# Series AMEL5-JZ

## 5 Watt | AC-DC / DC-DC Converter

Picture coming soon

### 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

RoHS

## 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 |

## 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<br>Others | ±3<br>±2 | | % |
| Line regulation | | ±0.5 | | % |
| Load regulation | 10-100% load | ±1 | | % |
| Ripple & Noise * | 20MHz Bandwidth, 3.3 / 5V models<br>20MHz Bandwidth, others | 60<br>50 | 120<br>100 | mV p-p |
| Hold-up time (minimum) | 115VAC<br>230VAC | 12<br>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 |

## General Specifications (continued)

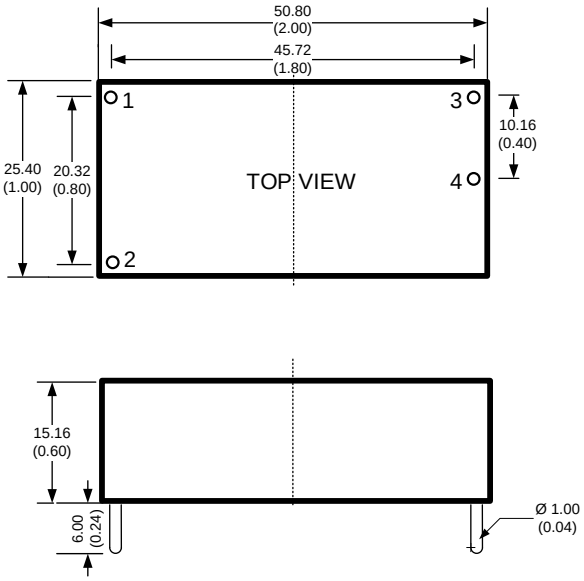
| Parameters | Conditions | Typical | Maximum | Units |
|---|---|---|---|---|
| Maximum Case temperature | | | 100 | °C |
| Temperature coefficient | | 0.02 | | % /°C |
| Cooling | Free air convection | | | |
| Humidity | Non condensing | | 95 | % RH |
| Case material | Plastic (flammability to UL 94V-0) | | | |
| 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 | | | |

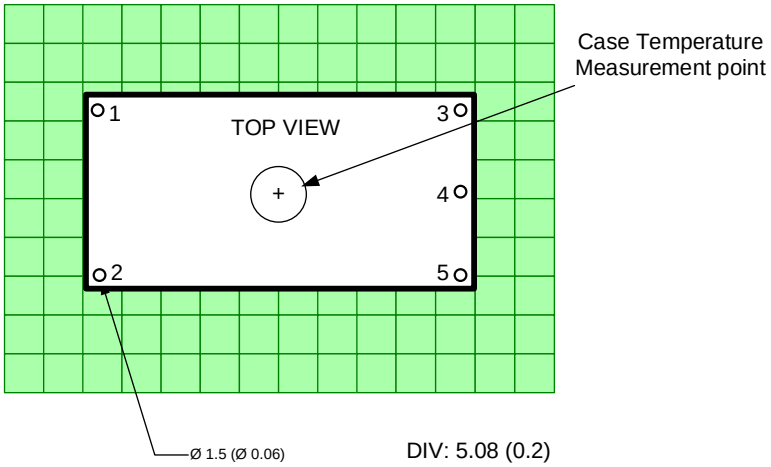
NOTE: All specifications in this datasheet are measured at an ambient temperature of 25°C, humidity<75%, nominal input voltage and at rated output load unless otherwise specified.

## Safety Specifications

| Parameters | | |
|---|---|---|
| Agency approvals | cULus, CE pending | |
| 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



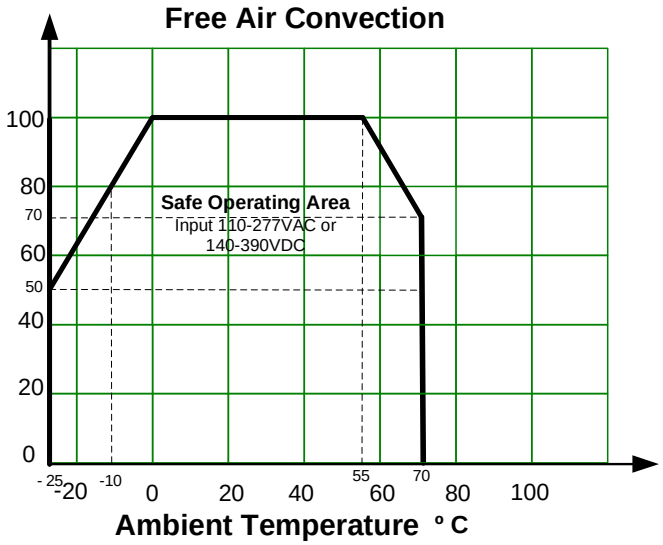



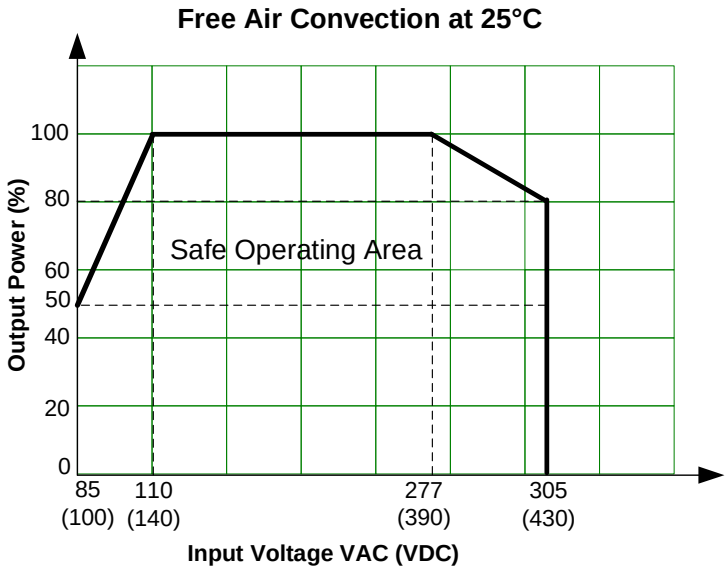

Dimensions: inch (mm)
Case Tolerance:± 0.50 (0.02)
Pin Pitch Tolerance: ± 0.10 (0.004)

## Pin Out Specifications

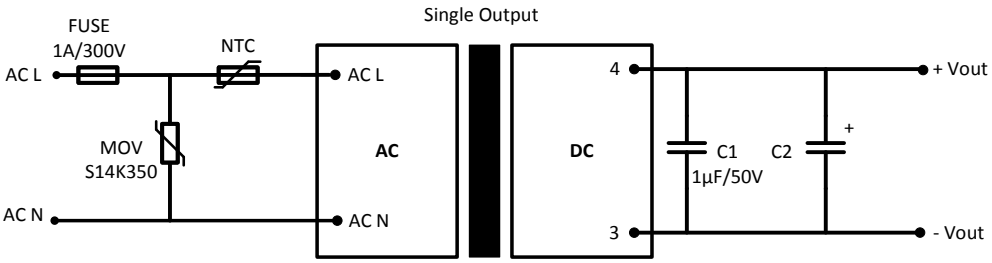
| Pin | Single |
|---|---|
| 1 | AC Input (N) |
| 2 | AC Input (L) |
| 3 | +V Output |
| 4 | -V Output |

## Derating

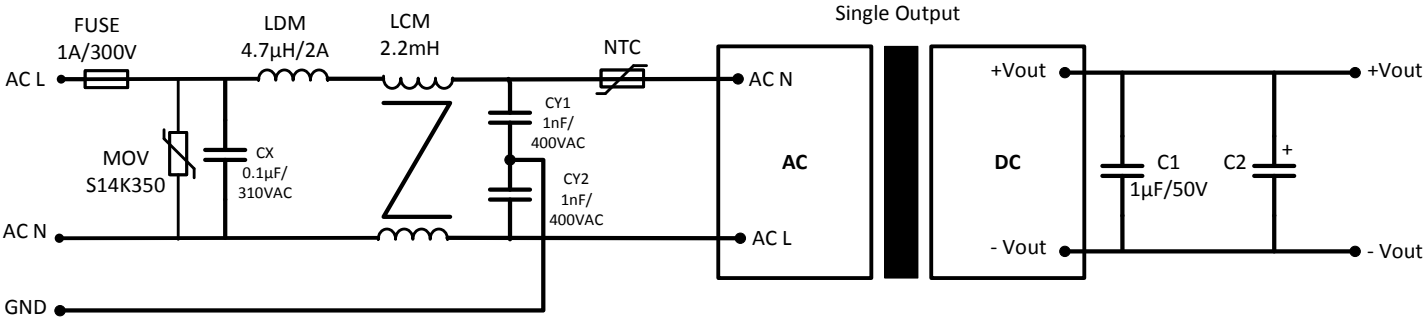



## Typical application circuit




## 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.