aimtec
Your Power Partner

Series AM20CW-Z

20 Watt | DC-DC Converter



FEATURES:

- Ultra-compact footprint 1”x1”
- Ultra - Wide Input Range 4:1
- 1600 VDC Isolation
- Remote ON/OFF Function
- No Minimum Load Required
- Adjustable Output Voltage
- Operating Temperature -40ºC to +75ºC
- Over Current and Over Voltage Protection
- Efficiency up to 90%
- RoHS Compliant

Models: Single output

Model	Input Voltage (V)	Output Voltage (V)	Output Current max (A)	Isolation (VDC)	Max Capacitive Load (uF)	Efficiency (%)
AM20CW-2403SZ	9-36	3.3	4.5	1600	10000	88
AM20CW-2405SZ	9-36	5	4	1600	5000	89
AM20CW-2412SZ	9-36	12	1.67	1600	850	89
AM20CW-2415SZ	9-36	15	1.33	1600	700	89
AM20CW-4803SZ	18-75	3.3	4.5	1600	10000	88
AM20CW-4805SZ	18-75	5	4	1600	5000	89
AM20CW-4812SZ	18-75	12	1.67	1600	850	89
AM20CW-4815SZ	18-75	15	1.33	1600	700	89

Models: Dual output

Model	Input Voltage (V)	Output Voltage (V)	Output Current max (A)	Isolation (VDC)	Max Capacitive Load (uF)	Efficiency (%)
AM20CW-2412DZ	9-36	±12	±0.833	1600	±470	89
AM20CW-2415DZ	9-36	±15	±0.667	1600	±330	89
AM20CW-4812DZ	18-75	±12	±0.833	1600	±470	89
AM20CW-4815DZ	18-75	±15	±0.667	1600	±330	89

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 – 5mA			
No load current			50	mA
Under voltage lockout	24 Vin ON/OFF	8.6/7.9		VDC
	48 Vin ON/OFF	17.8/15.5		
Input reflected ripple current		30		mA p-p

Isolation Specifications

Parameters	Conditions	Typical	Rated	Units
Tested I/O voltage	60 sec		1600	VDC
Case to Input		1600		VDC
Case to Output		1600		VDC
Resistance		>1000		MOhm
Capacitance		1500		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	150		%
Short Circuit protection	Continuous			
Short circuit restart	Auto-Recovery			
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		%/ºC
Ripple & Noise*	20MHz Bandwidth		100	mV p-p
Ripple & Noise (3.3V/5V Output models)*	20MHz Bandwidth		75	mV p-p
Voltage adjustment range	Trim - Single output models only		±10	%

***** Measured with a 1.0µF ceramic capacitor and 10µF tantalum capacitor.

General Specifications

Parameters	Conditions	Typical	Maximum	Units
Switching frequency	100% load	330		KHz
Operating temperature	With derating above +55°C	-40 to +75		ºC
Storage temperature		-55 to +125		ºC
Maximum case temperature			105	ºC
Derating		2.33		%/ ºC
Cooling	Free air convection (30-65LFM)			
Humidity			95	% RH
Case material	Nickel-coated 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	> 560,000 hrs (MIL-HDBK -217F, Ground Benign, t=+25ºC)			
Maximum soldering temperature	1.5mm from case for 10 sec		260	ºC
Transient recovery time	Load step change 75% to 50% to 25%	250		µS
Transient recovery deviation	Load step change 75% to 50% to 25%		±3	%

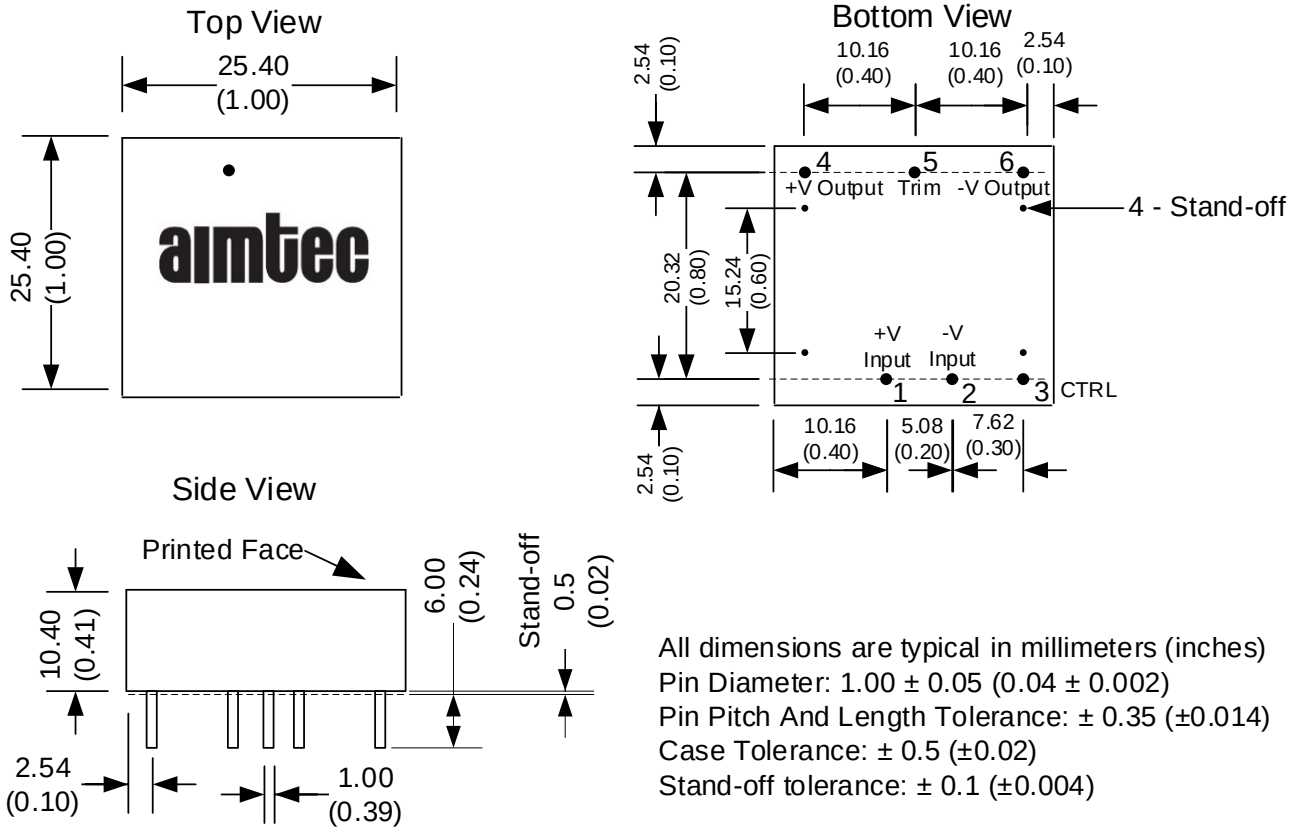
Safety Specifications

Parameters	
Agency Approval	CE , UL
Standards	UL60950-1, UL62368-1
	EN55032, Class A
	IEC61000-4-2 Perf. Criteria A
	IEC61000-4-3 Perf. Criteria A
	IEC61000-4-4 Perf. Criteria A (external 220uF/100V cap required)
	IEC61000-4-5 Perf. Criteria A (external 220uF/100V cap required)
	IEC61000-4-6 Perf. Criteria A
	IEC61000-4-8 Perf. Criteria A

Pin Out Specifications

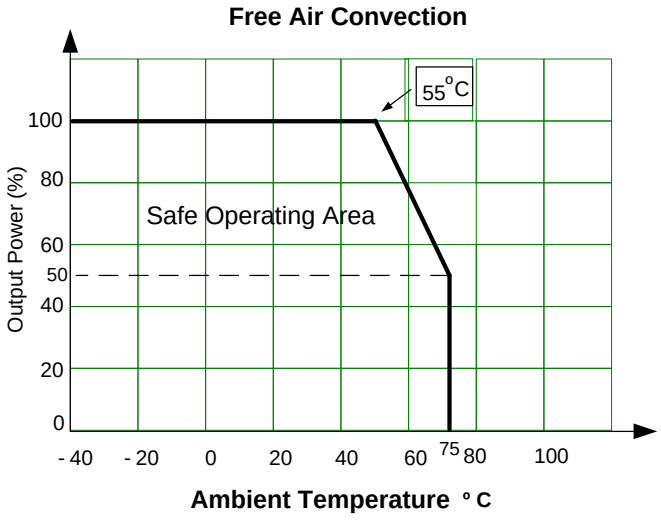
Pin	Single	Dual
1	+ V input	+ V input
2	- V input	- V input
3	On/Off Control	On/Off Control
4	+ V output	+ V output
5	Trim	Common
6	- V output	- V output

Dimensions

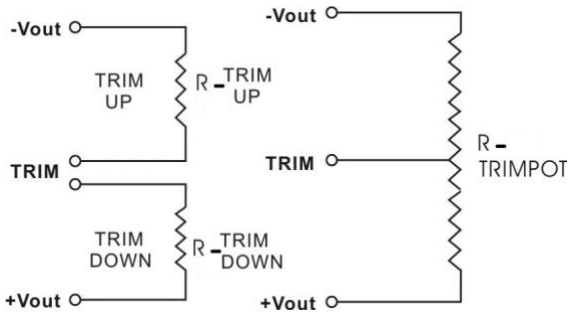


All dimensions are typical in millimeters (inches)
Pin Diameter: 1.00 ± 0.05 (0.04 ± 0.002)
Pin Pitch And Length Tolerance: ± 0.35 (±0.014)
Case Tolerance: ± 0.5 (±0.02)
Stand-off tolerance: ± 0.1 (±0.004)

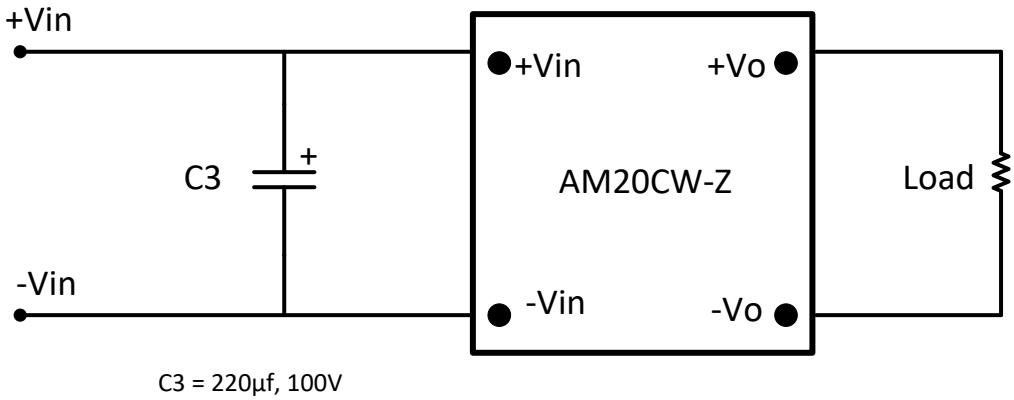
Derating



Trimming



Typical Application Circuit



C3 = 220µf, 100V

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