

Series AM12TW-Z

12 Watt | DC-DC Converter



FEATURES:

- Ultra-Wide Input Range 4:1
- 1600 VDC Isolation
- Efficiency up to 90%
- Soft Start
- Remote On/Off Function
- No Minimum Load Required
- -40°C to +85°C Operating Temperature Range
- Short Circuit & Over Voltage Protection
- Over Load Protection
- Low No Load Input Current

Models

Single output



Model	Input Voltage (V)	Output Voltage (V)	Output Current max (A)	Isolation (VDC)	Maximum Capacitive load (μF)	Efficiency (%)
AM12TW-2403SZ	9-36	3.3	3.5	1600	2000	87
AM12TW-2405SZ	9-36	5.1	2.4	1600	2000	89
AM12TW-2412SZ	9-36	12	1	1600	430	90
AM12TW-2415SZ	9-36	15	0.8	1600	300	90
AM12TW-4803SZ	18-75	3.3	3.5	1600	2000	87
AM12TW-4805SZ	18-75	5.1	2.4	1600	2000	89
AM12TW-4812SZ	18-75	12	1	1600	430	90
AM12TW-4815SZ	18-75	15	0.8	1600	300	90

Models

Dual output

Model	Input Voltage (V)	Output Voltage (V)	Output Current max (A)	Isolation (VDC)	Maximum Capacitive load (μF)	Efficiency (%)
AM12TW-2405DZ	9-36	±5	±1.2	1600	±1250	87
AM12TW-2412DZ	9-36	±12	±0.5	1600	±200	90
AM12TW-2415DZ	9-36	±15	±0.4	1600	±120	90
AM12TW-4805DZ	18-75	±5	±1.2	1600	±1250	87
AM12TW-4812DZ	18-75	±12	±0.5	1600	±200	90
AM12TW-4815DZ	18-75	±15	±0.4	1600	±120	90

Input Specifications

Parameters	Nominal	Typical	Maximum	Units
Voltage range	24 48	9-36 18-75		VDC
Filter	π (Pi) Network			
Startup time	Nominal Vin and constant resistive load	20		ms
Absolute Maximum Rating	24 Vin models 48 Vin models	-0.7-50 -0.7-100		VDC
Peak Input Voltage time			1	s
Input reflected ripple current			20	mA p-p
Quiescent Current		15		mA
On/Off Control	ON – High (3.0 ... 12Vdc) or open circuit; OFF – Low (0 ... 1.2Vdc) or Short circuit pin1 and pin 2/3 OFF idle current: 5.0 mA typ			

Isolation Specifications

Parameters	Conditions	Typical	Rated	Units
Tested I/O voltage	60 sec		1600	VDC
Tested Case/Input and Output	60 sec		1600	VDC
Resistance		>1000		MOhm
Capacitance		1500		pF

Output Specifications

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy		±1.2		%
Cross regulation (Dual output)	25% load on one output, 100% load on second	±5		%
Line voltage regulation	HL-LL		±0.2	%
Load voltage regulation (Single)	0% Load to Full Load		±0.5	%
Load voltage regulation (Dual)	0% Load to Full Load		±1.0	%
Over voltage protection	Zener diode clamp			
Over load protection		170		% of FL
Short Circuit protection	Continuous, hiccup, auto recovery			
Temperature coefficient		±0.02		%/°C
Ripple & Noise *			85	m Vp-p
Transient recovery time	25% load step (75-50-25% of Iout)	250		µs
Transient response deviation	25% load step (75-50-25% of Iout)		±3	%

* Measured with 1µF CC.

General Specifications

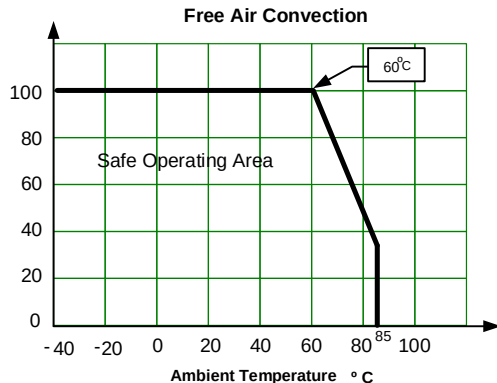
Parameters	Conditions	Typical	Maximum	Units
Switching frequency	100% load	270		KHz
Operating temperature	With derating above 60°C	-40 to +85		°C
Storage temperature		-55 to +125		°C
Max Case temperature			105	°C
Derating	Above 60°C	2.5 % per 1°C		
Cooling	Free air convection			
Humidity			95	% RH
Case material	Nickel-coated Copper			
Weight		18.0		g
Dimensions (L x W x H)	Tolerance ±0.5 mm or ±0.02 inches	1.25 x 0.8 x 0.40 inches	31.75 x 20.32 x 10.16 mm	
MTBF	>1 000 000 hrs (MIL-HDBK -217F, Ground Benign, 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	
Agency Approval	CE, UL
Standards	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 330uF/100V cap required)
	IEC61000-4-5, Perf. Criteria A (external 330uF/100V cap required)
	IEC61000-4-6, Perf. Criteria A (external 330uF/100V cap required)
	IEC61000-4-8, Perf. Criteria A
IEC/EN/UL 60950-1:2001 & IEC/EN/UL 62368-1	

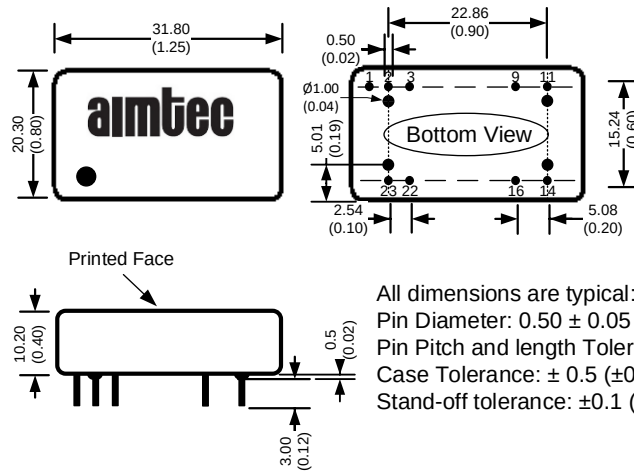
Derating



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

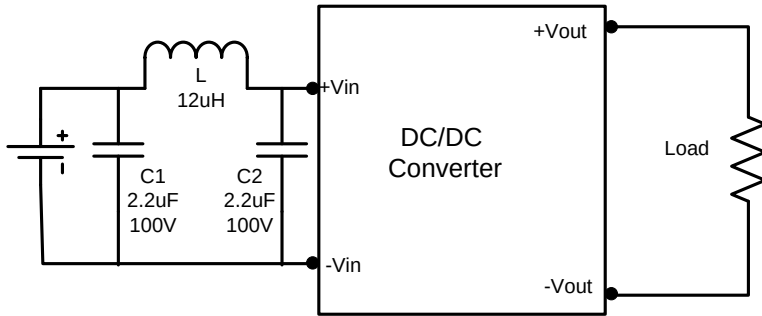
Dimensions



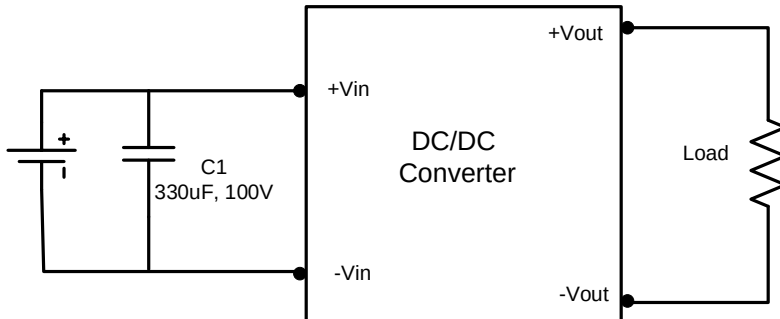
All dimensions are typical: millimeters (inches)
 Pin Diameter: 0.50 ± 0.05 (0.02 ± 0.002)
 Pin Pitch and length Tolerance: ± 0.35 (± 0.014)
 Case Tolerance: ± 0.5 (± 0.02)
 Stand-off tolerance: ± 0.1 (± 0.004)

Test Circuits

Conducted Emissions :



Surge/EFT/CS:



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