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AM10TW-LPZ

Encapsulated

The AM10TW-LPZ is a 10W DC/DC converter that offers a regulated output which contributes to a more stable and reliable output performance. It features a wide 4:1 input voltage range of 9-75VDC, which will benefit your new system design.

This series offers great operating temperatures, from -40°C to 85°C. Furthermore, an isolation of 1500VDC, a high MTBF of 1,000,000h, continuous output short circuit protection (OSCP), over-current protection (OCP), over-voltage protection (OVP), and under voltage lock-out (UVLO) come standard with the series.

The AM10TW-LPZ is suitable for distributed power supply systems, industrial controls, power grid, instruments and communications applications.

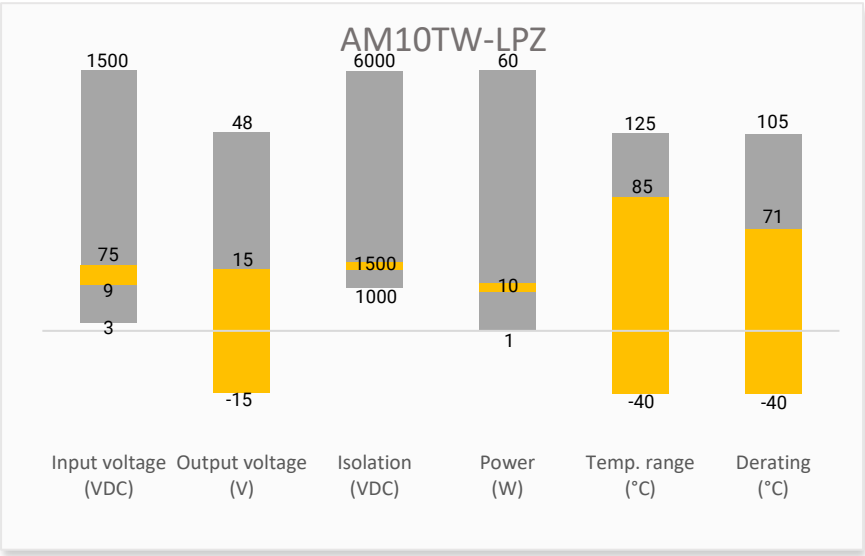
Features

- Operating Temp: -40 °C to +85 °C
- High isolation voltage: 1500VDC
- Low ripple & noise, 40mV (p-p), typ.
- Regulated Output
- Output short circuit, over-current, over-voltage, input under voltage protection

RoHS

3yr Warranty

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 (mA TYP.)		Output Current Max (mA)	Maximum Capacitive Load (µF)	Efficiency Full Load Typ. (%)
			No Load	Full Load			
AM10TW-2403SLPZ	24 (9-36)	3.3	12	380	2400	1200	86
AM10TW-2405SLPZ	24 (9-36)	5	6	474	2000	1000	87
AM10TW-2412SLPZ	24 (9-36)	12	5	502	833	470	87
AM10TW-2415SLPZ	24 (9-36)	15	5	502	667	330	87
AM10TW-2424SLPZ	24 (9-36)	24	5	502	416	100	88
AM10TW-4803SLPZ	48 (18-75)	3.3	5	192	2400	1200	85
AM10TW-4805SLPZ	48 (18-75)	5	6	240	2000	1000	86
AM10TW-4812SLPZ	48 (18-75)	12	4	251	833	470	87
AM10TW-4815SLPZ	48 (18-75)	15	4	251	667	330	87
AM10TW-4824SLPZ	48 (18-75)	24	4	251	416	100	88

Dual Output

Model	Input Voltage (VDC)	Output Voltage (VDC)	Input Current Max (mA TYP.)		Output Current Max (mA)	Maximum Capacitive Load (µF)	Efficiency (%) Full Load Typ.
			No Load	Full Load			
AM10TW-2405DLPZ	24 (9-36)	±5	6	474	±1000	1000	83
AM10TW-2412DLPZ	24 (9-36)	±12	6	502	±416	470	87
AM10TW-2415DLPZ	24 (9-36)	±15	6	502	±333	330	87
AM10TW-4805DLPZ	48 (18-75)	±5	6	240	±1000	1000	83
AM10TW-4812DLPZ	48 (18-75)	±12	6	251	±416	470	87
AM10TW-4815DLPZ	48 (18-75)	±15	6	251	±333	330	87

Input Specification

Parameters	Conditions	Typical	Maximum	Units
Voltage Types			4:1	
Filter	Capacitor			
Startup input voltage	24Vin models		9	VDC
	48Vin models		18	VDC
Input under-voltage lockout	24Vin models	≥5.5	6.5	VDC
	48Vin models	≥12	15.5	VDC
Absolute maximum rating	24Vin models, 1 sec.	≥-0.7	50	VDC
	48Vin models, 1 sec.	≥-0.7	100	VDC
Input reflected current		30		mA
On/Off control	ON - open or pulled high (3.5- 12 VDC) OFF - pulled low to GND (0 – 0.7 VDC), idle current 10mA max.			

Isolation Specification

Parameters	Conditions	Typical	Maximum	Units
Tested isolation voltage	Input / output 60 sec, ≤ 1mA	1500		VDC
Resistance	500VDC	≥1000		MΩ
Capacitance	Input to output, 100KHz/0.1V	2000		pF

Output Specification

Parameters	Conditions	Typical	Maximum	Units
Voltage Tolerance	Full load @Vin (nom.)	±1	±3	%
Output voltage balance	Dual output with balanced load	±0.5	±1.5	%
Line regulation	Positive output, Full load	±0.2	±0.5	%
	Negative output, Full load	±0.5	±1	%
Load regulation	Positive output, 5~100% load	±0.5	±1	%
	Negative output, 5~100% load	±0.5	±1.5	%
Transient recovery time	25% load step change	300	500	µs
Transient recovery deviation	25% load step change, 3.3/5/±5Vout models	±5	±8	%
	25% load step change, others	±3	±5	%
Ripple & Noise	20MHz bandwidth	40	85	mV pk-pk

General Specifications

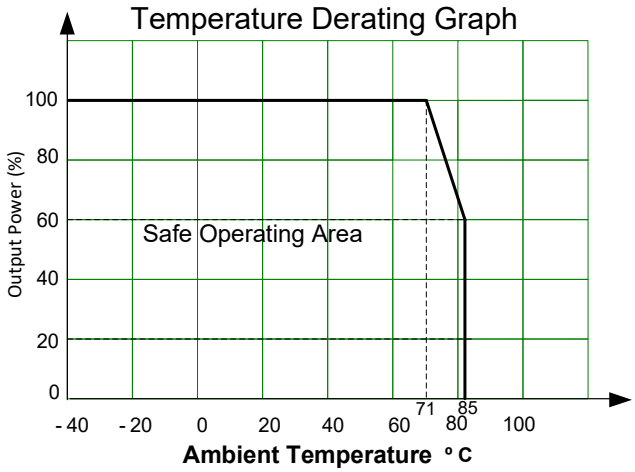
Parameters	Conditions	Minimum	Typical	Maximum	Units
Switching frequency	100% load		300		KHz
Over Current protection	Input voltage range	110	140		%Io
Over voltage protection	Output voltage range	110		160	%Vo
Short Circuit Protection	Continuous, Auto recovery				
Operating temperature	With derating	-40		85	°C
Storage temperature		-55		125	°C
Temperature coefficient	100% Load			± 0.03	%/ °C
Cooling	Free air convection				
Humidity	Non-condensing	5		95	% RH
Maximum soldering temperature	1.5mm from case for 10 sec			+300	°C
Case material	Aluminum alloy				
Weight			14		g
Dimensions (L x W x H)	1.26 x 0.79 x 0.44 inches (32.00 × 20.00 × 11.10 mm)				
MTBF	> 1 000 000 hrs (MIL-HDBK -217F, 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

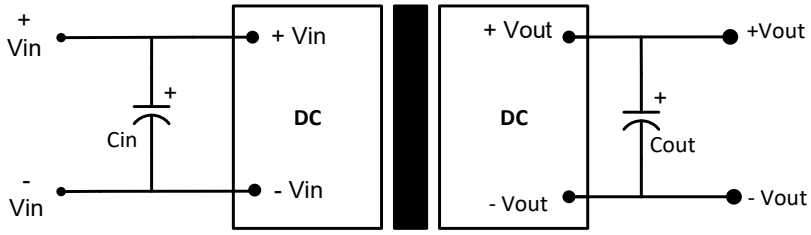
Parameters		
Standards	Designed to meet UL/EN/IEC62368-1	
	EMI - Conducted and radiated emission	CISPR32/EN55032, Class B (with the recommended EMC circuit part B)
	Electrostatic Discharge Immunity	IEC/EN 61000-4-2, Contact ±4KV, Criteria B
	RF, Electromagnetic Field Immunity	IEC/EN 61000-4-3, 10V/m, Criteria A
	Electrical Fast Transient/Burst Immunity	IEC/EN 61000-4-4, ±2KV, Criteria B (with the recommended EMC circuit part A)
	Surge Immunity	IEC/EN 61000-4-5, ±2KV, Criteria B (with the recommended EMC circuit part A)
	RF, Conducted Disturbance Immunity	IEC/EN 61000-4-6, 10Vrms, Criteria A
	Vibration	IEC/EN61373, category 1/grade B

Derating



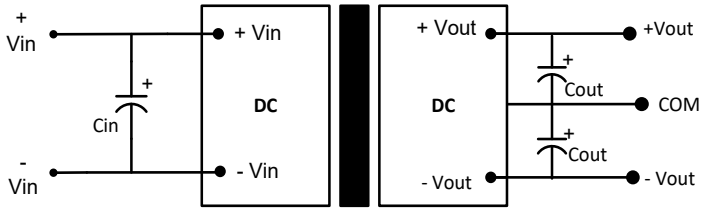
Typical Application Circuit

Single output models



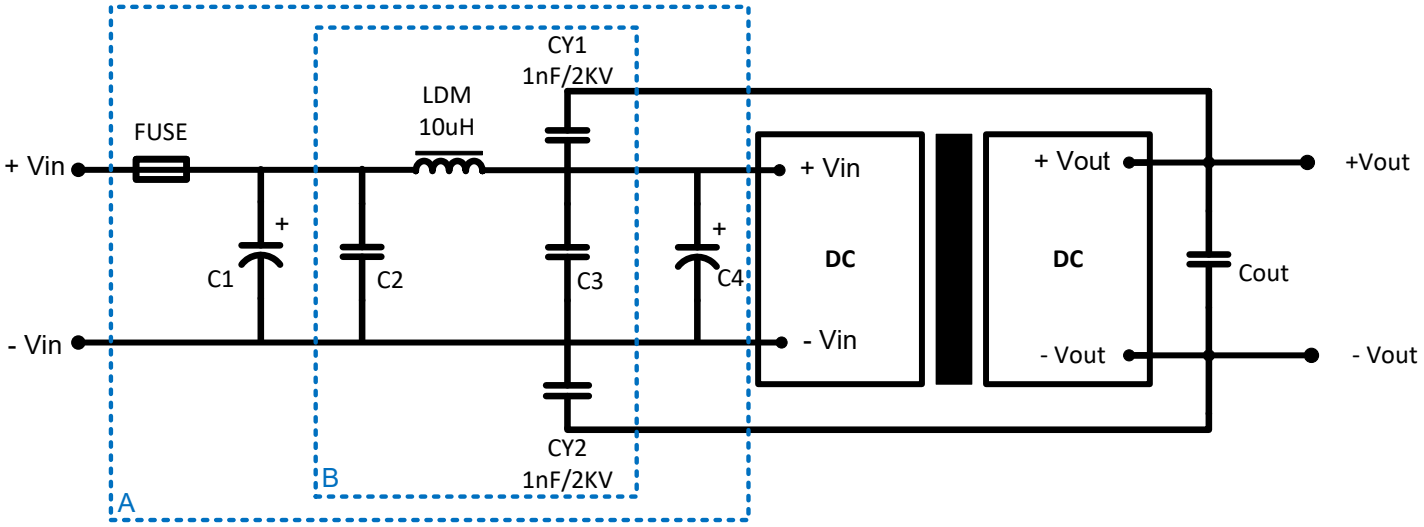
Single Output Models			
Vin	Cin	Vout	Cout
24VDC	100µF/50V	3.3VDC	10µF/50V
48VDC	10-47µF/100V	5VDC	
		12VDC	
		15VDC	
		24VDC	

Dual output models



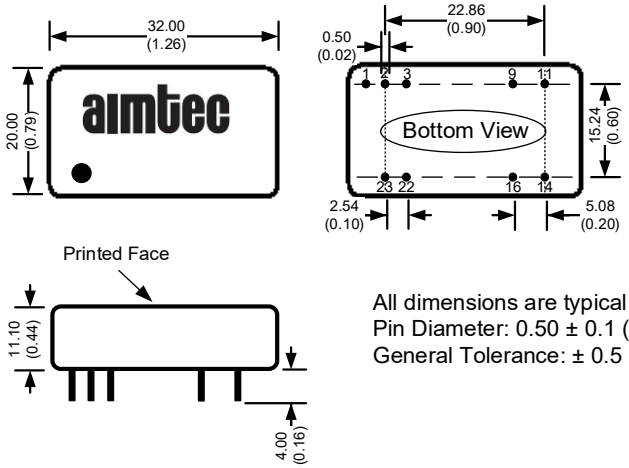
Dual Output Models			
Vin	Cin	Vout	Cout
24VDC	100µF/50V	±5VDC	10µF/50V
48VDC	10-47µF/100V	±12VDC	
		±15VDC	

EMC Application Circuit



Model	24Vin	48Vin
C1/C4	330µF/50V	330µF/100V
C2/C3	10µF/50V	10µF/100V
Cout	Refer to typical application circuit	
Fuse	Chose based on actual current	

Dimensions



All dimensions are typical: millimeters (inches)
Pin Diameter: 0.50 ± 0.1 (0.02 ± 0.004)
General Tolerance: ± 0.5 (±0.02)

Pin Out Specifications		
Pin	Single	Dual
1	Remote On/Off	Remote On/Off
2	-V Input	-V Input
3	-V Input	-V Input
9	No Pin	Common
11	N.C.	-V Output
14	+V Output	+V Output
16	-V Output	Common
22	+V Input	+V Input
23	+V Input	+V Input