aimtec
Your Power Partner

Series AM40UW-Z
40 Watt | DC-DC Converter

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	90
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	90

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	90
AM40UW-4812DZ	18-75	±12	±1.65	1600	±1200	80
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

Isolation Specifications

Parameters	Conditions	Typical	Rated	Units
Tested I/O voltage	3 sec		1600	VDC
Resistance		>1000		MOhm
Capacitance		2500		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			
Over current protection	Full Load	150		%
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)	Iout=0% to 100%	±0.5		%
Load voltage regulation (Dual)	Iout=0% to 100%	±1		%
Temperature coefficient		±0.02		%/°C
Ripple & Noise	20MHz Bandwidth	150		mV p-p
Voltage adjustment range		±10		%
Minimum Load Current		0		% of Max

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	-40 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	60			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	>1500000 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		250		uS
Transient recovery deviation		±3		mS

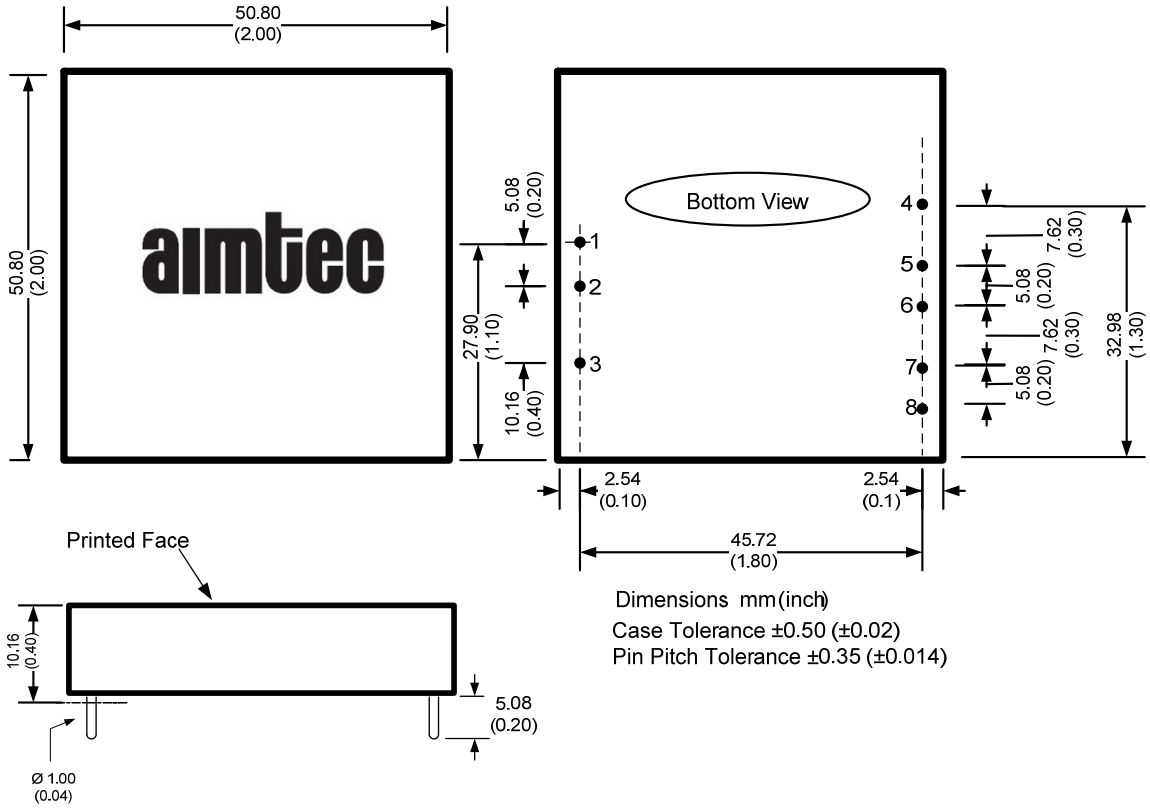
Safety Specifications

Standards	
Agency Approval	CE, meet IEC 60950-1:2001
Safety	EN55022: 2006 + A1:2007, Class A EN55024:1998 + A1:2001 + A2:2003
	IEC61000-4-2:1995 + A1:1998 + A2:2000, Perf. Criteria B
	IEC61000-4-3:2006, Perf. Criteria A
	IEC61000-4-4:2004, Perf. Criteria B (external 220uF/100V cap required)
	IEC61000-4-5:2005, Perf. Criteria B (external 220uF/100V cap required)
	IEC61000-4-6:2007, Perf. Criteria A
	IEC61000-4-8, Perf:1993 + A1:2000, Criteria A

Pin Out Specifications

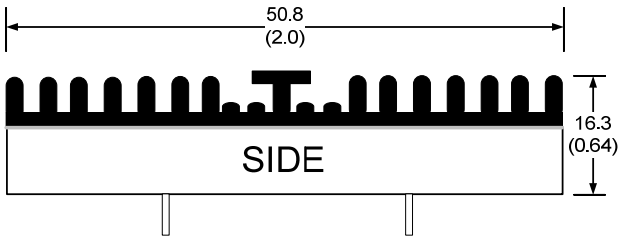
Pin	Single	Dual
1	+V Input	+V Input
2	-V Input	-V Input
3	On/Off Control	On/Off Control
4	- Sense	+V Output
5	+ Sense	Common
6	+V Output	Common
7	-V Output	-V Output
8	Trim	Trim

Dimensions



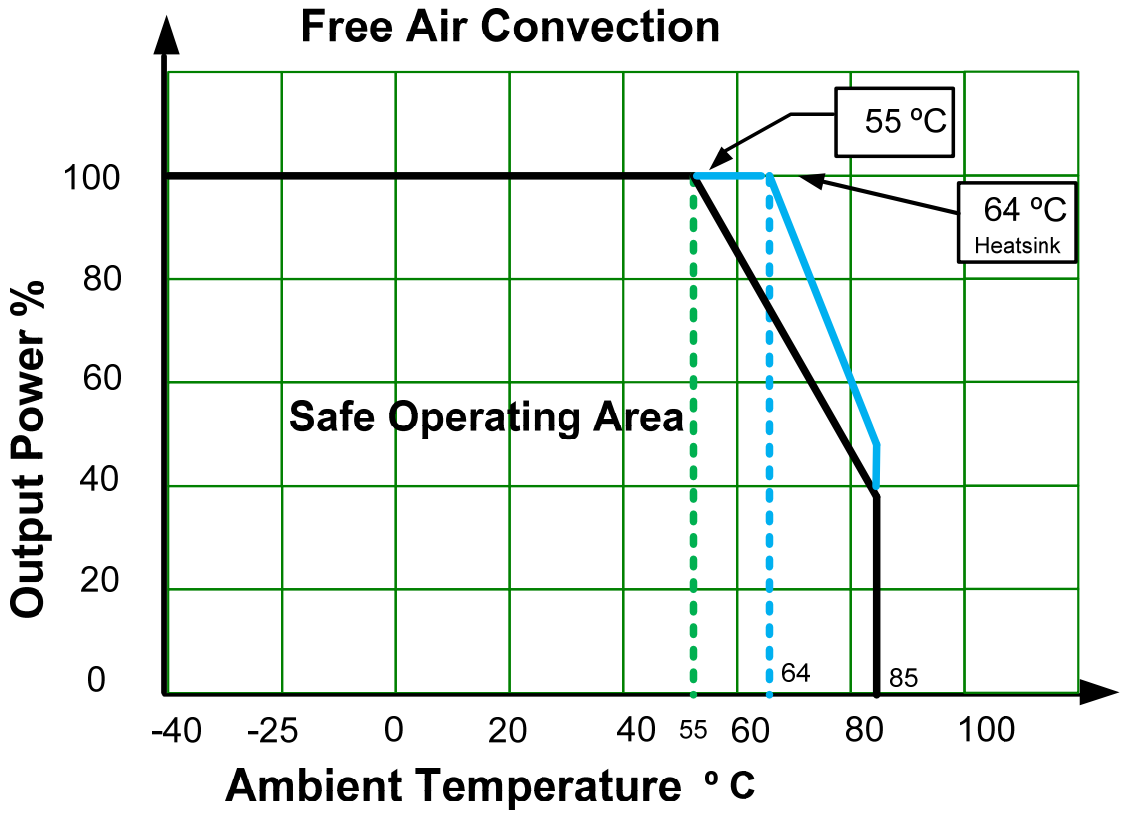
Dimensions mm(inch)
Case Tolerance ±0.50 (±0.02)
Pin Pitch Tolerance ±0.35 (±0.014)

Dimensions with Optional Heatsink



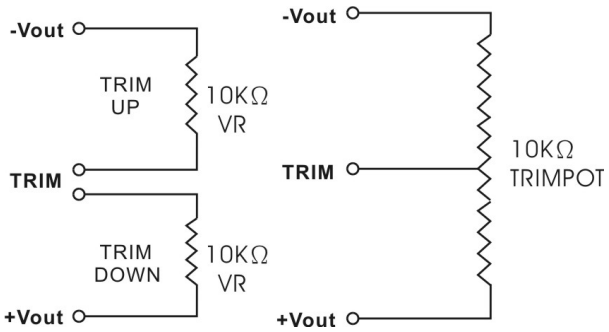
Notes: Add “-K” suffix for ordering, heatsink is affixed with thermally dissipative adhesive tape.
See derating graph for temperature performance. Heatsink material is anodized (black) aluminum, adds weight 22g to total mass (60g). Thermal impedance of converter is: without heatsink 10°C/W and 8.8°C/W with heatsink.

Derating

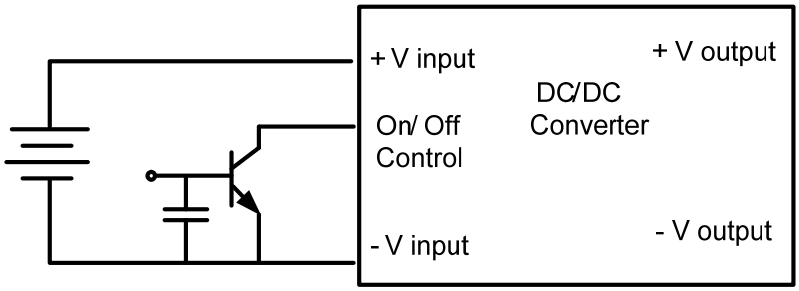


Extended temperature performance can be achieved with optional heatsink. (add suffix "–K" to part number)

Trimming



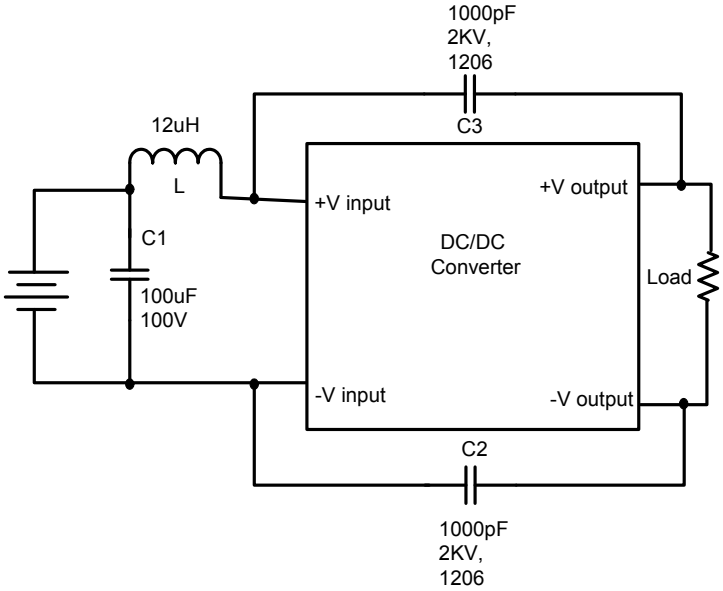
Control ON/OFF



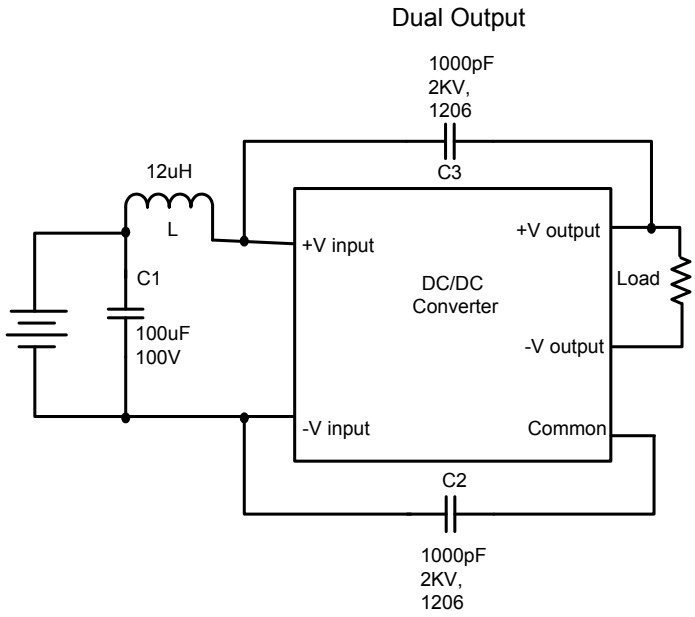
Recommended Circuits

Conducted and Radiated Emissions

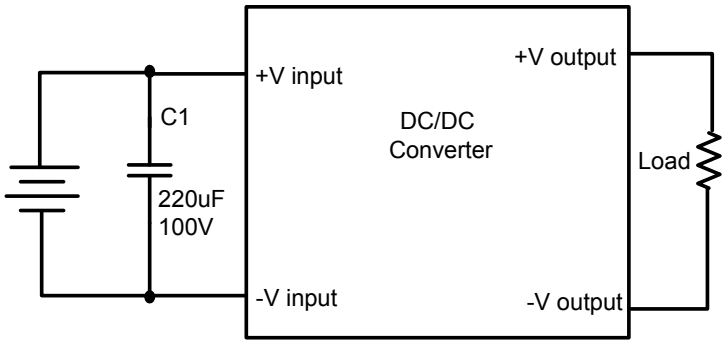
Single Output



Dual Output



EFT/Surge



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