aimtec
Your Power Partner

Series AM30CW-Z

30 Watt | DC-DC Converter



FEATURES:

- Ultra-compact footprint 1”x1”
- Ultra-wide Input Range 4:1
- 1600 VDC Isolation
- Remote ON/OFF Function
- Input Under Voltage lockout
- Continuous Short circuit protection
- Adjustable Output Voltage
- Operating Temperature -40ºC to +85ºC
- Over Current and Over Voltage Protection
- Efficiency up to 92%
- Over Temperature Protection
- Soft Start

Models:
Single output

Model	Input Voltage (V)	Output Voltage (V)	Output Current max (A)	Isolation (VDC)	Max Capacitive Load (uF)	Efficiency (%)
AM30CW-2403SZ	9-36	3.3	7	1600	10,000	88
AM30CW-2405SZ	9-36	5	6	1600	7200	89
AM30CW-2412SZ	9-36	12	2.5	1600	1200	89
AM30CW-2415SZ	9-36	15	2	1600	1000	91
AM30CW-4803SZ	18-75	3.3	7	1600	10,000	89
AM30CW-4805SZ	18-75	5	6	1600	7200	90
AM30CW-4812SZ	18-75	12	2.5	1600	1200	90
AM30CW-4815SZ	18-75	15	2	1600	1000	92

Models:
Dual output

Model	Input Voltage (V)	Output Voltage (V)	Output Current max (A)	Isolation (VDC)	Max Capacitive Load (uF)	Efficiency (%)
AM30CW-2412DZ	9-36	±12	±1.25	1600	±750	89
AM30CW-2415DZ	9-36	±15	±1	1600	±500	91
AM30CW-4812DZ	18-75	±12	±1.25	1600	±750	90
AM30CW-4815DZ	18-75	±15	±1	1600	±500	91

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	24	9-36		VDC
	48	18-75		
Filter		π		
Start up time	Nominal Vin with constant resistive load	30		ms
Absolute Maximum Rating	24 Vin		50	VDC
	48 Vin		100	
Peak Input Voltage time			100	ms
On/Off control	ON – 3 to 12VDC (or open)			
	OFF – 0 to 1.2VDC or short pin 2 to pin 3; OFF idle current – 2mA			
No load current			10	mA
Under Voltage Lockout	24 Vin ON/OFF	8.6/7.6		VDC
	48 Vin ON/OFF	17.5/16.5		
Input reflected ripple current		30		mA p-p

Isolation Specifications

Parameters	Conditions	Typical	Rated	Units
Tested I/O voltage	1 min		1600	VDC
Case to Input/Output	1 min		1600	VDC
Resistance		>1000		VDC
Capacitance			2000	pF

Output Specifications

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy		±1		%
Cross Regulation (Dual Output Models)	25% load on one output - 100% load on second load	±5		%
Over voltage protection	Zener Diode Clamp	120		%
Over current protection	Full Load	170		%
Short Circuit protection	Hiccup, Auto-Recovery	Continuous		
Over temperature protection	Case temperature		115	°C
Line voltage regulation	HL-LL	±0.5		%
Load voltage regulation (Single)	0% to 100% load	±0.5		%
Load voltage regulation (Dual)	0% to 100% balanced load	±1		%
Temperature coefficient		±0.02		%/°C
Ripple & Noise*	20MHz Bandwidth, full load	75		mV p-p
Voltage adjustment range	Trim - Single output models only	±10		%
Transient recovery time	25% load step change	250		µs
Transient recovery deviation	25% load step change, 3.3V output		±5	%
	25% load step change, Others		±3	

*Measured with 1µF/25V MLCC on each output.

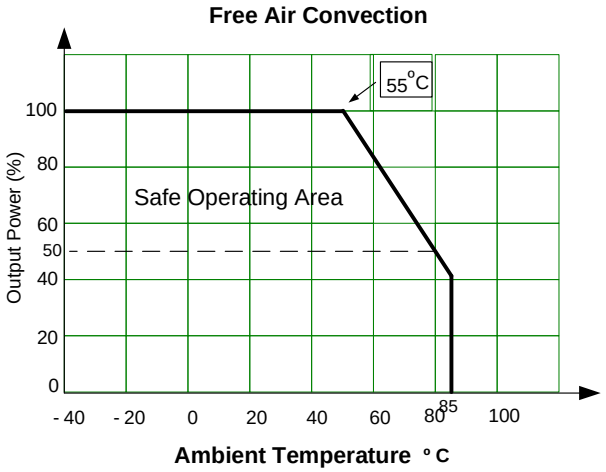
General Specifications

Parameters	Conditions	Typical	Maximum	Units
Switching frequency	100% load, 3.3V & 5V output	270		KHz
	100% load, others	330		
Operating temperature	With derating above +55°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	Copper			
Weight	19			g
Dimensions (L x W x H)	1.00 x 1.00 x 0.41 inches 25.40 x 25.40 x 10.40 mm			
MTBF	> 370,000 hrs (MIL-HDBK -217F, Ground Benign, t=+25°C)			
Maximum soldering temperature	1.5mm from case for 10 sec		260	°C

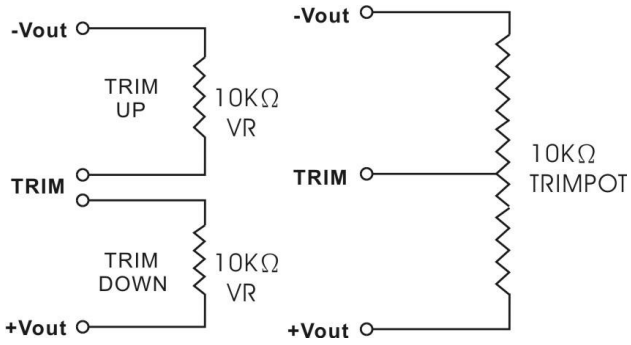
Safety Specifications

Parameters	
Agency approvals	CE, cULus
Standards	UL60950-1, UL62368-1
	EN55032, Class A, with external EMI filter IEC 61000-4-2, Criteria A IEC 61000-4-3, Criteria A IEC 61000-4-4, Criteria A, with external filter IEC 61000-4-5, Criteria A, with external filter IEC 61000-4-6, Criteria A IEC 61000-4-8, Criteria A

Derating



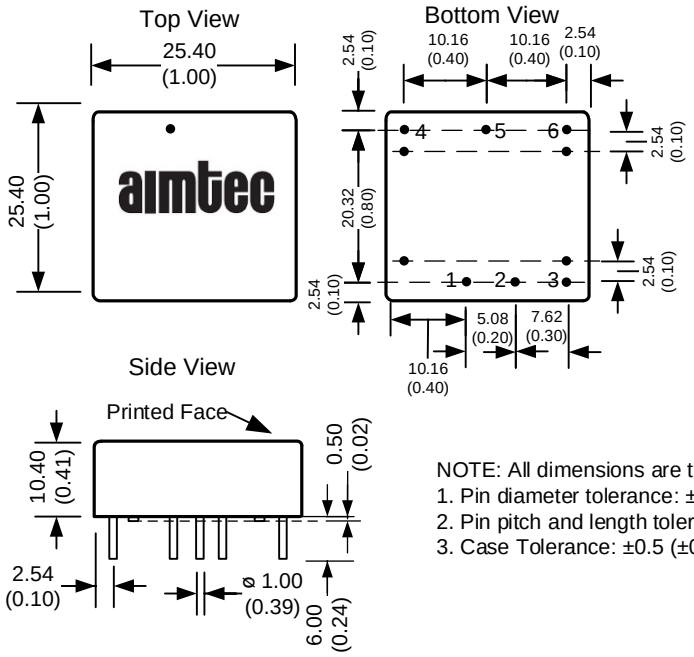
Trimming



Pin Out Specifications

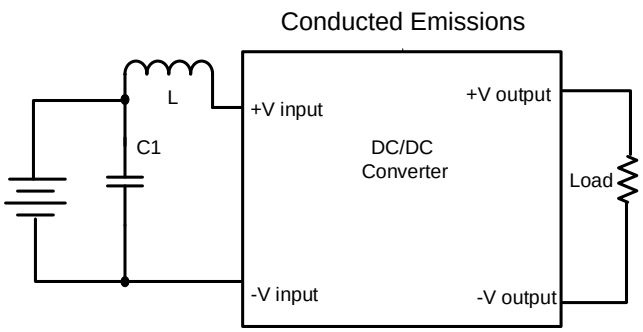
Pin	Single	Dual
1	+ V input	+ V input
2	- V input	- V input
3	On/Off Control	On/Off Control
4	+ V output	+ V output
5	Trim	Common
6	- V output	- V output

Dimensions



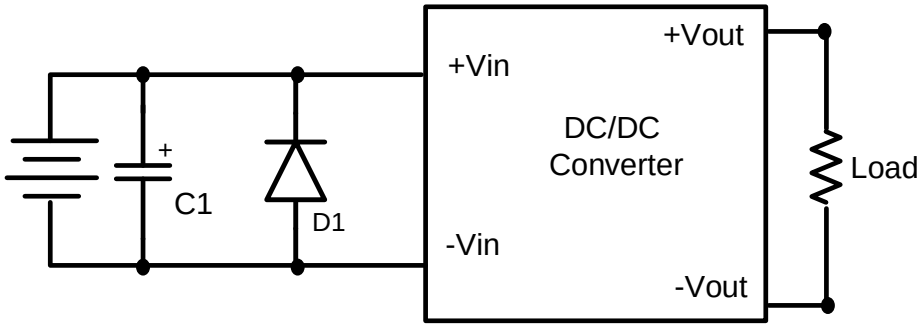
NOTE: All dimensions are typical in millimeters (inches).
1. Pin diameter tolerance: ±0.05 (±0.002)
2. Pin pitch and length tolerance: ±0.35 (±0.014)
3. Case Tolerance: ±0.5 (±0.02)

Recommended Application Circuits



Input Voltage	C1	L
24V	3.3µF/50V	0.82µH
48V	1µF/100V	2.2µH

EFT/Surge Circuit recommendation



Vin	C1	D1
24V	330 µF / 100V	TVS 58V, 3KW
48V		TVS 120V, 3KW

C1 : Nippon chemi-con KY series

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