



FEATURES:

- Ultra Wide Input 4:1 Range
- Full SMD Technology
- 1600 VDC Isolation
- Efficiency up to 92%
- Soft Start
- Adjustable Output Voltage
- Remote ON/OFF Function
- Over Current, Voltage, & Temperature Protection
- Operating temperature -40°C to + 85°C

Models Single output



Model	Input Voltage (V)	Output Voltage (V)	Output Current max (A)	Isolation (VDC)	Max Capacitive Load (uF)	Efficiency (%)
AM40UW-2403SZ	9-36	3.3	10	1600	25000	89
AM40UW-2405SZ	9-36	5	8	1600	13000	91
AM40UW-2412SZ	9-36	12	3.35	1600	2300	90
AM40UW-2415SZ	9-36	15	2.65	1600	1500	90
AM40UW-4803SZ	18-75	3.3	10	1600	25000	89
AM40UW-4805SZ	18-75	5	8	1600	13000	92
AM40UW-4812SZ	18-75	12	3.35	1600	2300	90
AM40UW-4815SZ	18-75	15	2.65	1600	1500	91

Add suffix "-K" for optional heatsink

Models Dual output

Model	Input Voltage (V)	Output Voltage (V)	Output Current max (A)	Isolation (VDC)	Max Capacitive Load (uF)	Efficiency (%)
AM40UW-2412DZ	9-36	±12	±1.65	1600	±1200	89
AM40UW-2415DZ	9-36	±15	±1.35	1600	±750	89
AM40UW-4812DZ	18-75	±12	±1.65	1600	±1200	90
AM40UW-4815DZ	18-75	±15	±1.35	1600	±750	90

Add suffix "-K" for optional heatsink

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 (Pi) Network			
Start up time		25		ms
Absolute Maximum Rating	24 48		50 100	VDC
Peak Input Voltage time			100	ms
On/Off control	ON -3.0 -12 (or open) ; OFF -0 -1.2 (or short pin 2 to pin 3) Off idle current: 5mA			
No Load Input Current		100		mA
Under voltage lockout	24 ON/OFF 48 ON/OFF	8.6/7.9 17.6/16		VDC
Input reflected ripple current*		20		mA p-p

* Measured with a 12uH inductor

Isolation Specifications

Parameters	Conditions	Typical	Rated	Units
Tested I/O voltage	60 sec		1600	VDC
Tested I,O/case voltage	60 sec		1600	VDC
Resistance		>1000		MOhm
Capacitance		2500		pF

Output Specifications

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy		±1		%
Cross Regulation (Dual Output Models)	1 st output 25% to 100%, 2 nd output 100%	±5		%
Over voltage protection	Zener Diode Clamp, 3.3V output	3.9		V
	Zener Diode Clamp, 5V output	6.2		
	Zener Diode Clamp, 12V output	15		
	Zener Diode Clamp, 15V output	18		
	Zener Diode Clamp, ±12V output	±15		
	Zener Diode Clamp, ±15V output	±18		
Over current protection	Full Load	130		%
Short Circuit protection	Continuous			
Short circuit restart	Auto-Restart			
Thermal shutdown	On Case	110		°C
Line voltage regulation	HL-LL		±0.5	% of Vin
Load voltage regulation (Single)	I _{out} =0% to 100%		±0.5	%
Load voltage regulation (Dual)	I _{out} =1% to 100%		±1	%
Temperature coefficient		±0.02		%/°C
Ripple & Noise*	3.3/5V output models		50	mV p-p
	Dual output models		150	
	Other models		75	
Voltage adjustment range	Inclusive of trim and remote sense		±10	%
Minimum load current		0		% of Max

* Measured at 20MHz bandwidth a 1.0µF ceramic capacitor.

General Specifications

Parameters	Conditions	Typical	Maximum	Units
Switching frequency	100% load	270		KHz
Operating temperature	With derating above 55 °C (see graph below)	-40 to +85		°C
Storage temperature		-55 to +125		°C
Maximum case temperature			105	°C
Derating	Above 55 °C	2		%/°C
Cooling	Free Air Convection			
Humidity			95	% RH
Case material	Nickel – coated Copper			
Weight		65		g
Dimensions (L x W x H)	2.00 x 2.00 x 0.40 inches	50.81 x 50.81	10.14 mm	
MTBF	>151000 hrs Calculated using MIL-HDBK-217 F at +25 °C			
Maximum soldering temperature	1.5mm from case for 10 sec		260	°C
Transient recovery time	25% load step change	250		µS
Transient recovery deviation	25% load step change		±3	%

Safety Specifications

Standards	
Safety	Design to meet IEC/EN/UL 60950, 62368
	EN55032, Class A with the recommended circuit
	IEC61000-4-2 Perf. Criteria A
	IEC61000-4-3 Perf. Criteria A
	IEC61000-4-4 Perf. Criteria A (external 220µF/100V cap required)
	IEC61000-4-5 Perf. Criteria A (external 220µF/100V cap required)
	IEC61000-4-6 Perf. Criteria A
	IEC61000-4-8 Perf. Criteria A

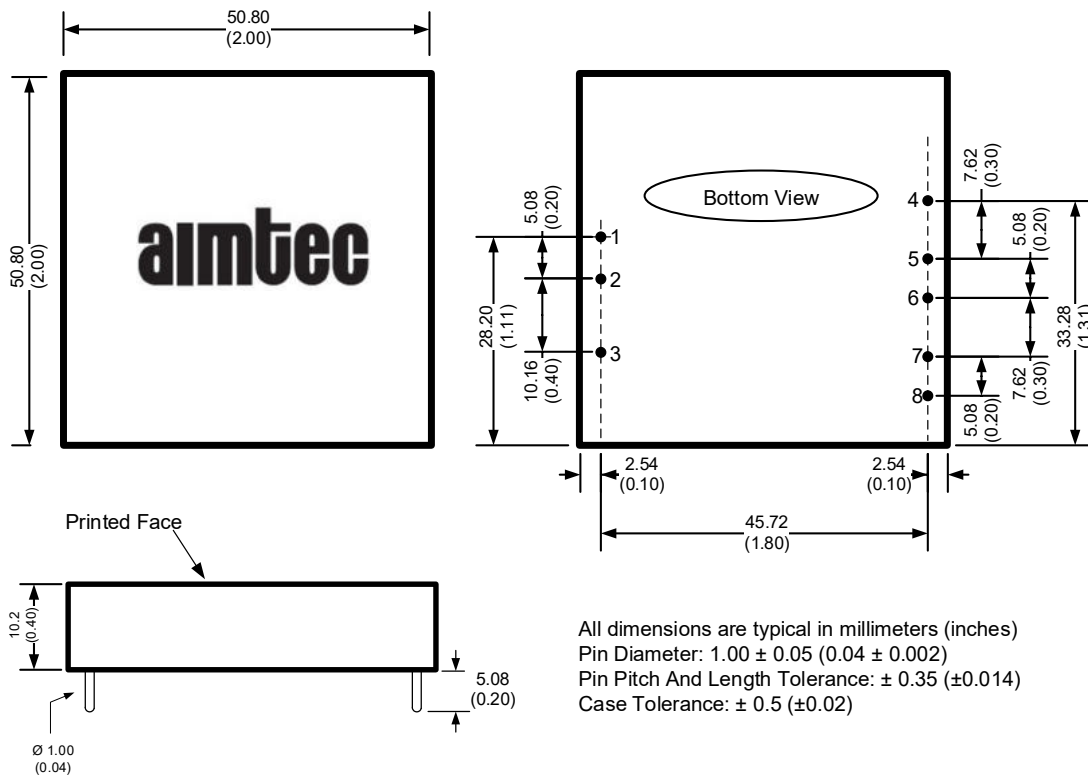
Pin Out Specifications

Pin	Single	Dual
1	+V Input	+V Input
2	-V Input	-V Input
3	On/Off Control	On/Off Control
4	- Sense	+V Output
5	+ Sense	Common
6	+V Output	Common
7	-V Output	-V Output
8	Trim	Trim

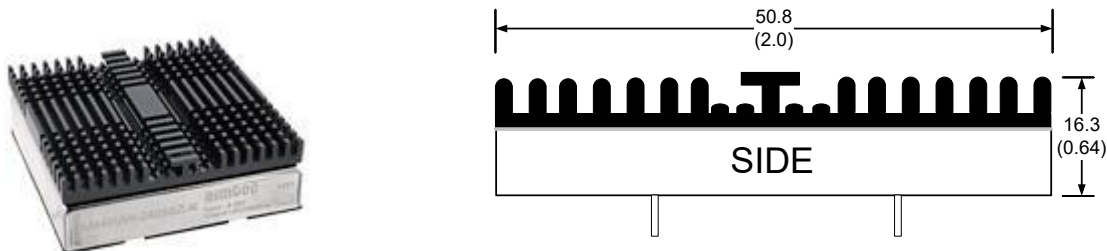
Note:

When not using the sense function, connect the +sense to +Vout and -sense to -Vout with the shortest possible traces to avoid interference and minimize the voltage drop.

Dimensions

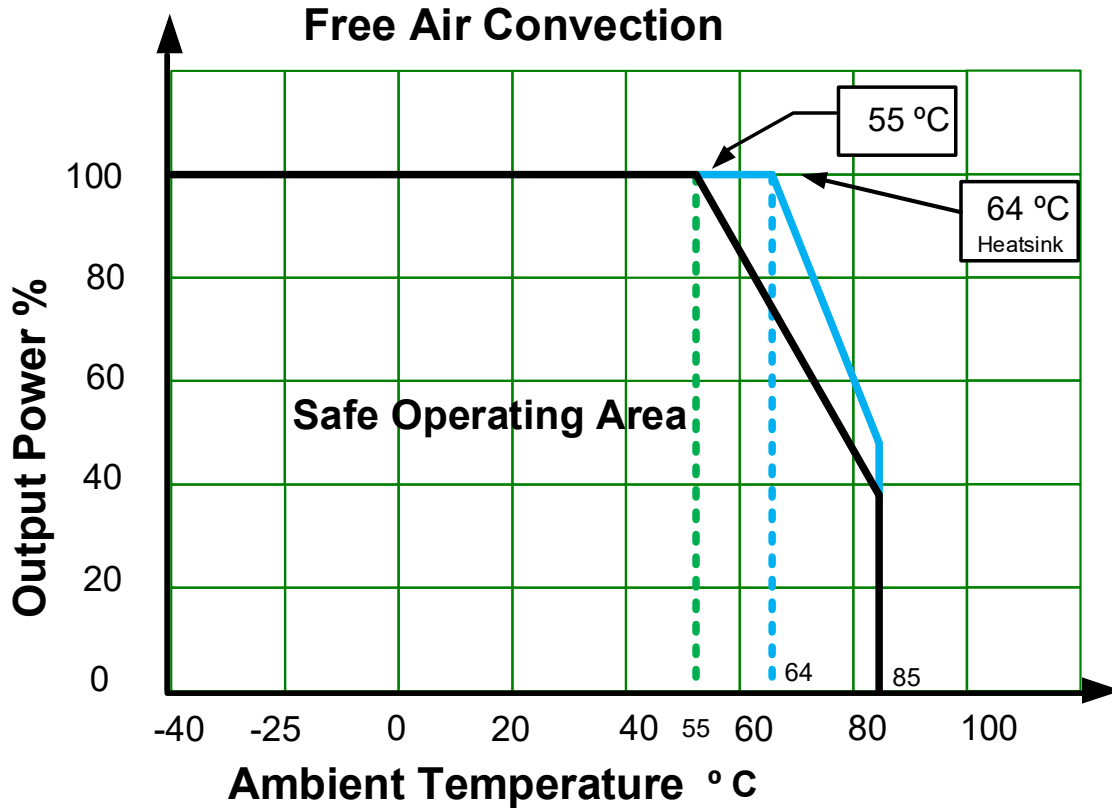


Dimensions with Optional Heatsink



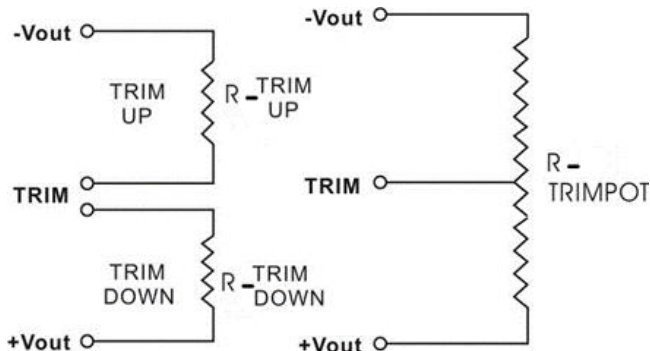
Notes: Add "-K" suffix for ordering, heatsink is affixed with thermally dissipative adhesive tape.
See derating graph for temperature performance. Heatsink material is anodized (black) aluminum, adds weight 22g to total mass (60g).

Derating



Extended temperature performance can be achieved with optional heatsink. (add suffix “-K” to part number)

Trimming



AM40UW-XX03SZ

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)	315.932	172.257	112.528	79.806	59.153	44.930	34.539	26.616	20.374	15.330
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)	544.612	184.034	103.305	67.715	47.676	34.824	25.880	19.297	14.249	10.255

AM40UW-XX05SZ

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)	230.566	106.182	64.301	43.281	30.643	22.207	16.177	11.651	8.129	5.310
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)	244.547	113.776	70.631	49.142	36.274	27.707	21.592	17.010	13.447	10.598

AM40UW-XX12SZ

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)	327.351	142.100	83.928	55.470	38.591	27.418	19.477	13.542	8.939	5.264
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)	371.425	183.645	117.623	83.929	63.489	49.767	39.919	32.508	26.728	22.094

AM40UW-XX15SZ

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)	433.811	174.916	100.946	65.907	45.468	32.077	22.625	15.596	10.165	5.842
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)	347.293	178.523	115.235	82.084	61.683	47.863	37.882	30.336	24.430	19.682

AM40UW-XX12DZ

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)	231.849	106.217	63.546	42.058	29.116	20.468	14.280	9.634	6.017	3.122
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)	229.254	103.827	62.826	42.473	30.309	22.218	16.449	12.128	8.769	6.085

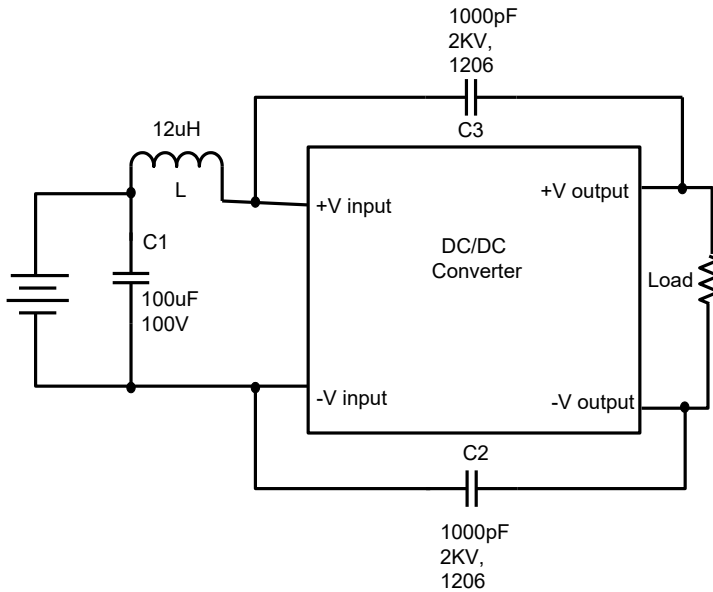
AM40UW-XX15DZ

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)	351.590	146.987	85.137	55.280	37.693	26.101	17.886	11.760	7.015	3.232
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)	239.820	116.162	71.431	48.344	34.251	24.754	17.919	12.765	8.740	5.509

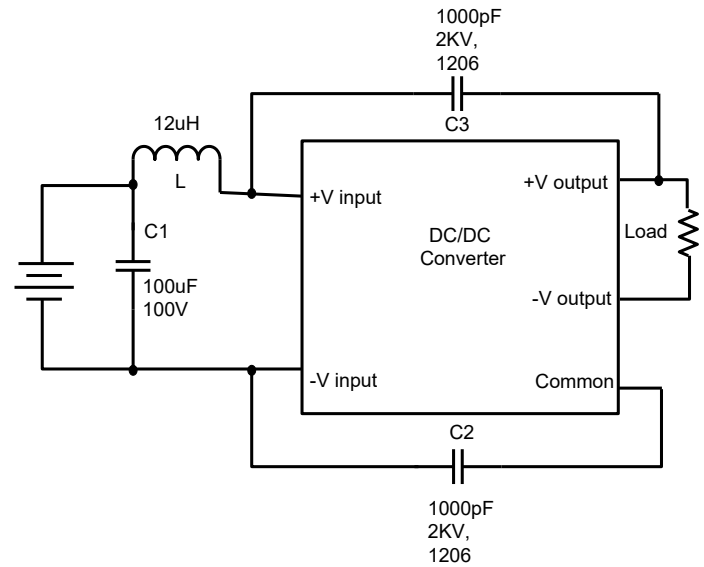
Recommended Circuits

Conducted and Radiated Emissions

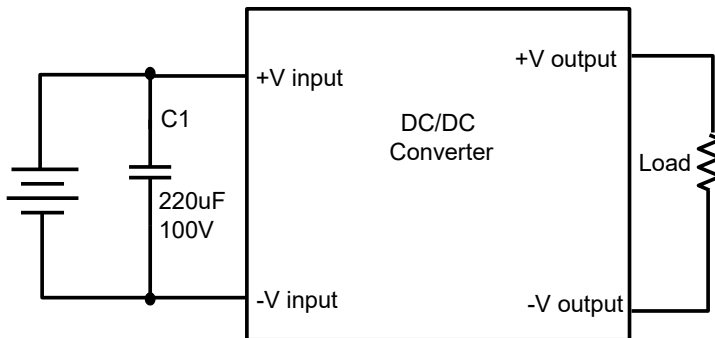
Single Output



Dual Output



EFT/Surge



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.