



**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

**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)		75	mV p-p
	20MHz Bandwidth (12 & 15V)		100	
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	1.54		% / °C
	Above 55 °C, with heatsink	2.0		
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

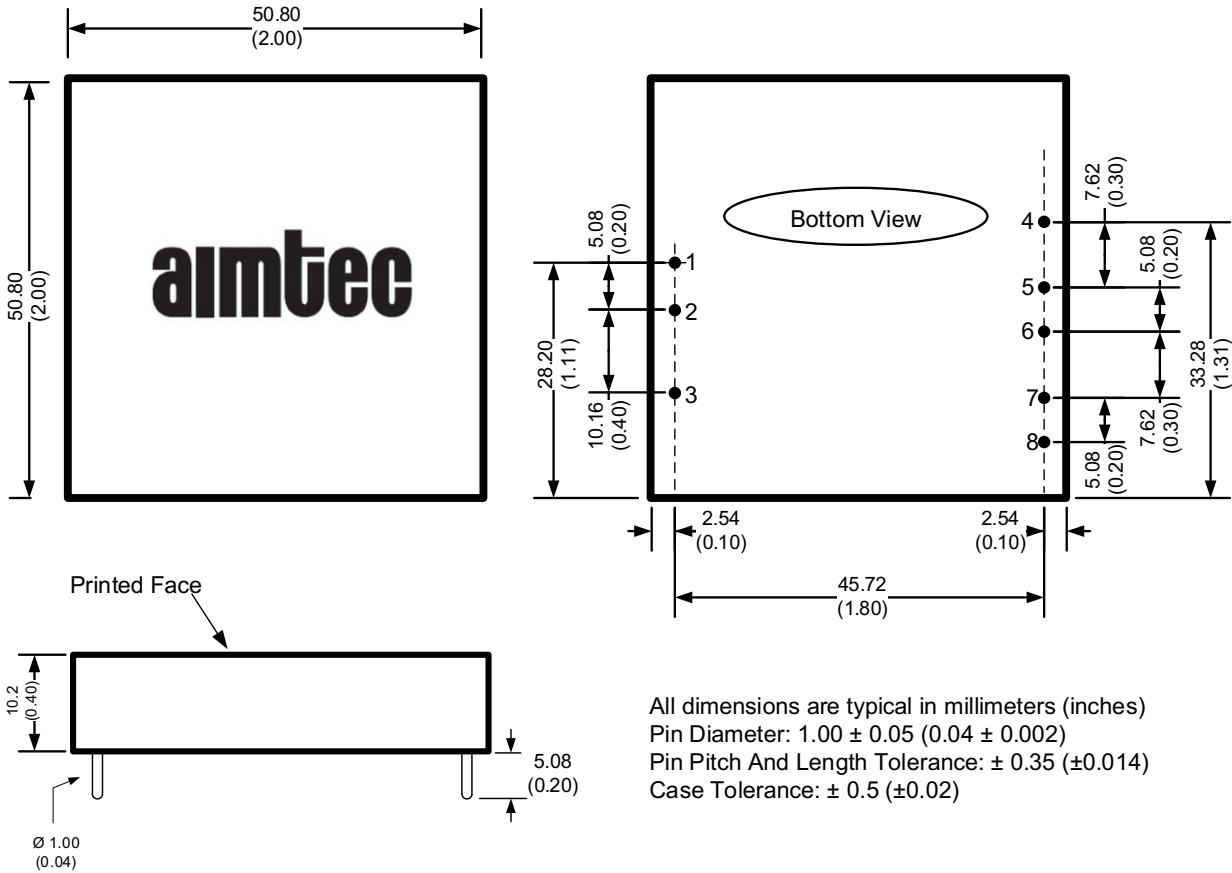
Standards	
Safety	Design to meet IEC/EN/UL 60950, 62368
	EN55032, Class A
	IEC61000-4-2 Perf. Criteria A
	IEC61000-4-3 Perf. Criteria A
	IEC61000-4-4 Perf. Criteria A (external 220uF/100V cap required)
	IEC61000-4-5 Perf. Criteria A (external 220uF/100V cap required)
	IEC61000-4-6 Perf. Criteria A
	IEC61000-4-8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

## Pin Out Specifications

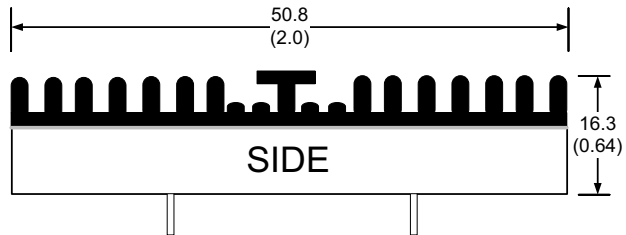
Pin	Single
1	+V Input
2	-V Input
3	On/Off Control
4	-Sense
5	+Sense
6	+V Output
7	-V Output
8	Trim

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

**Dimensions**

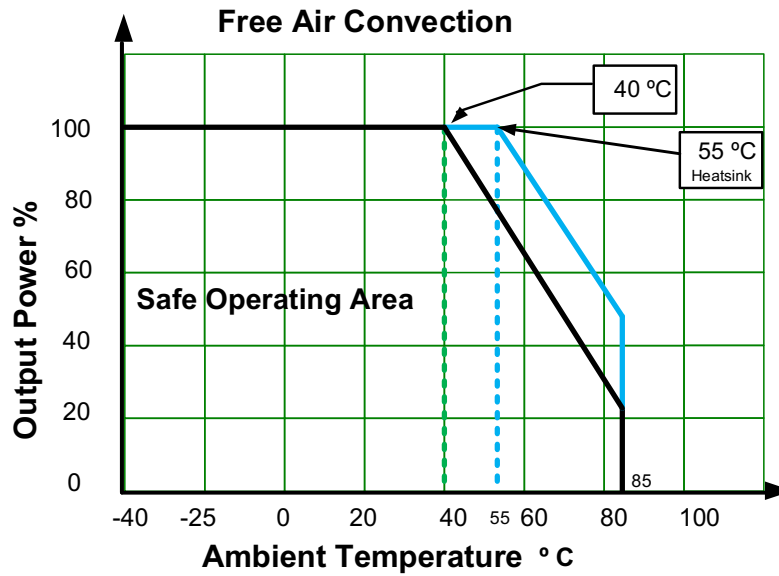


**Dimensions with Optional Heatsink**



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 (70g).

## Derating



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

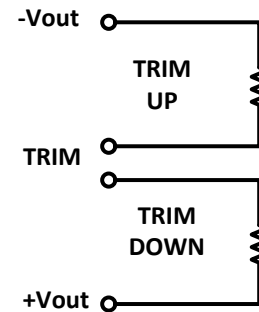
## Trimming

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



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