



FEATURES:

- Wide 4:1 Input Voltage Range
- High efficiency up to 90%
- 1500 VDC Isolation
- Over Current Protection
- No load consumption $\leq 0.12W$
- Operating Temperature $-40^{\circ}C$ to $+85^{\circ}C$
- Output Over Voltage protection
- Continuous Short Circuit Protection
- Input Under Voltage Protection
- Remote On/Off control

Models
Single output

Model	Input Voltage (V)	Output Voltage (V)	Output Current max (A)	Isolation (VDC)	Max Capacitive Load (μF)	Efficiency (%)
AM20CW-2403S-NZ	9-36	3.3	5	1500	10000	88
AM20CW-2405S-NZ	9-36	5	4	1500	10000	90
AM20CW-2412S-NZ	9-36	12	1.667	1500	1600	90
AM20CW-2415S-NZ	9-36	15	1.333	1500	1000	91
AM20CW-2424S-NZ	9-36	24	0.833	1500	500	91
AM20CW-4803S-NZ	18-75	3.3	5	1500	10000	88
AM20CW-4805S-NZ	18-75	5	4	1500	10000	90
AM20CW-4812S-NZ	18-75	12	1.667	1500	1600	91
AM20CW-4815S-NZ	18-75	15	1.333	1500	1000	91
AM20CW-4824S-NZ	18-75	24	0.833	1500	500	91

**Add suffix “-K” for optional heatsink*

NOTE: All specifications in this datasheet are measured at an ambient temperature of $25^{\circ}C$, humidity $<75\%$, nominal input voltage and at rated output load unless otherwise specified.

Input Specifications

Parameters	Nominal	Typical	Maximum	Units
Voltage range	24 Vin 48 Vin	9-36 18-75		VDC
Filter		Pi		
Absolute Maximum Rating (100ms)	24 Vin 48 Vin		-0.7 - 50 -0.7 - 100	VDC
No Load Input Current	24 Vin 48 Vin		146 73	mA
Input reflected current		30		mA
Input Under voltage turn off	24 Vin 48 Vin	6.5 15.5		VDC
Startup time	Nominal input, resistive load	10		ms
Remote On/Off Control	On Off		2.5-12VDC or leave open 0-1.2VDC or connect to GND, idle current 6-10mA	

Isolation Specifications

Parameters	Conditions	Typical	Maximum	Units
Tested I/O voltage	60 sec, $<1mA$	1500		VDC
Resistance	500VDC		>1000	MOhm
Capacitance	I/O, 100KHz/0.1V	2000		pF

Output Specifications

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy	5% to 100% load	± 1	± 3	%
Over voltage protection		110-160		% of Vout
Over current protection		150		% of Iout
Short Circuit protection		Continuous		
Short circuit restart		Auto-Recovery		

Line voltage regulation	Full load, LL to HL	±0.2	±0.5	% of Vin
Load voltage regulation	5% to 100% load	±0.5	±1	%
Voltage adjustment			±10	%Vout
Temperature coefficient	100% load		±0.03	%/°C
Ripple & Noise	20MHz Bandwidth, 5-100% load		100	mV p-p
Transient recovery time	25% load step change	300	500	µs
Transient recovery deviation	3.3/5VDC, 25% load step change	±5	±8	%
	Others, 25% load step change	±3	±5	

General Specifications

Parameters	Conditions	Typical	Maximum	Units
Switching frequency	3.3/5VDC output, 100% load	300		KHz
	Other output, 100% load	270		
Operating temperature	3.3/5VDC output with derating curve	-40 to +95		°C
	Others with derating curve	-40 to +105		
Storage temperature		-55 to +125		°C
Maximum case temperature			100	°C
Cooling	Free air convection			
Humidity			95	% RH
Case material	Aluminum Alloy			
Weight	Pin mountable:	15		g
	With optional -K Pin mountable:	20		
Dimensions (L x W x H)	Pin mountable:	1.00 x 1.00 x 0.46 inches	25.40 x 25.40 x 11.70 mm	
	With optional -K Pin mountable:	1.00 x 1.00 x 0.65 inches	25.40 x 25.40 x 16.20 mm	
MTBF	>1,000,000 hours (MIL-HDBK -217F, Ground Benign, t _a =+25°C)			
Maximum soldering temperature	1.5mm from case for 10 sec		300	°C

Environmental Specifications

Parameters		
Vibration	Test mode	10-55Hz
	Acceleration	10G, 30min one cycle, every axis tested

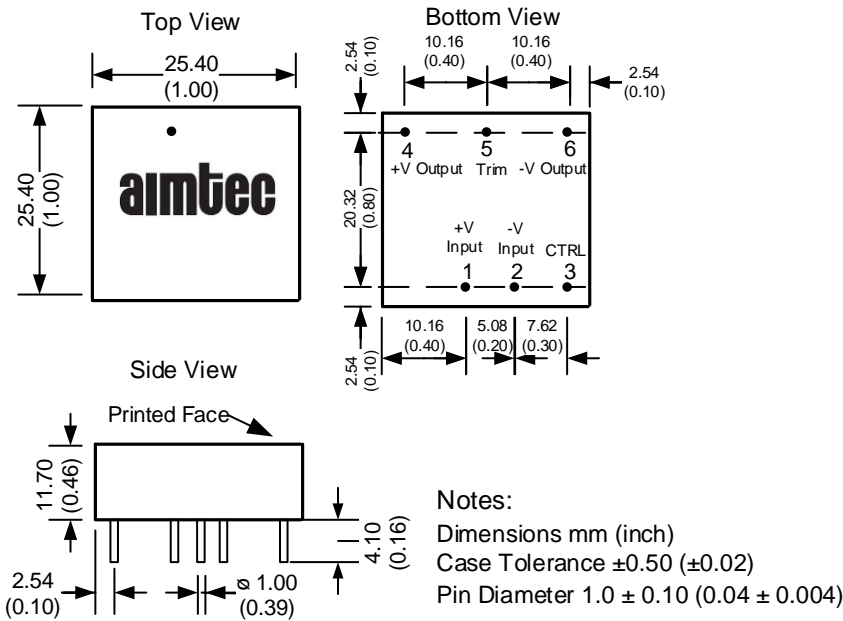
Safety Specifications

Parameters		
Approval	CE, UL, pending	
Standards	Information technology Equipment	Design to meet IEC/EN/UL 62368
	EMI - Conducted and radiated emission	EN 55032, class B (with the recommended EMC circuit)
	Electrostatic Discharge Immunity	IEC 61000-4-2, Contact ±4KV, Criteria B
	RF, Electromagnetic Field Immunity	IEC 61000-4-3, 10V/m, Criteria A
	Electrical Fast Transient / Burst Immunity	IEC 61000-4-4, ±2KV, Criteria B (with the recommended EMC circuit)
	Surge Immunity	IEC 61000-4-5, ±2KV, Criteria B (with the recommended EMC circuit)
	RF, Conducted Disturbance Immunity	IEC 61000-4-6, 3 Vrms, Criteria A

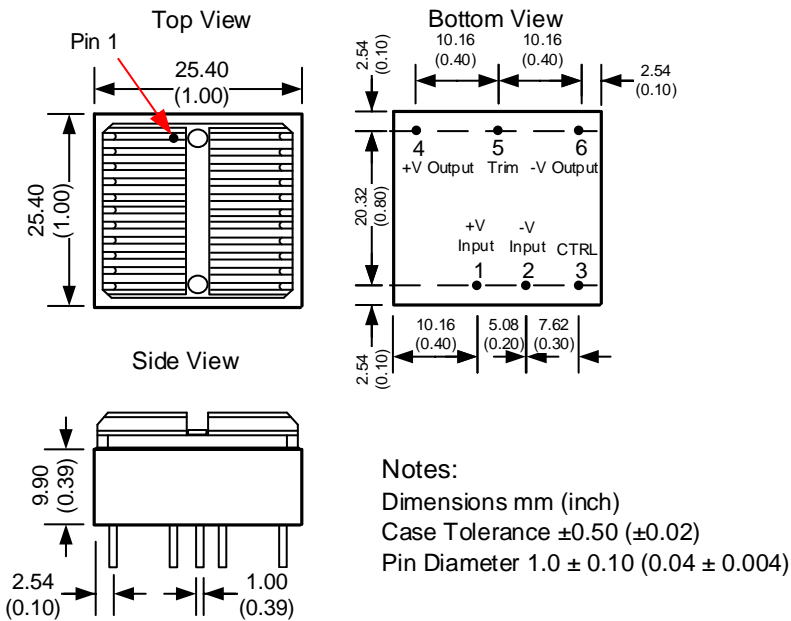
Pin Out Specifications

Pin	Single
1	+V Input
2	-V Input
3	On/Off Control
4	+V Output
5	Trim
6	-V Output

Dimensions

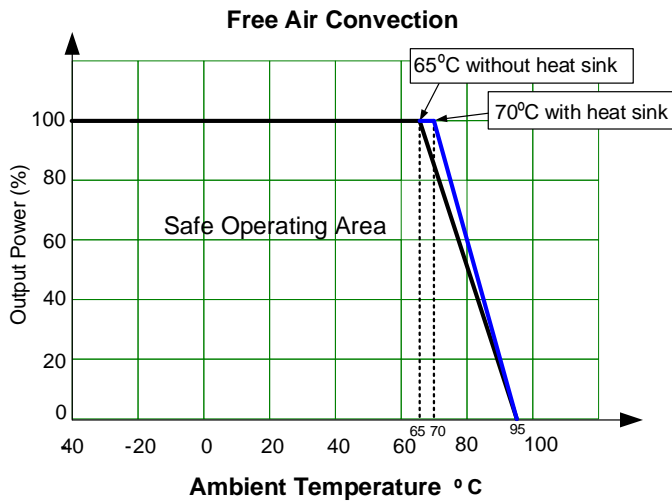


Heatsink Option: AM20CW-NZ-K

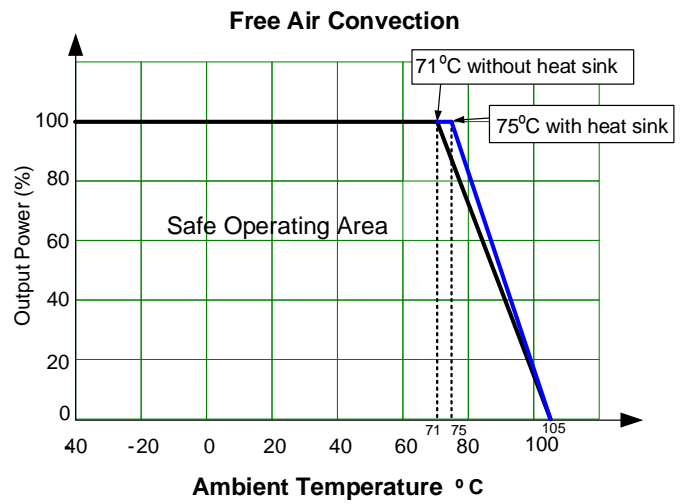


Derating

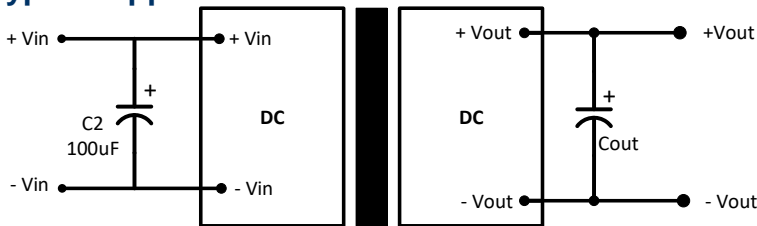
3.3V & 5V output models



Other models

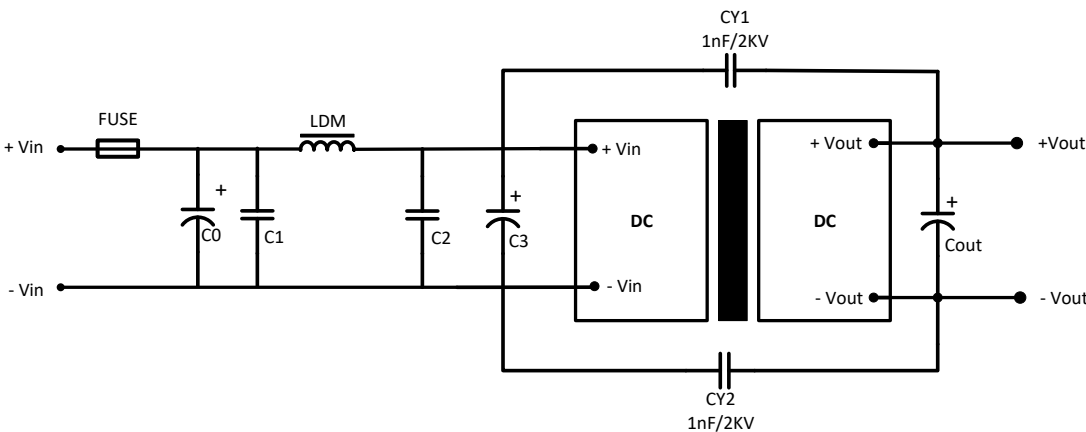


Typical Application Circuit



Model	3.3/5/12/15V output	24V output
Cout	100µF	47µF

Recommended EMC Circuit



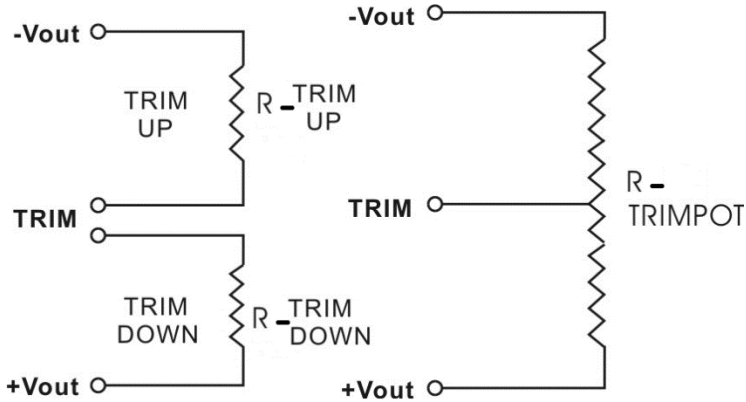
Model	24V input	48V input
C0, C3	330µF/50V	330µF/100V
C1, C2	4.7µF/50V	4.7µF/100V
LDM	2.2µH/4A	2.2µH/2A
Cout	Refer to typical circuit	

Trimming

Output voltage can be externally trimmed by utilizing the methods as shown below

Fixed Resistor

Variable Potentiometer



Leave open if not used.

3.3V Output

Trim down %	1	2	3	4	5	6	7	8	9	10
Vout (VDC)	3.267	3.234	3.201	3.168	3.135	3.102	3.069	3.036	3.003	2.97
Rt down (KΩ)	149.795	89.213	60.517	43.778	32.811	25.070	19.314	14.866	11.325	8.441
Trim up %	1	2	3	4	5	6	7	8	9	10
Vout (VDC)	3.333	3.366	3.399	3.432	3.465	3.498	3.531	3.564	3.597	3.63
Rt up (KΩ)	891.884	136.200	67.476	41.703	28.202	19.894	14.266	10.202	7.128	4.723

5V Output

Trim down %	1	2	3	4	5	6	7	8	9	10
Vout (VDC)	4.95	4.9	4.85	4.8	4.75	4.7	4.65	4.6	4.55	4.5
Rt down (KΩ)	89.996	47.446	29.793	20.131	14.036	9.840	6.775	4.439	2.598	1.111
Trim up %	1	2	3	4	5	6	7	8	9	10
Vout (VDC)	5.05	5.1	5.15	5.2	5.25	5.3	5.35	5.4	5.45	5.5
Rt up (KΩ)	238.676	81.473	46.044	30.398	21.581	15.923	11.985	9.085	6.861	5.101

12V Output

Trim down %	1	2	3	4	5	6	7	8	9	10
Vout (VDC)	11.88	11.76	11.64	11.52	11.4	11.28	11.16	11.04	10.92	10.8
Rt down (KΩ)	493.692	299.052	210.127	159.185	126.173	103.042	85.932	72.764	62.316	53.823
Trim up %	1	2	3	4	5	6	7	8	9	10
Vout (VDC)	12.12	12.24	12.36	12.48	12.6	12.72	12.84	12.96	13.08	13.2
Rt up (KΩ)	704.035	156.520	81.479	51.675	35.677	25.695	18.874	13.917	10.152	7.195

15V Output

Trim down %	1	2	3	4	5	6	7	8	9	10
Vout (VDC)	14.85	14.7	14.55	14.4	14.25	14.1	13.95	13.8	13.65	13.5
Rt down (KΩ)	632.483	398.237	286.114	220.359	177.137	146.560	123.787	106.169	92.132	80.687
Trim up %	1	2	3	4	5	6	7	8	9	10
Vout (VDC)	15.15	15.3	15.45	15.6	15.75	15.9	16.05	16.2	16.35	16.5
Rt up (KΩ)	1457.699	190.174	94.242	58.954	40.616	29.381	21.791	16.321	12.190	8.961

24V Output

Trim down %	1	2	3	4	5	6	7	8	9	10
Vout (VDC)	23.76	23.52	23.28	23.04	22.8	22.56	22.32	22.08	21.84	21.6
Rt down (KΩ)	1284.000	789.923	563.667	433.904	349.754	290.763	247.115	213.514	186.847	165.170
Trim up %	1	2	3	4	5	6	7	8	9	10
Vout (VDC)	24.24	24.48	24.72	24.96	25.2	25.44	25.68	25.92	26.16	26.4
Rt up (KΩ)	814.689	177.714	92.138	58.264	40.107	28.788	21.057	15.440	11.176	7.827

NOTE: **1.** Datasheets are updated as needed and as such, specifications are subject to change without notice. Once printed or downloaded, datasheets are no longer controlled by Aimtec; refer to www.aimtec.com for the most current product specifications. **2.** Product labels shown, including safety agency certifications on labels, may vary based on the date manufactured. **3.** Mechanical drawings and specifications are for reference only. **4.** All specifications are measured at an ambient temperature of 25°C, humidity<75%, nominal input voltage and at rated output load unless otherwise specified. **5.** Aimtec may not have conducted destructive testing or chemical analysis on all internal components and chemicals at the time of publishing this document. CAS numbers and other limited information are considered proprietary and may not be available for release. **6.** This product is not designed for use in critical life support systems, equipment used in hazardous environments, nuclear control systems or other such applications which necessitate specific safety and regulatory standards other the ones listed in this datasheet. **7.** Warranty is in accordance with Aimtec's standard Terms of Sale available at www.aimtec.com.