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AM3TW-LPZ



DIP24

Aimtec adds the AM3TW-LPZ 3W series to its 24PIN DIP Package DC/DC converters family. With the 3W new single output series, Aimtec provides better coverage of the DIP package products.

The AM3TW-LPZ series provide a wide 4:1 input voltage range and comes standard with single regulated output voltages of 3.3, 5, 9, 12, 15, 24, ± 5 , ± 12 , and ± 15 VDC with I/O isolation of 1500VDC.

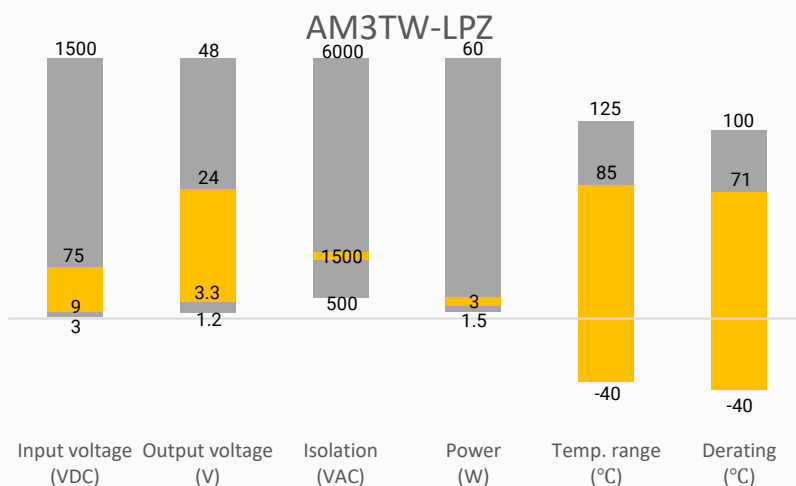
Thanks to its wide -40°C to $+85^{\circ}\text{C}$ operating temperature range, the AM3TW-LPZ is suitable for applications such as industrial control, grid power, instrumentation, and telecommunication. In addition, there are protections for output short circuit, increasing the overall safety of your new system design.

Features

- Wide 4:1 Input Range: 9-36VDC & 18-75VDC
- Operating Temp: -40°C to $+85^{\circ}\text{C}$
- Low ripple & noise, up to 50mV(p-p) typ.
- Efficiency up to 83%
- Output short circuit
- Regulated Output



Summary



Training



Product Training Video
(click to open)



Press Release

Coming Soon!

Application Notes

Applications



Power Grid



Industrial



Telecom



Instrumentation

Models & Specifications

Single Output

Model	Input Voltage (VDC)	Output Voltage (VDC)	Input Current Max (mA)		Output Current Max (mA)	Maximum Capacitive Load (μF)	Efficiency (%) Full Load (Typ.)
			No Load	Full Load			
AM3TW-2403SLPZ	24 (9 ~ 36)	3.3	10	155	909	2700	75
AM3TW-2405SLPZ	24 (9 ~ 36)	5	10	155	600	2200	80
AM3TW-2409SLPZ	24 (9 ~ 36)	9	10	155	333	1000	80
AM3TW-2412SLPZ	24 (9 ~ 36)	12	10	155	250	680	81
AM3TW-2415SLPZ	24 (9 ~ 36)	15	10	155	200	680	82
AM3TW-2424SLPZ	24 (9 ~ 36)	24	10	155	125	470	82
AM3TW-4803SLPZ	48 (18 ~ 75)	3.3	8	77	909	2700	76
AM3TW-4805SLPZ	48 (18 ~ 75)	5	8	77	600	2200	79
AM3TW-4809SLPZ	48 (18 ~ 75)	9	8	77	333	1000	81
AM3TW-4812SLPZ	48 (18 ~ 75)	12	8	77	250	680	82
AM3TW-4815SLPZ	48 (18 ~ 75)	15	8	77	200	680	83
AM3TW-4824SLPZ	48 (18 ~ 75)	24	8	77	125	470	81

Dual Output

Model	Input Voltage (VDC)	Output Voltage (VDC)	Input Current Max (mA)		Output Current Max (mA)	Maximum Capacitive Load (μF)	Efficiency (%) Full Load (Typ.)
			No Load	Full Load			
AM3TW-2405DLPZ	24 (9 ~ 36)	±5	10	155	±300	1000	80
AM3TW-2412DLPZ	24 (9 ~ 36)	±12	10	155	±125	330	81
AM3TW-2415DLPZ	24 (9 ~ 36)	±15	10	155	±100	220	82
AM3TW-4805DLPZ	48 (18 ~ 75)	±5	8	77	±300	1000	80
AM3TW-4812DLPZ	48 (18 ~ 75)	±12	8	77	±125	330	82
AM3TW-4815DLPZ	48 (18 ~ 75)	±15	8	77	±100	220	83

Input Specification

Parameters	Conditions	Typical	Maximum	Units
Voltage range	See models table	4:1		VDC
Reflected Input Ripple Current		30		mA
Absolute maximum rating	24VDC input models, 1 sec. max		-0.7~50	VDC
	48VDC input models, 1 sec. max		-0.7~100	VDC
Start-up voltage	Nominal 24V input models		9	VDC
	Nominal 48V input models		18	VDC

Isolation Specification

Parameters	Conditions	Typical	Maximum	Units
Tested I/O voltage	60 sec, leakage ≤ 1mA	1500		VDC
Resistance	500VDC	≥1000		MΩ
Capacitance	I/O capacitance at 100KHz/0.1V, 1500 & 3000VDC models	120		pF

Output Specification

Parameters	Conditions	Typical	Maximum	Units
Voltage Tolerance	5 ~ 100% load	± 1	± 3	%
	No load	± 1.5	± 5	%
Line Regulation	Full load, main output	± 0.2	± 0.5	%
	Full load, other output	± 0.5	± 1.0	%
Load Regulation	5 ~ 100% load, main output	± 0.5	± 1.0	%
	5 ~ 100% load, other output	± 0.5	± 1.5	%
Short Circuit Protection	Continuous, hiccup, auto-recovery			
Temperature Coefficient	Full load		± 0.03	%/°C
Ripple & Noise	20MHz bandwidth	50	100	mV pk-pk
Transient Recovery Time	25% load step change	500	3000	µS
Transient Response Deviation	25% load step change	± 2	± 5	%

General Specifications

Parameters	Conditions	Typical	Maximum	Units
Switching frequency		250		KHz
Operating temperature	See derating graph	-40 to +85		°C
Storage temperature		-55 to +125		°C
Soldering temperature	1.5mm from case 10 sec max		300	°C
Cooling	Free air convection			
Humidity	Non-condensing		95	% RH
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=+25oC) / 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.

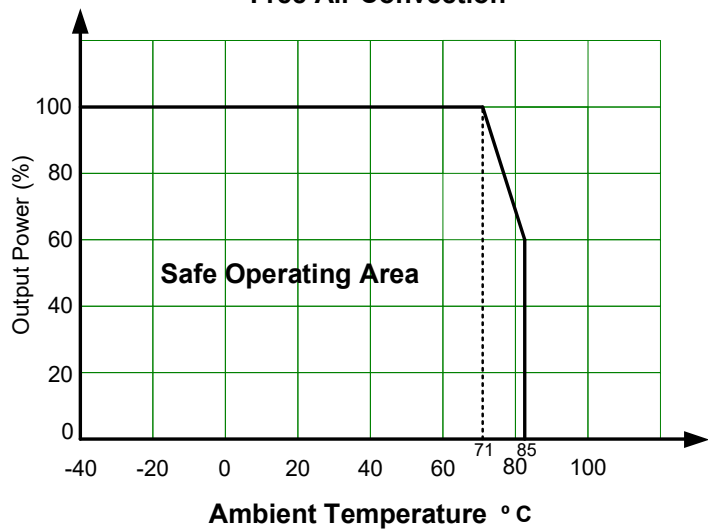
Safety Specifications

Parameters		
Standards	Designed to meet UL/EN/IEC 62368-1	
	EMC - Conducted and radiated emission	CISPR32/EN55032, CLASS B with EMC recommended circuit
	Electrostatic Discharge Immunity	IEC/EN 61000-4-2
	RF, Electromagnetic Field Immunity	IEC/EN 61000-4-3
	Electrical Fast Transient/Burst Immunity	IEC/EN 61000-4-4
	Surge Immunity	IEC/EN 61000-4-5
	RF, Conducted Disturbance Immunity	IEC/EN 61000-4-6

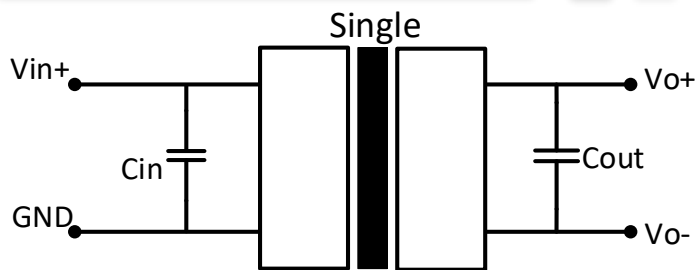
Derating



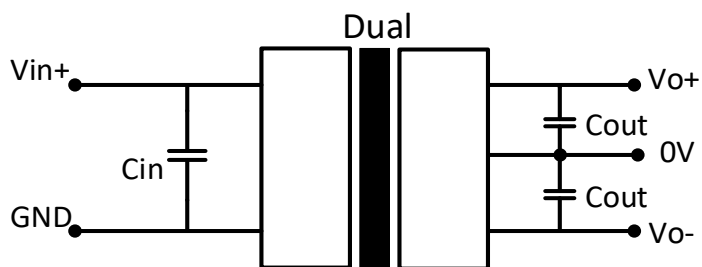
Free Air Convection



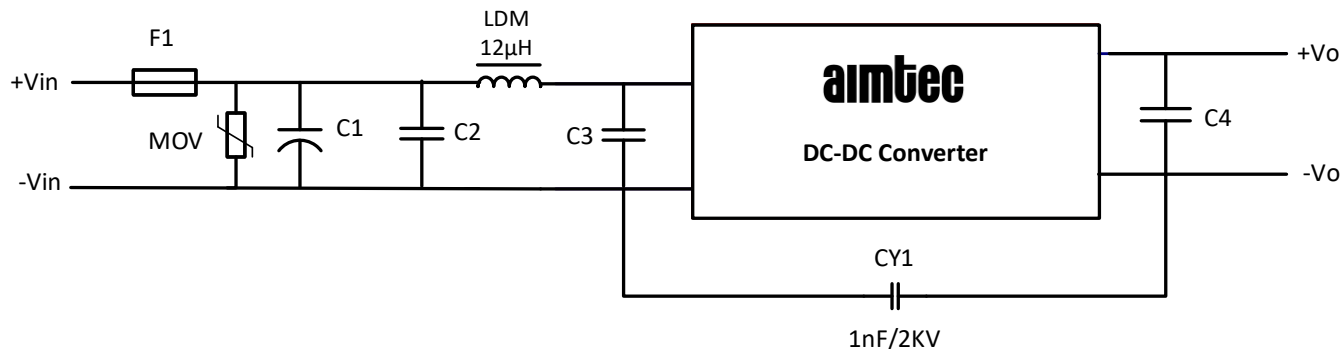
Typical Application Circuit



Input Voltage	24, 48V
Cin	10-47μF/100V
Cout	10μF/50V

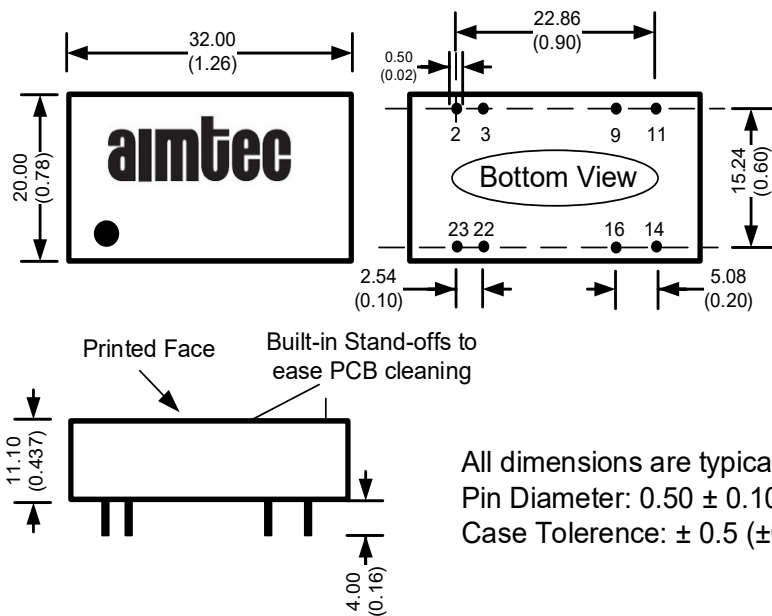


EMC Recommended Circuit



Vin	MOV	C1	C2, C3	C4
24VDC	S20K30	330μF/50V	4.7μF/50V	10μF/50V
48VDC	S14K60	330μF/100V	4.7μF/100V	10μF/50V
Fuse chose according to actual input current				

Dimensions



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

All dimensions are typical: millimeters (inches)
Pin Diameter: 0.50 ± 0.10 (0.02 ± 0.004)
Case Tolerance: ± 0.5 (± 0.02)

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.