

Series AMEL5-JZ

5 Watt | AC-DC / DC-DC Converter



FEATURES:

- I/O Isolation 4000VAC
- Operating Temp: -25 °C to +70 °C
- Input: 85-305VAC, 47-440Hz, or 100-430VDC
- Over current, Over Voltage Protection
- High efficiency up to 83%
- No load consumption ≤ 0.3W
- Ultra-small package
- Short Circuit Protection

Models Single output



Model	Input Voltage (VAC/Hz)	Input Voltage (VDC)	Output Voltage (V)	Output Current max (A)	Maximum capacitive Load (μF)	Efficiency (%)
						230 VAC
AMEL5-3.3SJZ	85-305/47-440	100-430	3.3	1.25	4000	74
AMEL5-5SJZ	85-305/47-440	100-430	5	1	4000	78
AMEL5-9SJZ	85-305/47-440	100-430	9	0.55	1000	78
AMEL5-12SJZ	85-305/47-440	100-430	12	0.42	820	80
AMEL5-15SJZ	85-305/47-440	100-430	15	0.333	820	82
AMEL5-24SJZ	85-305/47-440	100-430	24	0.23	330	83

Note: Optional mounting plate version can be ordered by adding “-ST” suffix to part number (ex. AMEL5-5SJZ-ST).

Input Specifications

Parameters	Conditions	Typical	Maximum	Units
Current (full load)	115 VAC		120	mA
	230 VAC		70	mA
Inrush current <2ms (cold start)	115 VAC	10		A
	230 VAC	20		A
Leakage current			0.2	mA
External fuse	Recommended slow blow type	1		A
Input Dissipation (No Load)	No load (110/230VAC)		0.3	W

Output Specifications

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy	3.3V output Others	±3 ±2		%
Line regulation		±0.5		%
Load regulation	10-100% load	±1		%
Ripple & Noise *	20MHz Bandwidth, 3.3 / 5V models 20MHz Bandwidth, others	60 50	120 100	mV p-p
Hold-up time (minimum)	115VAC 230VAC	12 80		ms

Isolation Specifications

Parameters	Conditions	Typical	Rated	Units
Tested I/O voltage	60 sec	4000		VAC
Isolation Resistance		>1000		MΩ

General Specifications

Parameters	Conditions	Typical	Maximum	Units
Switching frequency		140		KHz
Protection class		Class II		
Over Current protection	Auto recovery	≥110		% of Iout
Over voltage protection		Zener diode clamp		
Short circuit protection		Continuous, Auto recovery		
Operating temperature	See derating curve	-25 to 70°C		°C
Storage temperature		-25 to +105		°C

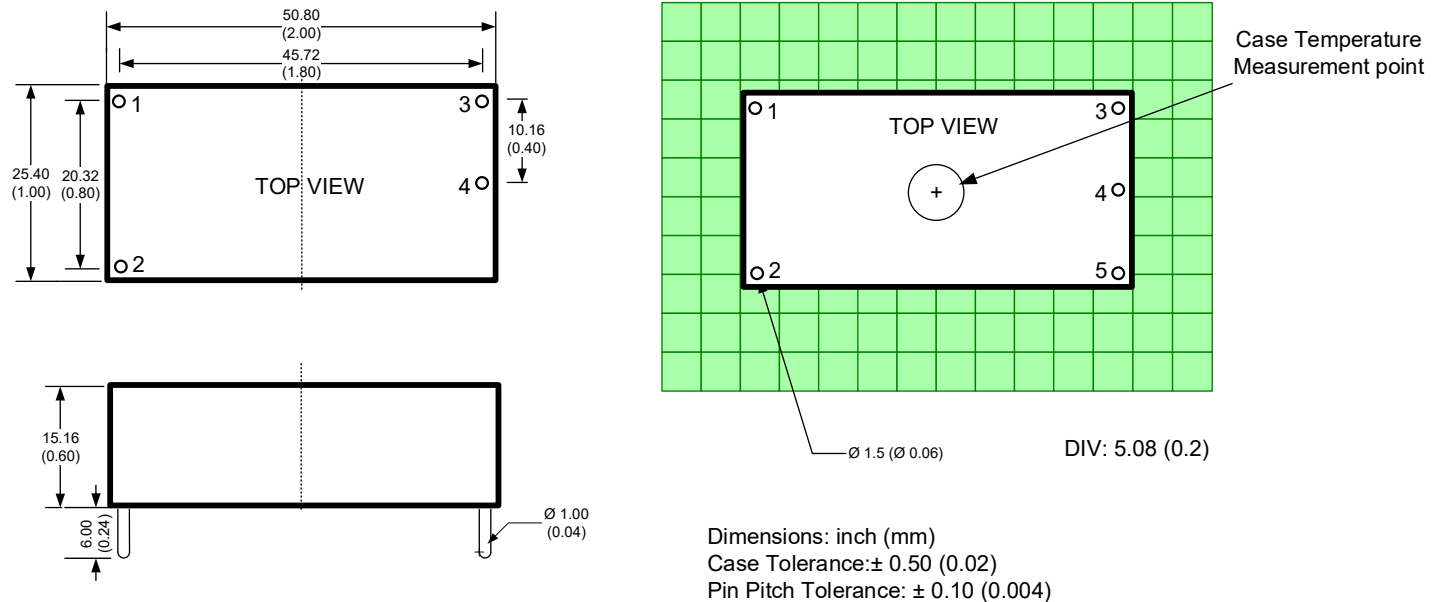
Maximum Case temperature			100	°C
Temperature coefficient		0.02		% / °C
Cooling	Free air convection			
Humidity	Non condensing		95	% RH
Case material	Plastic (flammability to UL 94V-0)			
Weight		32		g
Dimensions (L x W x H)	2.0 x 1.0 x 0.6 inches	50.80 x 25.40 x 15.16mm		
MTBF	> 300,000 hrs (MIL-HDBK -217F, t=+25°C)/Full Load			

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.

Safety Specifications

Parameters		
Agency approvals	cULus, CE	
Standards	Information technology Equipment	IEC/EN/UL 60950-1
	EMI - Conducted and radiated emission	EN55022, class B
	Electrostatic Discharge Immunity	IEC 61000-4-2 Level 3
	RF, Electromagnetic Field Immunity	IEC 61000-4-3 Level 3
	Electrical Fast Transient/Burst Immunity	IEC 61000-4-4 Level 3, Level 4 with recommended EMC circuit
	Surge Immunity	IEC 61000-4-5 Level 3, Level 4 with recommended EMC circuit
	RF, Conducted Disturbance Immunity	IEC 61000-4-6 Level 3
	Power frequency Magnetic Field Immunity	IEC 61000-4-8 Level 3
	Voltage dips, Short Interruptions Immunity	IEC 61000-4-11, Class 2

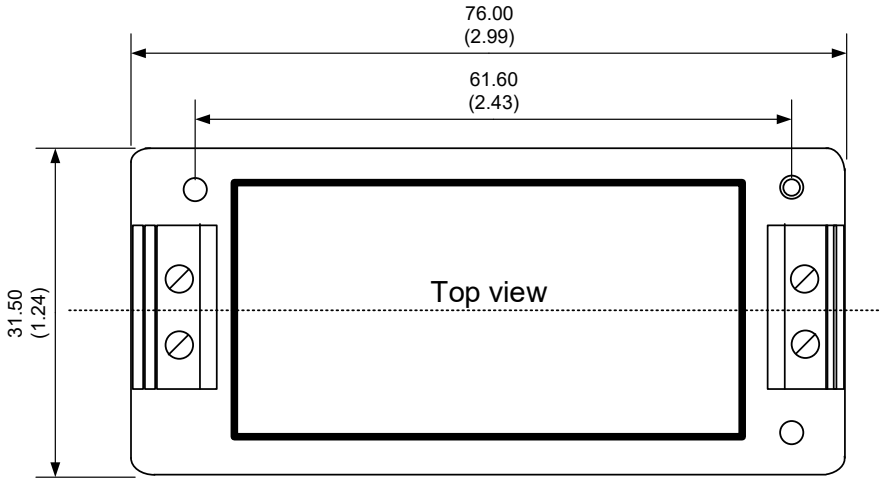
Dimensions



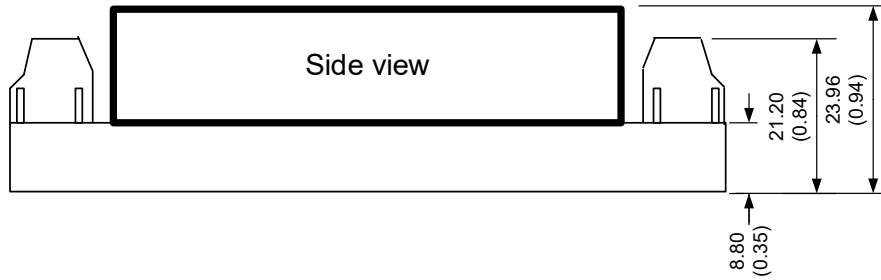
Pin Out Specifications

Pin	Single
1	AC Input (N)
2	AC Input (L)
3	+V Output
4	-V Output

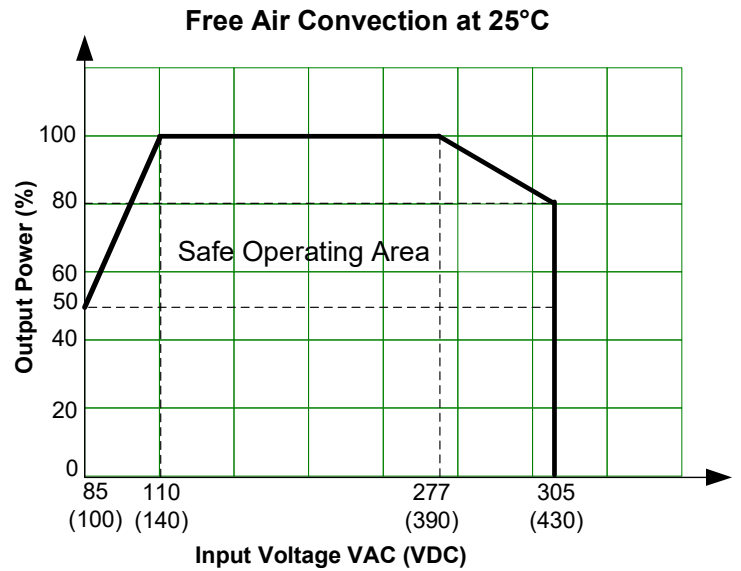
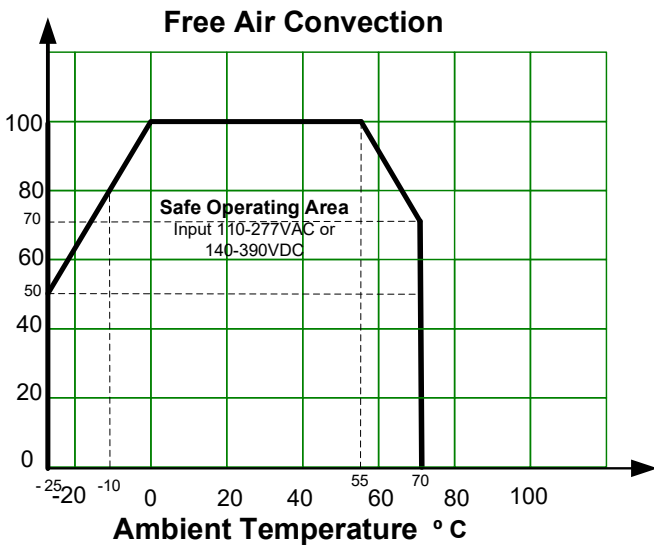
Dimensions of Optional ST Mounting Plate Version



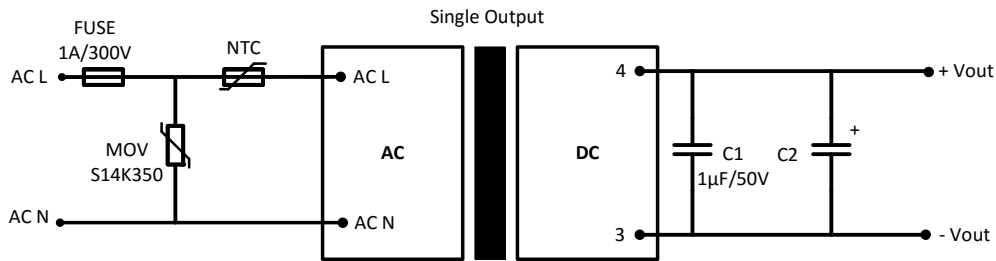
Dimensions: mm (inch)
Case Tolerance: ± 0.50 (0.02)
Wire gauge: 24-12AWG



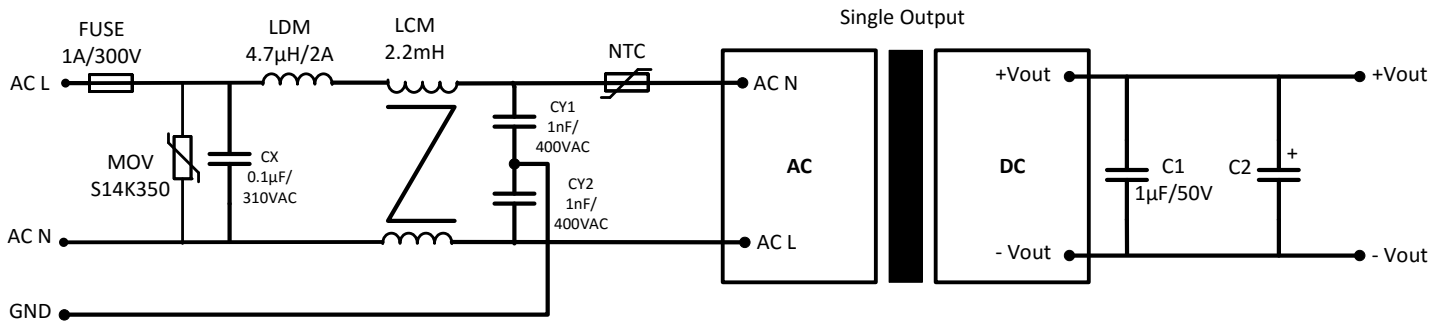
Derating



Typical application circuit



EMC recommended circuit



Model	C2
3.3 & 5 Vout	220 µF / 35V
9, 12 & 15 Vout	100 µF / 35V
24 Vout	47 µF / 35V

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.