

Series AMEL12-CJZ

12 Watt | AC-DC / DC-DC Converter



FEATURES:

- I/O Isolation 4000VAC
- Operating Temp: -25°C to +70°C
- Over current, Over Voltage Protection
- Input: 85-264VAC, 47-440Hz, or 100-370VDC
- Low no load consumption $\leq 0.3W$
- Continuous Short Circuit Protection
- Up to 83% efficiency
- Low ripple and noise

Models Single output



| Model | Input Voltage (VAC/Hz) | Input Voltage (VDC) | Max Output wattage (W) | Output Voltage (V) | Output Current max (A) | Maximum capacitive load (μF) | Efficiency (%) |
|----------------|------------------------|---------------------|------------------------|--------------------|------------------------|-------------------------------------|----------------|
| AMEL12-3.3SCJZ | 85-264/47-440 | 100-370 | 7.9 | 3.3 | 2.4 | 10,000 | 74 |
| AMEL12-5SCJZ | 85-264/47-440 | 100-370 | 12 | 5 | 2.4 | 10,000 | 78 |
| AMEL12-12SCJZ | 85-264/47-440 | 100-370 | 12 | 12 | 1 | 5,400 | 82 |
| AMEL12-15SCJZ | 85-264/47-440 | 100-370 | 12 | 15 | 0.8 | 2,700 | 82 |
| AMEL12-24SCJZ | 85-264/47-440 | 100-370 | 12 | 24 | 0.5 | 1,500 | 83 |

*Output power must not exceed the listed values.

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 | Conditions | Typical | Maximum | Units |
|-----------------------------------|----------------|---------|------------|-------|
| Current | 115VAC | 0.28 | | A |
| | 230VAC | 0.19 | | A |
| Inrush current < 2ms (cold start) | 115VAC | 10 | | A |
| | 230VAC | 20 | | A |
| Leakage current | | | 0.25 | mA |
| External fuse | slow blow type | 3.15 | | A |
| Input dissipation | No Load | | ≤ 0.3 | W |

Output Specifications

| Parameters | Conditions | Typical | Maximum | Units |
|------------------|-----------------|-----------|---------|--------|
| Voltage accuracy | 3.3V output | ± 3 | | % |
| | Others | ± 2 | | % |
| Line regulation | Full load | ± 0.5 | | % |
| Load regulation | 10-100% load | ± 1 | | % |
| Ripple & Noise | 20MHz bandwidth | | 100 | mV p-p |
| Hold up time | 115VAC | 24 | | ms |
| | 230VAC | 120 | | ms |

Isolation Specifications

| Parameters | Conditions | Typical | Rated | Units |
|----------------------|------------|---------|-------|------------|
| Tested I/O voltage | 60 sec | | 4000 | VAC |
| Isolation resistance | | >1000 | | M Ω |

General Specifications

| Parameters | Conditions | Typical | Maximum | Units |
|--------------------------|--------------------|-------------------|---------|-----------|
| Switching frequency | 100% load | 100 | | KHz |
| Protection class | | Class II | | |
| Over current protection | Auto recovery | ≥ 110 | | % of Iout |
| Over voltage protection | | Zener Diode Clamp | | |
| Short circuit protection | | Continuous | | |
| Short circuit restart | | Auto recovery | | |
| Operating temperature | See derating table | -25 to +70 | | °C |
| Maximum case temperature | | | 100 | °C |

General Specifications (continued)

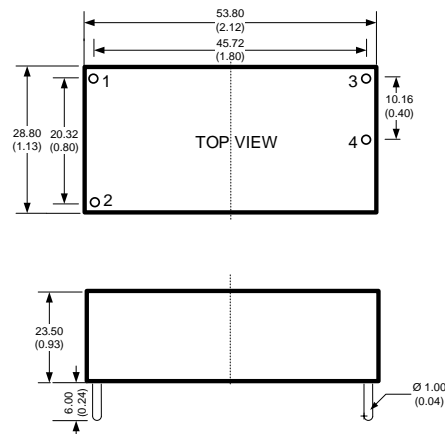
| Parameters | Conditions | Typical | Maximum | Units |
|-------------------------|---|---|---------|--------|
| Storage temperature | | -25 to +105 | | °C |
| Temperature coefficient | | ±0.02 | | % / °C |
| Cooling | | Free air convection | | |
| Humidity | Non condensing | | 95 | % RH |
| Case material | Heat resistant black Plastic (flammability to UL 94V-0) | | | |
| Weight | PCB mountable model: | 60 | | g |
| Dimensions (L x W x H) | PCB mountable model: | 2.11 x 1.13 x 0.92 inches (53.80 x 28.80 x 23.50mm) | | |
| MTBF | > 300 000 hrs (MIL-HDBK -217F, t _a =+25°C)/Full Load | | | |

Safety Specifications

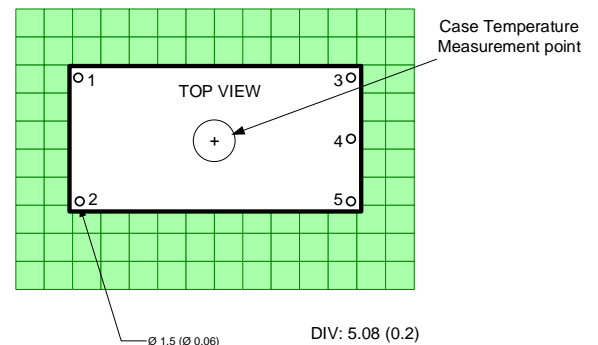
| Parameters | | |
|------------------|--|------------------------|
| Agency approvals | cULus, CE | |
| Standards | Information technology Equipment | IEC/EN/UL 60950-1 |
| | EMI - Conducted and radiated emission | EN55022, class B |
| | Electrostatic Discharge Immunity | IEC 61000-4-2 Level 3 |
| | RF, Electromagnetic Field Immunity | IEC 61000-4-3 Level 3 |
| | Electrical Fast Transient/Burst Immunity | IEC 61000-4-4 Level 4 |
| | Surge Immunity | IEC 61000-4-5 Level 3 |
| | 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 |

Pin Out Specifications

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

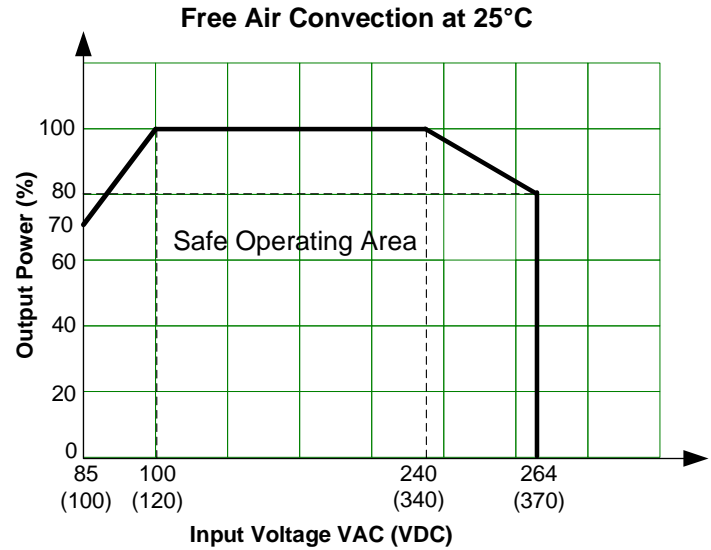
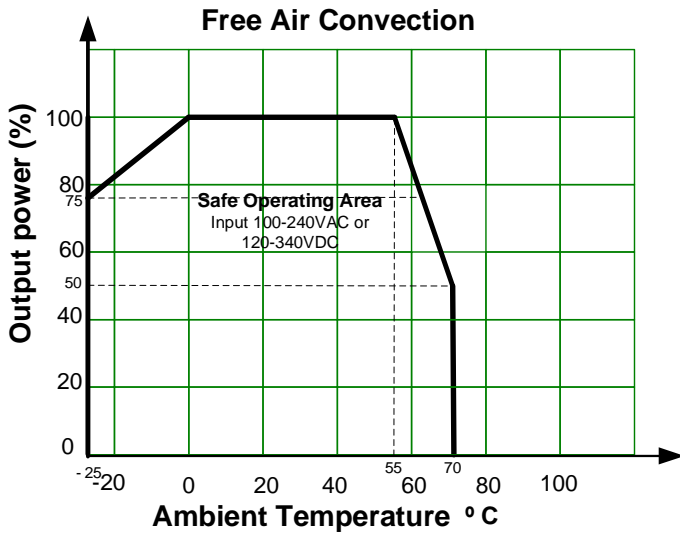


Dimensions

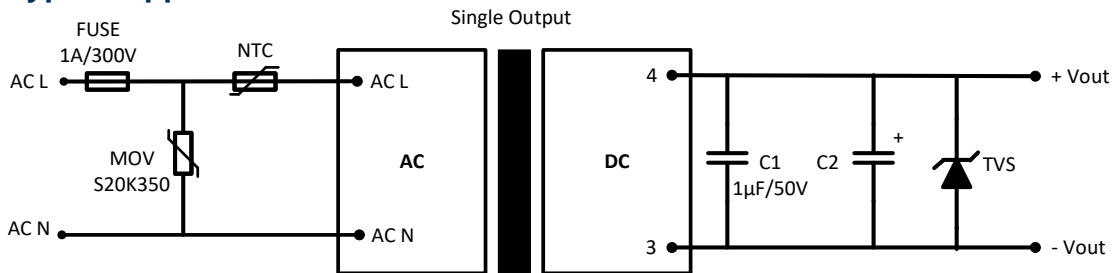


Dimensions mm (inch)
Case Tolerance $\pm 0.50 (\pm 0.02)$
Pin Diameter $1.0 \pm 0.10 (0.04 \pm 0.004)$
Pin Pitch Tolerance $\pm 0.35 (\pm 0.014)$

Derating



Typical application circuit



| Model | C2 | TVS |
|--------------|--------------|-----|
| 3.3 & 5 Vout | 220 µF / 10V | 7V |
| 12 & 15 Vout | 120 µF / 25V | 20V |
| 24 Vout | 68 µF / 35V | 30V |

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.