLPZ	48 (36-75)	±5	±300	5	81	79	2200	1600
AM3T-4809DLPZ	48 (36-75)	±9	±167	5	81	80	2000	1600
AM3T-4812DLPZ	48 (36-75)	±12	±125	5	81	82	1800	1600
AM3T-4815DLPZ	48 (36-75)	±15	±100	5	81	82	1000	1600
AM3T-4824DLPZ	48 (36-75)	±24	±63	5	81	82	680	1600

Input Specification

Parameters	Conditions	Typical	Maximum	Units
Filter	Pi filter			
Voltage Types			2:1	
Maximum Input Voltage	5Vin models		11	VDC
	12Vin models		20	VDC
	24Vin models		40	VDC
	48Vin models		80	VDC
Startup Input Voltage*	5Vin models		4.5	VDC
	12Vin models		9	VDC
	24Vin models		18	VDC
	48Vin models		36	VDC
Absolute maximum rating	5Vin models, 1sec. max.	≥-0.7	12	VDC
	12Vin models, 1sec. max.	≥-0.7	25	VDC
	24Vin models, 1sec. max.	≥-0.7	50	VDC
	48Vin models, 1sec. max.	≥-0.7	100	VDC
Input under voltage lockout	5Vin models	4		VDC
	12Vin models	6.5		VDC
	24Vin models	6.5		VDC
	48Vin models	15.5		VDC
Input Reflected Ripple Current	5/12Vin models	20		mA
	24/48Vin models	30		mA

*Operating with less than 5% of rated load will not cause permanent damage to the converters, but the performance data may not fall into the specifications, and stable operating is not assured.

Isolation Specification

Parameters	Conditions	Minimum	Typical	Maximum	Units
Tested I/O voltage	60 sec, leakage ≤ 1mA		1600		VDC

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Resistance	500VDC	1000			MΩ
Capacitance	Input / output, 100KHz / 0.1V		1000		pF

Output Specification

Parameters	Conditions	Typical	Maximum	Units
Voltage Tolerance	0~100% load, positive output	±1	±3	%
	0~100% load, negative output	±2	±5	%
Line Regulation	Full load, positive output	±0.2	±0.5	%
	Full load, negative output	±0.5	±1.0	%
Load regulation	5~100% load, positive output	±0.5	±1.0	%
	5~100% load, negative output	±1.0	±3.0	%
Ripple & Noise*	5~100% load	50	120	mV p-p
Temperature Coefficient	Full load		±0.03	%/°C
Transient recovery time	25% load step change	0.3	0.5	ms
Transient recovery deviation	25% load step change, 3.3/5/6Vout models	±5	±8	%
	25% load step change, others	±3	±5	%

* Measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uF & 47uF parallel capacitor.

General Specifications

Parameters	Conditions	Typical	Maximum	Units
Switching frequency	Full load	300		KHz
Short circuit protection	Continuous, auto-recovery			
Over current protection	Min 110%Io	160		%Io
Over voltage protection	Min 110%Vo		160	%Vo
Operating temperature	With derating	-40 to +85		°C
Storage temperature		-55 to +125		°C
Cooling	Free air convection			
Humidity	Non-condensing	>5	95	% RH
Maximum soldering temperature	1.5mm from case for 10 sec		+300	°C
Vibration	IEC/EN 61373 Category 1, Class B			
Case material	Aluminum alloy			
Weight		12		g
Dimensions (L x W x H)	1.26 x 0.79 x 0.44 inches (32.0 x 20.0 x 11.1 mm)			
MTBF	> 1 000 000 hrs (MIL-HDBK -217F, t=+25°C) / Full Load			

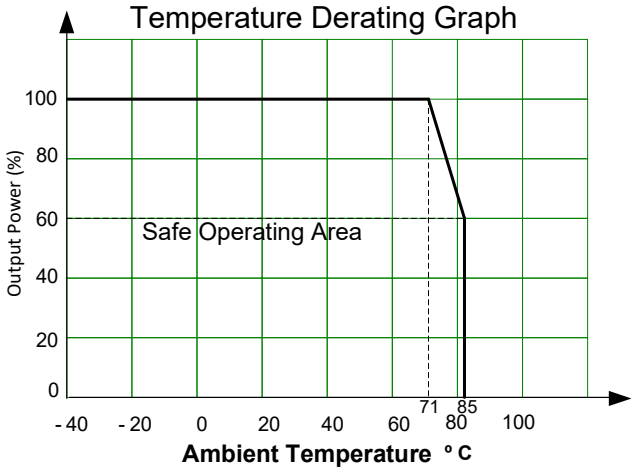
NOTE: All specifications in this datasheet are measured at an ambient temperature of 25°C, humidity<75%, nominal input voltage and at rated output load unless otherwise specified.

Safety Specifications

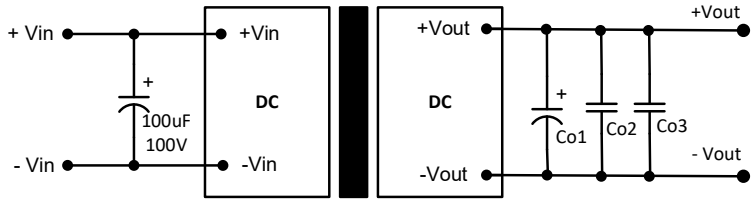
Parameters		
Standards	Designed to meet UL/EN/IEC62368-1	
	EMI - Conducted and radiated emission	CISPR32/EN55032 Class B with recommended EMC circuit
	Electrostatic Discharge Immunity	IEC/EN 61000-4-2, Contact ±4KV, Criteria B
	RF, Electromagnetic Field Immunity	IEC/EN 61000-4-3, 10V/m, Criteria A
	Electrical Fast Transient/Burst Immunity	IEC/EN 61000-4-4, ±2KV, Criteria B with recommended EMC circuit
	Surge Immunity	IEC/EN 61000-4-5, L-L ±2KV, Criteria B with recommended EMC circuit
	RF, Conducted Disturbance Immunity	IEC/EN 61000-4-6, 3Vrms, Criteria A

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Derating



Typical Application Circuit

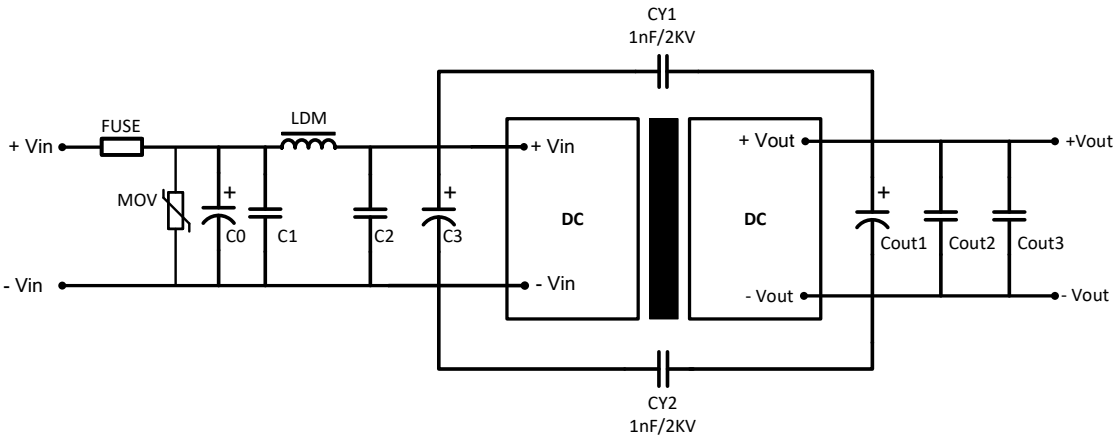


Vout	Co1	Co2	Co3
3.3, 5, 6V	47uF, 16V	10uF, 50V	0.1uF, 16V
9, 12, 15V	47uF, 25V	10uF, 50V	0.1uF, 25V
18, 24, 28V	47uF, 50V	10uF, 50V	0.1uF, 50V

For dual output models, the recommended output values apply to each output.

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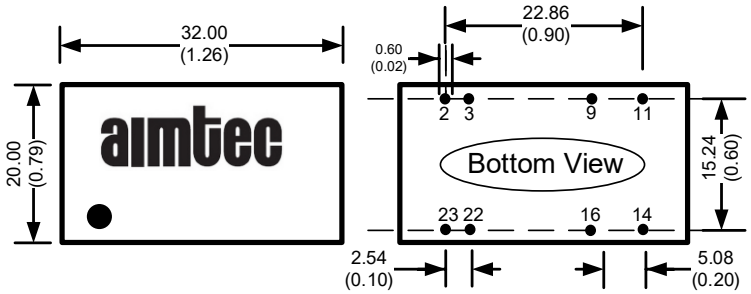
Recommended EMC Circuit

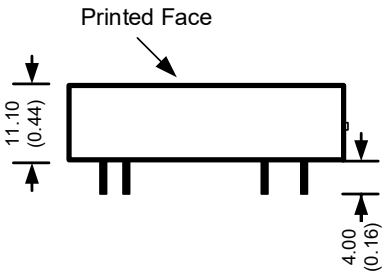


Component	5Vin	12Vin	24Vin	48Vin
MOV	--	14D270K	20D470K	14D101K
C0, C3	680μF, 25V	680μF, 25V	330μF, 50V	330μF, 100V
C1, C2	4.7μF, 50V	4.7μF, 50V	4.7μF, 50V	4.7μF, 100V
Co1, Co2, Co3	Refer to Typical Application Circuit			
LDM	12μH	12μH	12μH	12μH

FUSE：Choose according to actual input current

Dimensions





All dimensions are typical: millimeters (inches)
Pin Pitch Tolerance: ±0.10 (±0.004)
Case Tolerance: ±0.5 (±0.02)

Pin Out Specifications		
Pin	Single output	Dual output
2	-V Input	-V Input
3	-V Input	-V Input
9	No Pin	Common
11	NC	-V Output
14	+V Output	+V Output
16	-V Output	Common
22	+V Input	+V Input
23	+V Input	+V Input

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