aimtec
Your Power Partner

Series AM60U-Z

60 Watt | DC-DC Converter



FEATURES:

- Wide Input 2:1 Range
- No Minimum Load Required
- Soft Start
- Efficiency up to 91%
- Adjustable Output Voltage
- Remote ON/OFF Function
- Operating temperature -40°C to + 85°C
- Over Load, Voltage, Temperature & Short Circuit Protection

RoHS

Models

Single output

Model	Input Voltage (V)	Output Voltage (V)	Output Current max (A)	Isolation (VDC)	Max Capacitive Load (uF)	Efficiency (%)
AM60U-2403SZ	18-36	3.3	14	1600	36000	91
AM60U-2405SZ	18-36	5	12	1600	20400	91
AM60U-2412SZ	18-36	12	5	1600	3550	90
AM60U-2415SZ	18-36	15	4	1600	2300	90
AM60U-4803SZ	36-75	3.3	14	1600	36000	91
AM60U-4805SZ	36-75	5	12	1600	20400	91
AM60U-4812SZ	36-75	12	5	1600	3550	91
AM60U-4815SZ	36-75	15	4	1600	2300	91

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	18-36 36-75		VDC
Filter	π(Pi) Network			
Start up time		20		ms
Absolute Maximum Rating	24 48		~0.7~50 ~0.7~100	VDC
Peak Input Voltage time			100	ms
Input reflected ripple current*		20		mA p-p
Under Voltage Lockout (On/Off)	24 ON/OFF 48 ON/OFF	17.8/16 33.5/30.5		VDC
On/Off control	ON: 3 ~12Vdc or Open Circuit OFF: 0 ~ 1.2Vdc or Short pin 2 & 3 (idle current 5mA typical)			

* The input reflected ripple current should be measured with a 12μH inductor and a 47μF input capacitor (ESR<1Ω at 100 KHz)

Isolation Specifications

Parameters	Conditions	Typical	Rated	Units
Tested I/O voltage	60 sec		1600	VDC
Case Input & Output	60 sec		1600	VDC
Resistance		>1000		MOhm
Capacitance		2000		pF

Output Specifications

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy			±1	%
Over voltage protection	Zener Diode Clamp, 3.3V Zener Diode Clamp, 5V Zener Diode Clamp, 12V Zener Diode Clamp, 15V	3.9 6.2 15 18		V
Over load protection	Hiccup	135		%
Short Circuit protection	Continuous			
Short circuit restart	Auto-Restart			

Output Specifications (continued)

Parameters	Conditions	Typical	Maximum	Units
Thermal shutdown	On Case	120		°C
Line voltage regulation			±0.5	%
Load voltage regulation	0% to 100% Full Load		±0.5	%
Temperature coefficient		±0.02		%/°C
Ripple & Noise*	20MHz Bandwidth (3.3 & 5V) 20MHz Bandwidth (12 & 15V)		75 100	mV p-p
Transient Response Deviation	25% load step change		±3	%
Transient Recovery	25% load step change	250		µsec
Voltage adjustment range	Inclusive of trim and remote sense		±10	%

***** Measured with a 1.0µF ceramic capacitor.

General Specifications

Parameters	Conditions	Typical	Maximum	Units
Switching frequency	100% load	270		KHz
Operating temperature	With derating above 40 °C (see graph below)	-40 to +85		°C
Storage temperature		-40 to +125		°C
Maximum case temperature			110	°C
Derating	Above 40 °C, without heatsink Above 55 °C, with heatsink	1.54 2.0		%/ °C
Cooling	Free Air Convection			
Humidity			95	% RH
Case material	Nickel – coated Copper			
Weight		70		g
Dimensions (L x W x H)	2.00 x 2.00 x 0.40 inches	50.8 x 50.8 x 10.2 mm		
MTBF	>110 000 hrs (MIL-HDBK-217 F at +25 °C)			
Maximum soldering temperature	1.5mm from case for 10 sec		260	°C

Safety Specifications

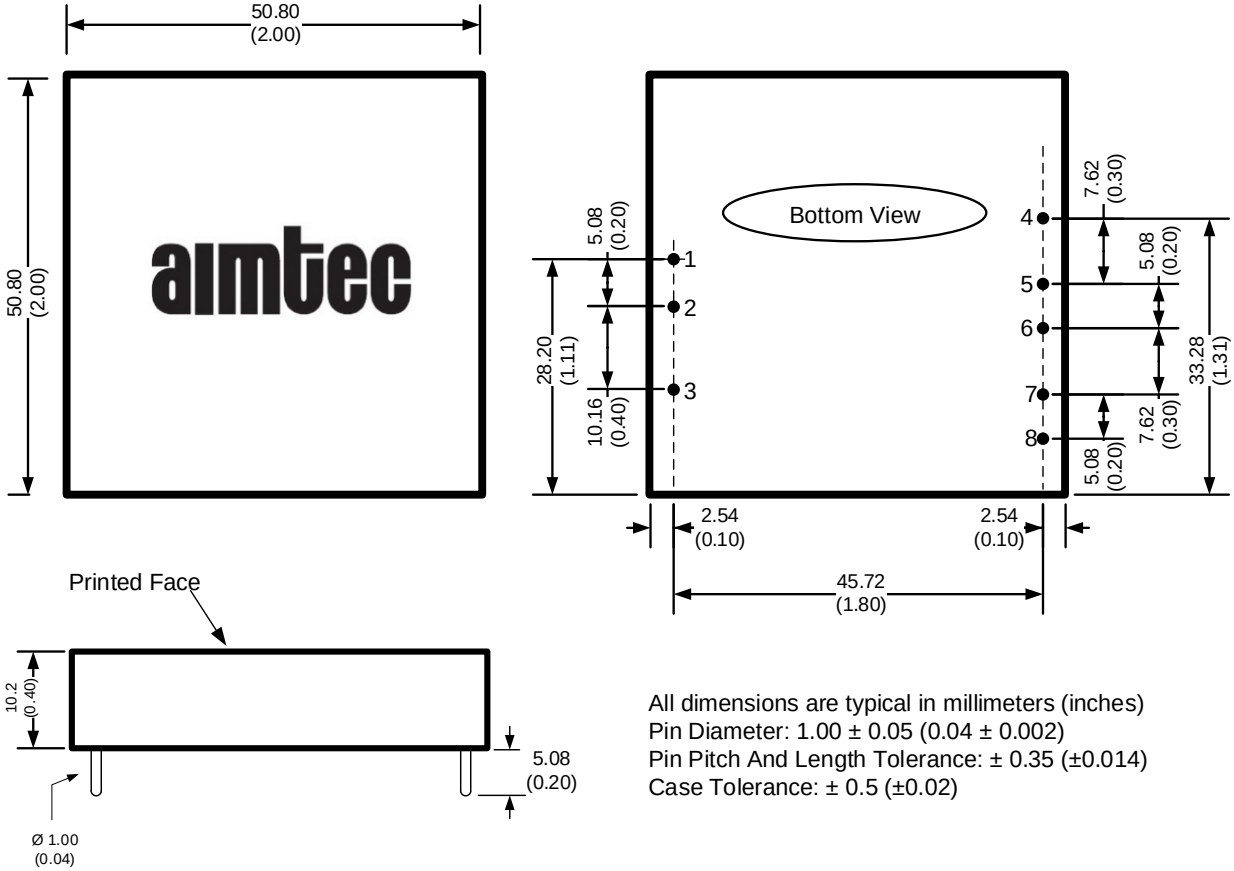
Standards	
Safety	Design to meet IEC/EN/UL 60950, 62368
	EN55032, Class A
	IEC61000-4-2 Perf. Criteria A
	IEC61000-4-3 Perf. Criteria A
	IEC61000-4-4 Perf. Criteria A (external 220uF/100V cap required)
	IEC61000-4-5 Perf. Criteria A (external 220uF/100V cap required)
	IEC61000-4-6 Perf. Criteria A
	IEC61000-4-8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

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

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

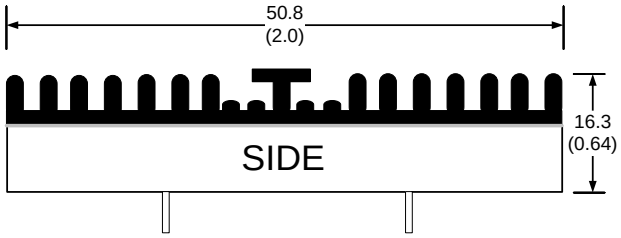
Dimensions



All dimensions are typical in millimeters (inches)
Pin Diameter: 1.00 ± 0.05 (0.04 ± 0.002)
Pin Pitch And Length Tolerance: ± 0.35 (±0.014)
Case Tolerance: ± 0.5 (±0.02)

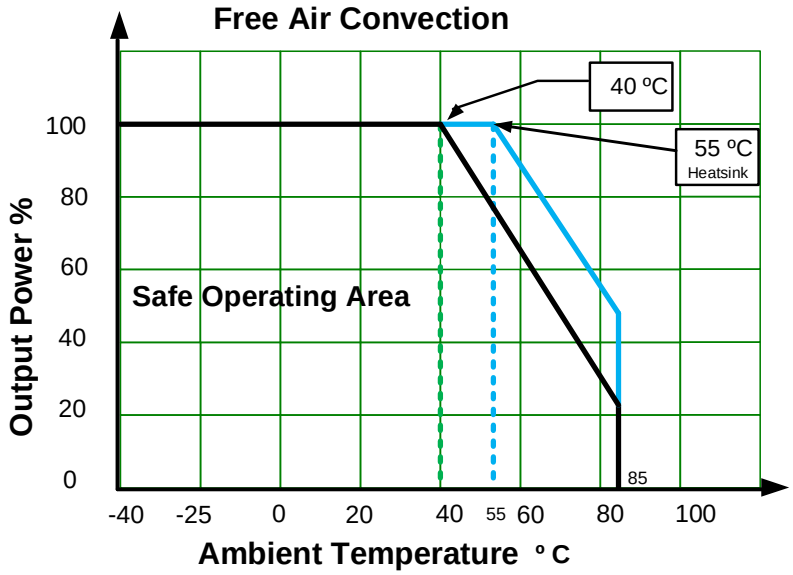
Dimensions with Optional Heatsink





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 (70g).

Derating



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

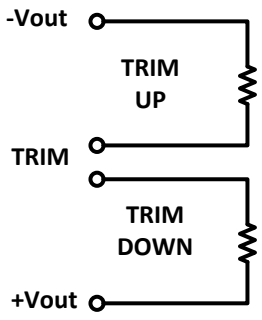
Trimming

AM60U-xx03SZ

% Trim	Trim-up KΩ	Trim-down KΩ
1	544.6	315.9
2	184.0	172.3
3	103.3	112.5
4	67.7	79.8
5	47.7	59.2
6	34.8	44.9
7	25.9	34.5
8	19.3	26.6
9	14.2	20.4
10	10.3	15.3

AM60U-xx05SZ

% Trim	Trim-up KΩ	Trim-down KΩ
1	244.5	230.6
2	113.8	106.2
3	70.6	64.3
4	49.1	43.3
5	36.3	30.6
6	27.7	22.2
7	21.6	16.2
8	17.0	11.7
9	13.4	8.1
10	10.6	5.3



AM60U-xx12SZ

% Trim	Trim-up KΩ	Trim-down KΩ
1	371.4	327.4
2	183.6	142.1
3	117.6	83.9
4	83.9	55.5
5	63.5	38.6
6	49.8	27.4
7	39.9	19.5
8	32.5	13.5
9	26.7	8.9
10	22.1	5.3

AM60U-xx15SZ

% Trim	Trim-up KΩ	Trim-down KΩ
1	347.3	433.8
2	178.5	174.9
3	115.2	100.9
4	82.1	65.9
5	61.7	45.5
6	47.9	32.1
7	37.9	22.6
8	30.3	15.6
9	24.4	10.2
10	19.7	5.8

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.