

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 -40°C to +75°C
- Over Current and Over Voltage Protection
- Efficiency up to 90%
- RoHS Compliant
- Soft Start



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	86
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	86
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	90

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 48	9-36 18-75		VDC
Filter	π			
Start up time	Nominal Vin with constant resistive load	30		ms
Absolute Maximum Rating	24 Vin 48 Vin		50 100	VDC
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 48 Vin ON/OFF	8.6/7.9 17.8/16		VDC
Input reflected ripple current		30		mA p-p

Isolation Specifications

Parameters	Conditions	Typical	Rated	Units
Tested I/O voltage	3 sec		1600	VDC
Case to Input	3 sec	1600		VDC
Case to Output	3 sec	1600		VDC
Resistance		>1000		MOhm
Capacitance		1000		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		%/°C
Ripple & Noise	20MHz Bandwidth	100		mV p-p
Voltage adjustment range	Trim - Single output models only	±10		%

General Specifications

Parameters	Conditions	Typical	Maximum	Units
Switching frequency	100% load	330		KHz
Operating temperature	With derating above +55°C	-40 to +75		°C
Storage temperature		-40 to +125		°C
Maximum case temperature			105	°C
Derating		2.33		%/°C
Cooling		Free air convection		
Humidity			95	% RH
Case material		Nickel-coated copper		
Weight		18		g
Dimensions (L x W x H)		1.00 x 1.00 x 0.40 inches	25.40 x 25.40 x 10.16 mm	
MTBF		> 560,000 hrs (MIL-HDBK -217F, Ground Benign, t=+25°C)		
Maximum soldering temperature	1.5mm from case for 10 sec		260	°C
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		%

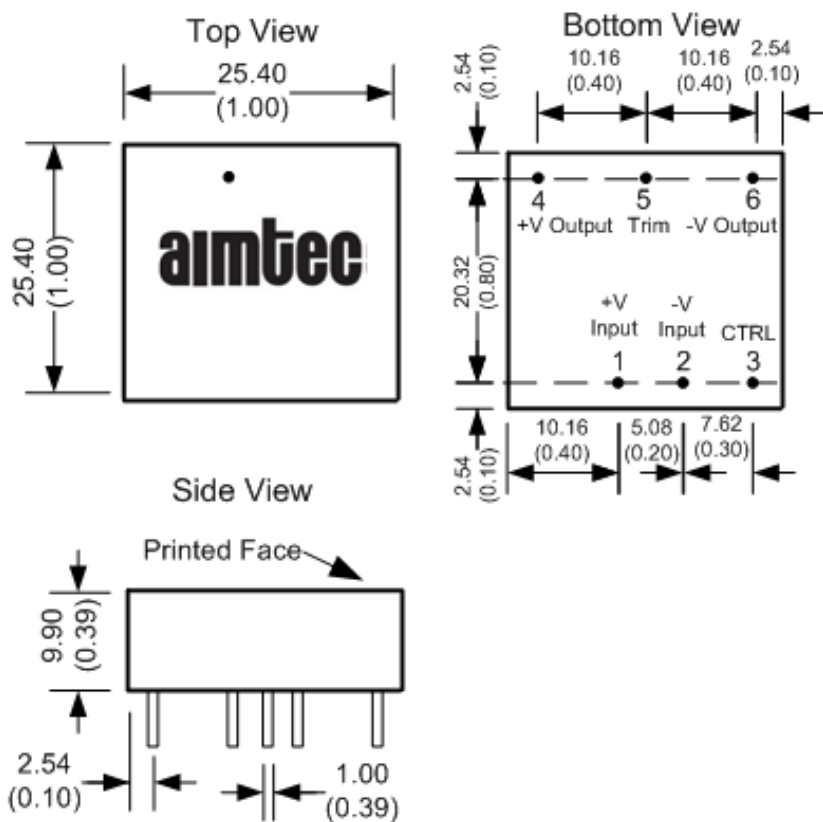
Safety Specifications

Parameters	
Agency Approval	CE
Standards	UL60950-1, UL62368-1
	EN55022: 2006 + A1:2007, Class A
	IEC61000-3-2:2006+A2:2009
	IEC61000-3-3:2008
	EN55024:1998 + A1:2001 + A2:2003
	IEC61000-4-2: 2008
	IEC61000-4-3:2006+A1: 2007
	IEC61000-4-4:2004
	IEC61000-4-5:2005
	IEC61000-4-6:2008
	IEC61000-4-8:2009

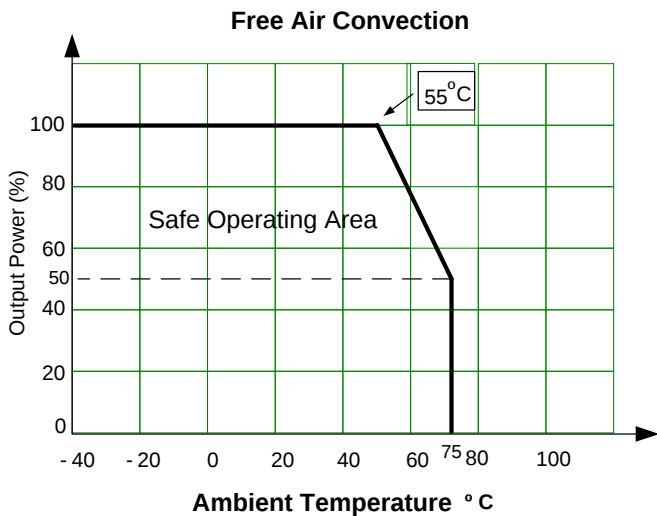
Pin Out Specifications

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

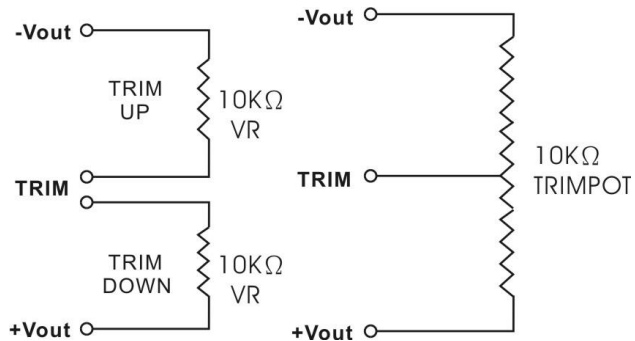
Dimensions



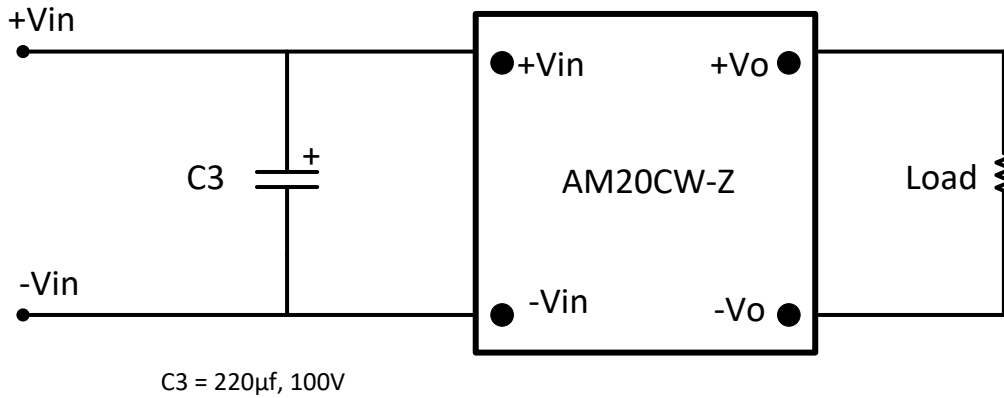
Derating



Trimming



Typical Application Circuit



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