



**THE DATASHEET OF
AM10TW-2405S-NZ**





FEATURES:

- Ultra-Wide 4:1 input range
- Efficiency up to 88%
- Low power consumption 0.12W
- Continuous short circuit protection
- Meet EN55032 Class A with no external component needed
- Design to meet EN62368 and EN50155
- Operating temperature -40°C to + 85°C
- Remote on/off control
- Input/Output Isolation 1500VDC
- Over voltage & over current protection

Models Single output



Model	Input Voltage (V)	Output Voltage (Vdc)	Output Current max (mA)	Isolation (VDC)	Max Capacitive Load (uF)	Efficiency (%)
AM10TW-2403S-NZ	9-36	3.3	2400	1500	1200	87
AM10TW-2405S-NZ	9-36	5	2000	1500	1000	88
AM10TW-2412S-NZ	9-36	12	833	1500	470	87
AM10TW-2415S-NZ	9-36	15	667	1500	330	87
AM10TW-2424S-NZ	9-36	24	416	1500	100	88
AM10TW-4803S-NZ	18-75	3.3	2400	1500	1200	86
AM10TW-4805S-NZ	18-75	5	2000	1500	1000	87
AM10TW-4812S-NZ	18-75	12	833	1500	470	87
AM10TW-4815S-NZ	18-75	15	667	1500	330	87
AM10TW-4824S-NZ	18-75	24	416	1500	100	88

Models Dual output

Model	Input Voltage (V)	Output Voltage (V)	Output Current max (mA)	Isolation (VDC)	Max Capacitive Load(uF)	Efficiency (%)
AM10TW-2405D-NZ	9-36	±5	±1000	1500	±1000	83
AM10TW-2412D-NZ	9-36	±12	±416	1500	±470	87
AM10TW-2415D-NZ	9-36	±15	±330	1500	±330	87
AM10TW-4805D-NZ	18-75	±5	±1000	1500	±1000	83
AM10TW-4812D-NZ	18-75	±12	±416	1500	±470	87
AM10TW-4815D-NZ	18-75	±15	±330	1500	±330	87

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	24V input models	9-36	40	VDC	
	48V input models	18-75	80		
Input Current (full load/no load)	24V, nominal input voltage	3.3V model	379/12	388/25	mA
		5V model	473/6	484/15	
		Others	502/5	515/12	
	48V, nominal input voltage	3.3V model	192/5	197/20	
		5V model	239/6	245/15	
		Others	251/4	258/8	
Input Reflected Ripple Current	24V nominal input voltage	40		mA	
	48V nominal input voltage	30			
Filter	π (Pi) Network				
Absolute Maximum Rating	24V input models, 1s max	-0.7-50		VDC	
	48V input models, 1s max	-0.7-100			
Peak Input Voltage time			1000	ms	
Input Under voltage turn off	24V input models	6.5		VDC	
	48V input models	15.5			
On/Off control	ON – High (3.5 ... 12Vdc) or open circuit; OFF – Low (0 ... 1.2Vdc) or Short circuit pin1 and pin 2/3 OFF idle current: 6.0 mA typical				

Isolation Specifications

Parameters	Conditions	Typical	Rated	Units
Tested I/O voltage	60 sec, <1mA		1500	VDC
Resistance	500VDC	>1000		MOhm
Capacitance	100KHz/0.1V	2000		pF

Output Specifications

Parameters	Conditions	Typical	Maximum	Units	
Voltage accuracy *	0%-100% load	3.3V/5V single output	±0.5	±2	%
		Others	±1	±3	
Cross regulation (Dual Output)	50% load on one output, 25%~100% load on second		±5	%	
Over voltage protection	Full input range		110~160	% of Vout	
Short circuit protection	Continuous, Auto recovery				
Over current protection	Full input range	3.3V/5V single output	110~230	% of Iout	
		Others	110~190		
Line voltage regulation	LL-HL, Full load	Positive output	±0.2	±0.5	%
		Negative output	±0.5	±1	
Load voltage regulation	5% Load to Full Load	Positive output	±0.5	±1	%
		Negative output	±0.5	±1.5	
Temperature coefficient	Full load		±0.03	%/°C	
Transient recovery time	25% load step change, 110Vin, 2250V Isolation	0.3	0.5	mS	
Transient recovery deviation	25% load step change	3.3V/5V single output	±5	±8	%
		Others	±3	±5	
Ripple & Noise **	20MHz Bandwidth	40	80	mV p-p	

* Voltage accuracy for models with 3.3V and 5V single output at 0%-5% load is ±3%. Voltage accuracy for ±5V dual output model at 0%-5% load is ±5%.

** Ripple and Noise at 0%-5% load ≤5% Vout. Please refer to the application note for specific details.

General Specifications

Parameters	Conditions	Typical	Maximum	Units
Switching frequency	100% load	350		KHz
Operating temperature	Full Load with derating above 65°C	-40 to +85		°C
Storage temperature		-55 to +125		°C
Maximum case temperature			105	°C
Cooling	Free air convection			
Humidity			95	% RH
Case material	Aluminum alloy			
Weight		12		g
Dimensions (L x W x H)	1.26 x 0.79 x 0.43 inches 32.00 x 20.00 x 10.8 mm			
MTBF	>1 000 000 hrs (MIL-HDBK -217F, Ground Benign, t=+25°C)			
Manual soldering temperature	1.5mm from case for 10 sec		300	°C

Environment Specifications

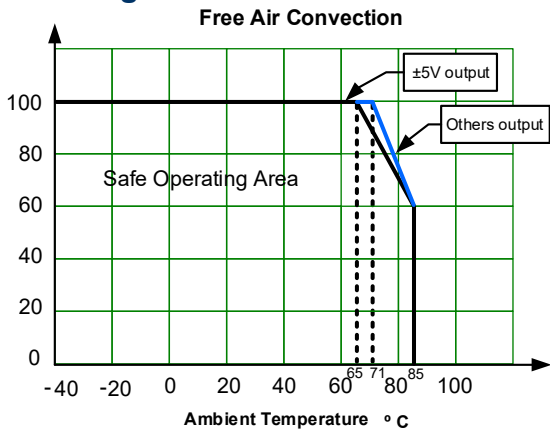
Test	Parameters	Conditions
Vibration	EN50155	IEC/EN 61373 Category 1, class B
	EN62368	10-150Hz, 5g, every axis tested

Safety Specifications

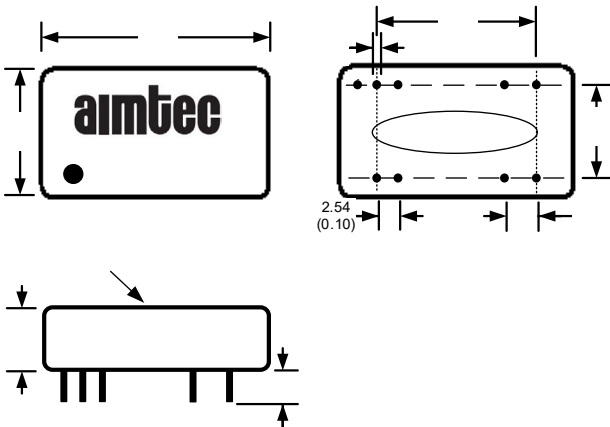
Parameters		
Agency approvals	CE	
Standards	EMI - Conducted and radiated emission	CISPR32 / EN55032 Class A, without external circuit CISPR32 / EN55032 Class B, with the EMC recommended circuit part B EN50121-3-2, with the EMC recommended circuit part B EN55016-2-1, with the EMC recommended circuit part B
	Electrostatic Discharge Immunity	IEC61000-4-2, Contact ±4kV, Criteria B EN50121-3-2, Contact ±6kV/ Air ±8kV, Criteria B
	RF, Electromagnetic Field Immunity	IEC61000-4-3, 10V/m, Criteria A EN50121-3-2, 20V/m, Criteria A

Electrical Fast Transient/ Burst Immunity	IEC61000-4-4, $\pm 2\text{kV}$ with the EMC recommended circuit part A, Criteria B EN50121-3-2, $\pm 2\text{kV}$ with the EMC recommended circuit part A, Criteria A
Surge Immunity	IEC61000-4-5, L-L $\pm 2\text{kV}$ with the EMC recommended circuit part A, Criteria B EN50121-3-2, L-L $\pm 1\text{kV}$ with the EMC recommended circuit part A, Criteria A
RF, Conducted Disturbance Immunity	IEC61000-4-6, 10Vrms, Criteria A EN50121-3-2, 10Vrms, Criteria A
Voltage dips, short interruptions, and voltage variations immunity	IEC61000-4-29, 0%-70%, Criteria B

Derating



Dimensions

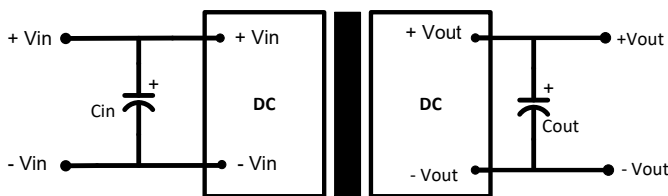


Pin Out Specifications

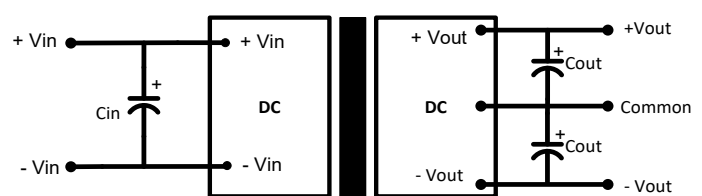
Pin	Single	Dual
1	Remote On/Off	Remote On/Off
2	-V Input	-V Input
3	-V Input	-V Input
9	No Pin	Common
11	N.C.	-V Output
14	+V Output	+V Output
16	-V Output	Common
22	+V Input	+V Input
23	+V Input	+V Input

Typical application circuit

Single output models



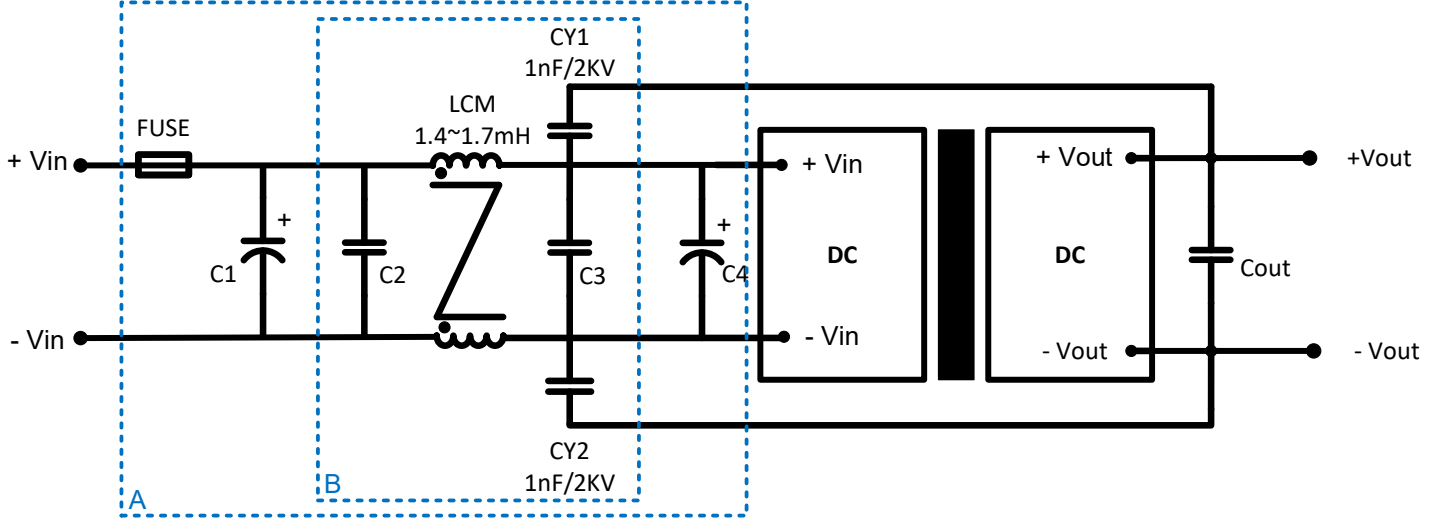
Dual output models



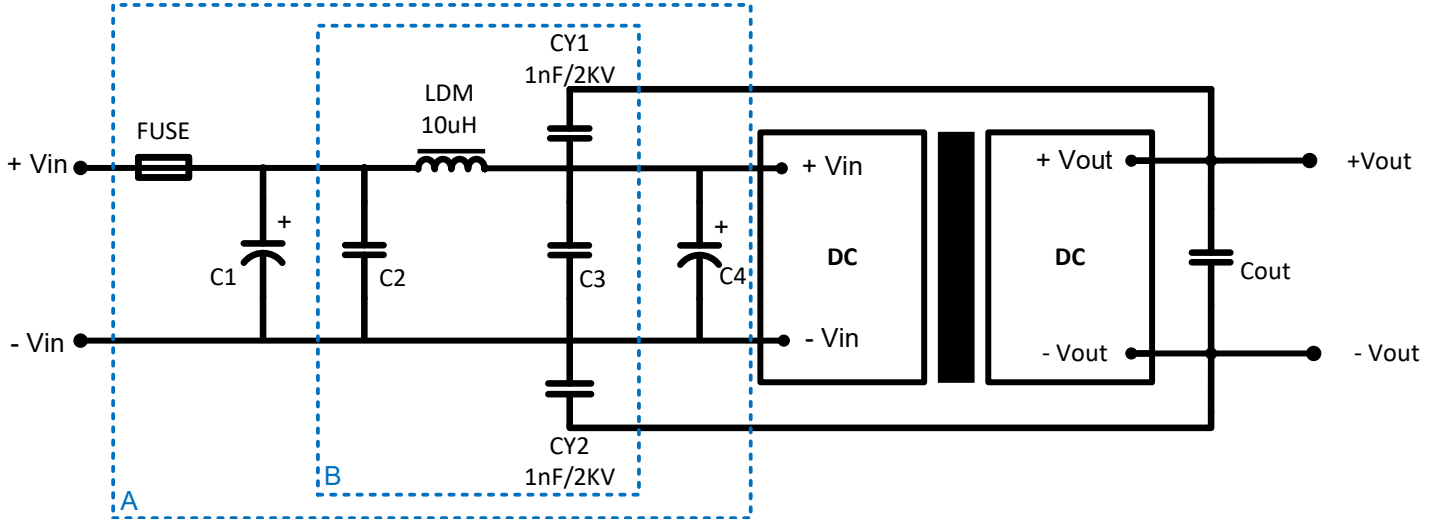
Vin	Cin	Cout
24V	100 μF	10 μF
48V	10-47 μF	10 μF

EMC Recommended Circuit

For 3.3V/5V single output models



For other models



Part A for EMS. Part B for EMI.

Model	24V	48V
FUSE	Choose based on actual current	
C1, C4	330µF/50V	330µF/100V
C2, C3	10µF/50V	10µF/100V

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