

Series AM40U-AZ

40 Watt | DC-DC Converter

FEATURES:



- Wide Input 2:1 Range
- Full Internal SMD Technology
- 1600 VDC Isolation
- Efficiency up to 89%
- Adjustable Output Voltage
- Remote ON/OFF Function
- Over Load, Voltage & Short Circuit Protection
- Operating temperature -40°C to + 85°C



Models Single output

Model	Input Voltage (V)	Output Voltage (V)	Output Current max (A)	Isolation (VDC)	Efficiency (%)
AM40U-1203SAZ	9-18	3.3	8	1600	85
AM40U-1205SAZ	9-18	5	8	1600	86
AM40U-1212SAZ	9-18	12	3.3	1600	86
AM40U-1215SAZ	9-18	15	2.6	1600	87
AM40U-2403SAZ	18-36	3.3	8	1600	86
AM40U-2405SAZ	18-36	5	8	1600	88
AM40U-2412SAZ	18-36	12	3.3	1600	88
AM40U-2415SAZ	18-36	15	2.6	1600	89
AM40U-4803SAZ	36-75	3.3	8	1600	87
AM40U-4805SAZ	36-75	5	8	1600	88
AM40U-4812SAZ	36-75	12	3.3	1600	89
AM40U-4815SAZ	36-75	15	2.6	1600	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	12	9-18		VDC
	24	18-36		
	48	36-75		
Filter	π(Pi) Network			
Start up time		25		ms
Absolute Maximum Rating	12		36	VDC
	24		50	
	48		100	
Peak Input Voltage time			100	ms
Input reflected ripple current		20		mA p-p
Remote CNTL (ON/OFF)	ON – Open or without any connection or 3.5V ≤ 12V OFF- Short to input ground or 0V ≤ 1.2V			

Isolation Specifications

Parameters	Conditions	Typical	Rated	Units
Tested I/O voltage	3 sec		1600	VDC
Resistance		>1000		MOhm
Capacitance		220		pF

Output Specifications

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy		± 2		%
Over voltage protection		Zener Diode Clamp		
Over load protection	Foldback	135~150		%
Short Circuit protection		Continuous		
Short circuit restart		Auto-Restart		
Thermal shutdown	On Case	110		°C

Output Specifications (continued)

Parameters	Conditions	Typical	Maximum	Units
Line voltage regulation	HL-LL	±1		% of Vin
Load voltage regulation (Single)	I _{out} =10% to 100%	±2		%
Temperature coefficient		±0.02		%/°C
Ripple & Noise	20MHz Bandwidth	75		mV p-p
Voltage adjustment range (TRIM)		±10		%

Sense and Trim outputs can be left open, unconnected if not in use.

General Specifications

Parameters	Conditions	Typical	Maximum	Units
Switching frequency	100% load	300		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		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		>1 500 000 hrs (MIL-HDBK-217 F at +25 °C)		
Maximum soldering temperature	1.5mm from case for 10 sec	260		°C
Transient recovery time		500		µS
Transient recovery deviation	25% load step	±4% of V _{out}		

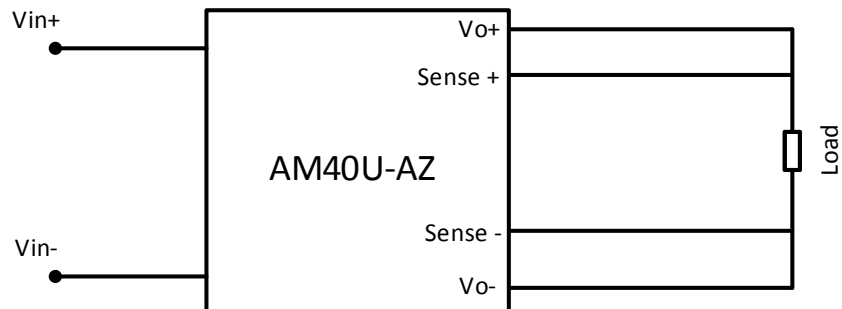
Safety Specifications

Parameters	
Standards	Designed to meet IEC 60950-1:2001 and EN55022:2006 + A1:2007, Class B with the suggested below circuit

Pin Out Specifications

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

Recommended Circuit (Sense) Optional



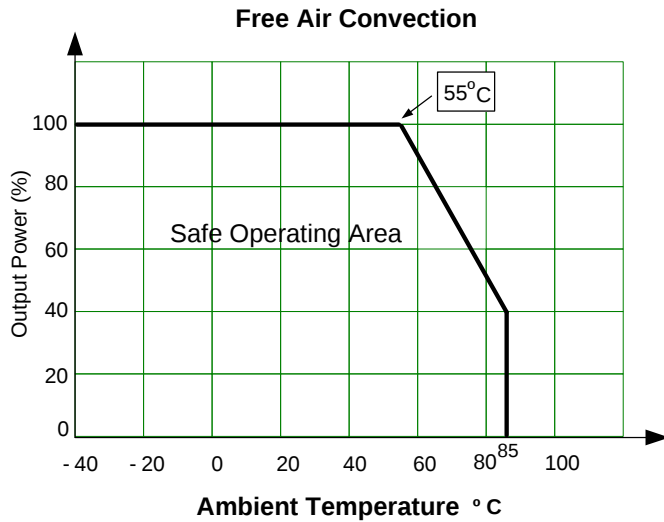
The Sense function: compensates for voltage drop of output due to connections, long leads, traces, or cable widths. Etc.

The drawing includes the following dimensions:

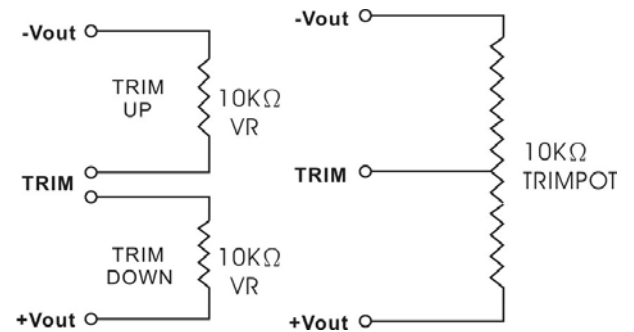
- Top View:**
 - Overall width: 50.80 (2.00)
 - Overall height: 50.80 (2.00)
 - Distance from top edge to center of pin 1: 27.90 (1.10)
 - Distance from center of pin 1 to center of pin 2: 5.08 (0.20)
 - Distance from center of pin 2 to center of pin 3: 10.16 (0.40)
 - Distance from center of pin 3 to center of pin 4: 27.90 (1.10)
 - Distance from center of pin 4 to center of pin 5: 5.08 (0.20)
 - Distance from center of pin 5 to center of pin 6: 10.16 (0.40)
 - Distance from center of pin 6 to center of pin 7: 27.90 (1.10)
 - Distance from center of pin 7 to center of pin 8: 5.08 (0.20)
 - Distance from center of pin 8 to bottom edge: 10.16 (0.40)
- Bottom View:**
 - Overall width: 45.72 (1.80)
 - Distance from left edge to center of pin 1: 2.54 (0.10)
 - Distance from center of pin 1 to center of pin 2: 5.08 (0.20)
 - Distance from center of pin 2 to center of pin 3: 10.16 (0.40)
 - Distance from center of pin 3 to center of pin 4: 2.54 (0.10)
 - Distance from center of pin 4 to center of pin 5: 5.08 (0.20)
 - Distance from center of pin 5 to center of pin 6: 10.16 (0.40)
 - Distance from center of pin 6 to center of pin 7: 2.54 (0.10)
 - Distance from center of pin 7 to center of pin 8: 5.08 (0.20)
 - Distance from center of pin 8 to right edge: 2.54 (0.10)
- Side View:**
 - Overall thickness: 10.16 (0.40)
 - Distance from top edge to center of pin 1: 27.90 (1.10)
 - Distance from center of pin 1 to center of pin 2: 5.08 (0.20)
 - Distance from center of pin 2 to center of pin 3: 10.16 (0.40)
 - Distance from center of pin 3 to center of pin 4: 27.90 (1.10)
 - Distance from center of pin 4 to center of pin 5: 5.08 (0.20)
 - Distance from center of pin 5 to center of pin 6: 10.16 (0.40)
 - Distance from center of pin 6 to center of pin 7: 27.90 (1.10)
 - Distance from center of pin 7 to center of pin 8: 5.08 (0.20)
 - Distance from center of pin 8 to bottom edge: 10.16 (0.40)

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

Derating



Trimming



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.