

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
- DIP 24 Package
- Low No Load Input Current

Models Single output



Model	Input Voltage (V)	Output Voltage (V)	Output Current max (mA)	Isolation (VDC)	Maximum Capacitive load (μF)	Efficiency (%)
AM12TW-2403SZ	9-36	3.3	3500	1600	2000	87
AM12TW-2405SZ	9-36	5.1	2400	1600	2000	89
AM12TW-2412SZ	9-36	12	1000	1600	430	90
AM12TW-2415SZ	9-36	15	800	1600	300	90
AM12TW-4803SZ	18-75	3.3	3500	1600	2000	87
AM12TW-4805SZ	18-75	5.1	2400	1600	2000	89
AM12TW-4812SZ	18-75	12	1000	1600	430	90
AM12TW-4815SZ	18-75	15	800	1600	300	90

Models Dual output

Model	Input Voltage (V)	Output Voltage (V)	Output Current max (mA)	Isolation (VDC)	Maximum Capacitive load (μF)	Efficiency (%)
AM12TW-2405DZ	9-36	±5	±1200	1600	±1250	87
AM12TW-2412DZ	9-36	±12	±500	1600	±200	90
AM12TW-2415DZ	9-36	±15	±400	1600	±120	90
AM12TW-4805DZ	18-75	±5	±1200	1600	±1250	87
AM12TW-4812DZ	18-75	±12	±500	1600	±200	90
AM12TW-4815DZ	18-75	±15	±400	1600	±120	90

Input Specifications

Parameters	Nominal	Typical	Maximum	Units
Voltage range	24 48	9-36 18-75		VDC
Filter	π (Pi) Network			
Turn on Transient process time		250		μs
Transient response deviation			±3	%
Start up 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			1000	ms
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		1600		VDC
Resistance		>1000		MOhm
Capacitance		1500		pF

Output Specifications

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy		±1.2		%
Voltage balance*	Dual output	±5		%
Line voltage regulation	HL-LL		±0.2	%
Load voltage regulation	0% Load to Full Load , single output models 0% Load to Full Load , Dual output models		±0.5 ±1.0	%
Over voltage protection	Zener diode clamp			
Over current protection	Full Load	170		%
Short Circuit protection	Continuous			
Short circuit restart	Auto recovery			
Temperature coefficient		±0.02		%/°C
Ripple & Noise**			85	m Vp-p

* One of the outputs is at 100% load while the other output is at 25% to 100% load.

** Measured at 20MHz bandwidth with a 1uF ceramic capacitor.

General Specifications

Parameters	Conditions	Typical	Maximum	Units
Switching frequency	100% load	270		KHz
Operating temperature	Full Load with derating above 60°C	-40 to +85		°C
Storage temperature		-40 to +125		°C
Max Case temperature			105	°C
Derating	Above 60°C	2.5		%/°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 0.80 x 0.40 inches mm	31.80 x 20.30 x 10.20 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

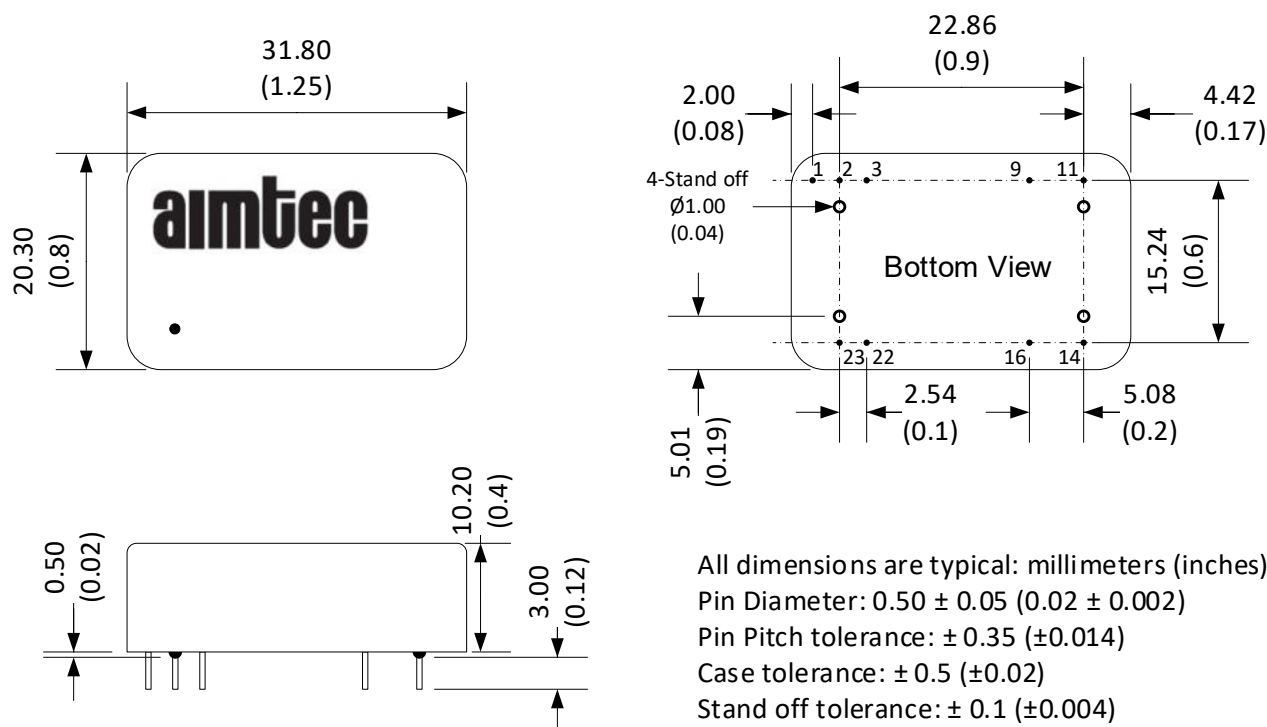
Safety Specifications

Parameters	
Agency Approval	UL
Standards	UL62368-1
	EN55032 Class A, with the recommended EMI circuit
	IEC61000-4-2, Perf. Criteria B
	IEC61000-4-3, Perf. Criteria A
	IEC61000-4-4, Perf. Criteria B (external 330uF/100V cap required)
	IEC61000-4-5, Perf. Criteria B (external 330uF/100V cap required)
	IEC61000-4-6, Perf. Criteria A
	IEC61000-4-8, Perf. Criteria A
	Note: also meets IEC 60950-1:2001

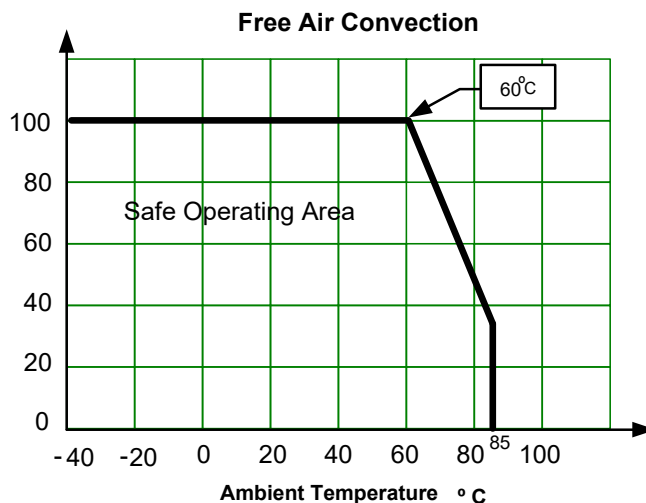
Pin Out Specifications

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

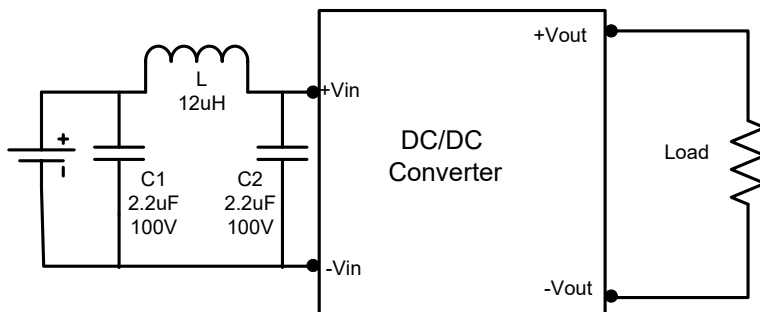


Derating

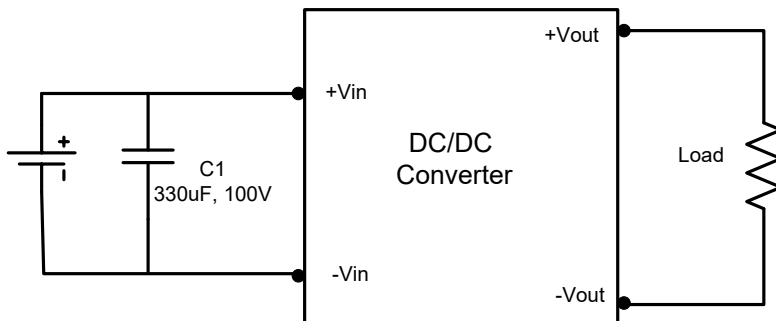


Test Circuits

Conducted Emissions :



Surge:



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