

Series AMEL10-MJZ

10 Watt | AC-DC / DC-DC Converter



FEATURES:

- I/O Isolation 4000VAC
- Operating Temp: -25°C to +70°C
- Over current, Over Voltage
- Input: 85-264VAC, 47-440Hz, or 100-370VDC
- Low no load consumption $\leq 0.5W$
- Continuous Short Circuit Protection
- Up to 83% efficiency



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 (%) |
|----------------|------------------------|---------------------|------------------------|--------------------|------------------------|-------------------------------------|----------------|
| AMEL10-3.3SMJZ | 85-264/47-440 | 100-370 | 6.6 | 3.3 | 2.00 | 15,000 | 71 |
| AMEL10-5SMJZ | 85-264/47-440 | 100-370 | 10 | 5 | 2.00 | 12,000 | 76 |
| AMEL10-9SMJZ | 85-264/47-440 | 100-370 | 10 | 9 | 1.10 | 6,000 | 80 |
| AMEL10-12SMJZ | 85-264/47-440 | 100-370 | 10 | 12 | 0.90 | 2,000 | 81 |
| AMEL10-15SMJZ | 85-264/47-440 | 100-370 | 10 | 15 | 0.70 | 1,500 | 82 |
| AMEL10-24SMJZ | 85-264/47-440 | 100-370 | 10 | 24 | 0.45 | 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 | 0.23 | | A |
| | 230VAC | 0.15 | | A |
| Inrush current < 2ms (cold start) | 115VAC | | 10 | A |
| | 230VAC | | 20 | A |
| Leakage current | | | 0.25 | mA |
| External fuse | slow blow type | 2 | | A |
| Input dissipation | No Load | | ≤ 0.5 | 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 | 50 | 100 | mV p-p |
| Hold up time | 230VAC | 80 | | 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 | 65 | | KHz |
| Protection class | | Class II | | |
| Over current protection | Auto recovery | 110 - 200 | | % 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 |

General Specifications (continued)

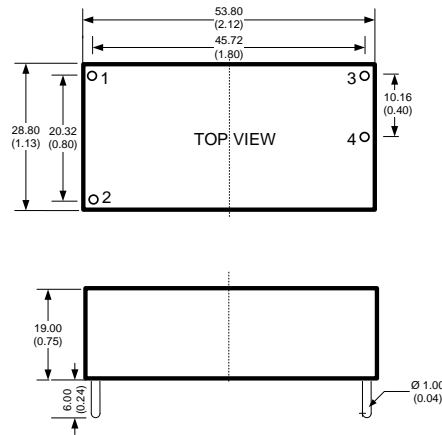
| Parameters | Conditions | Typical | Maximum | Units |
|--------------------------|---|--|---------|--------|
| Maximum case temperature | | | 100 | °C |
| Storage temperature | | -25 to +105 | | °C |
| Temperature coefficient | | ±0.02 | | % / °C |
| Cooling | | Free air convection | | |
| Humidity | Non condensing | | 95 | % RH |
| Case material | Heat resistant black Plastic (flammability to UL 94V-0) | | | |
| Weight | PCB mountable models | 50 | | g |
| Dimensions (L x W x H) | PCB mountable models | 2.11 x 1.13 x 0.748 inches (53.80 x 28.80 x 19.00mm) | | |
| MTBF | > 300 000 hrs (MIL-HDBK -217F, t=+25°C)/Full Load | | | |

Safety Specifications

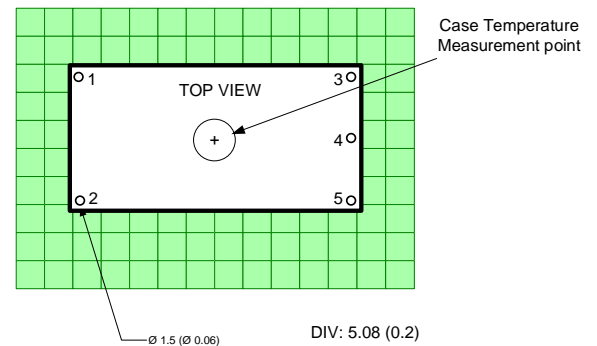
| Parameters | | |
|------------------|--|---|
| Agency approvals | cULus, CE | |
| Standards | Medical Electrical Equipment | Meets IEC/EN/UL 60601-1, 2 x MOPP |
| | Information technology Equipment | IEC/EN/UL 60950-1 |
| | EMI - Conducted and radiated emission | EN55011, class A |
| | Electrostatic 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 |
| | Surge Immunity | IEC 61000-4-5 Level 2, with application 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 |

Pin Out Specifications

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

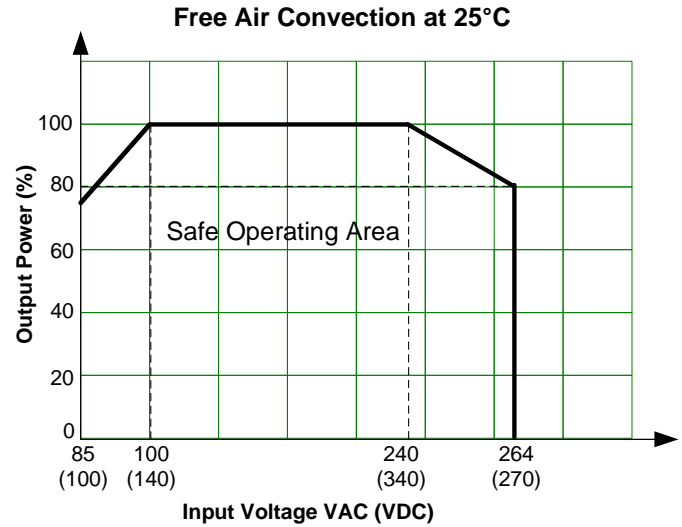
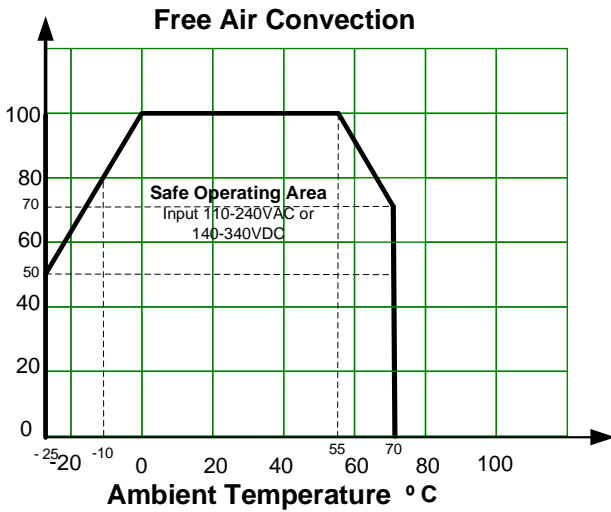


Dimensions

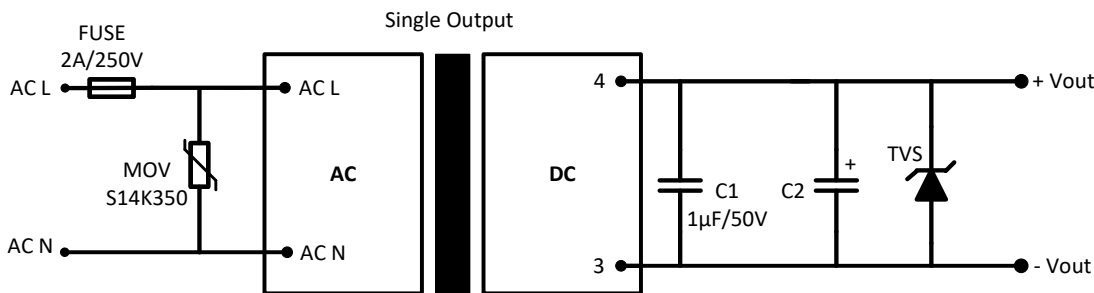


Dimensions mm (inch)
Case Tolerance ±0.50 (±0.02)
Pin Diameter 1.0 ± 0.10 (0.04 ± 0.004)
Pin Pitch Tolerance ±0.35 (±0.014)

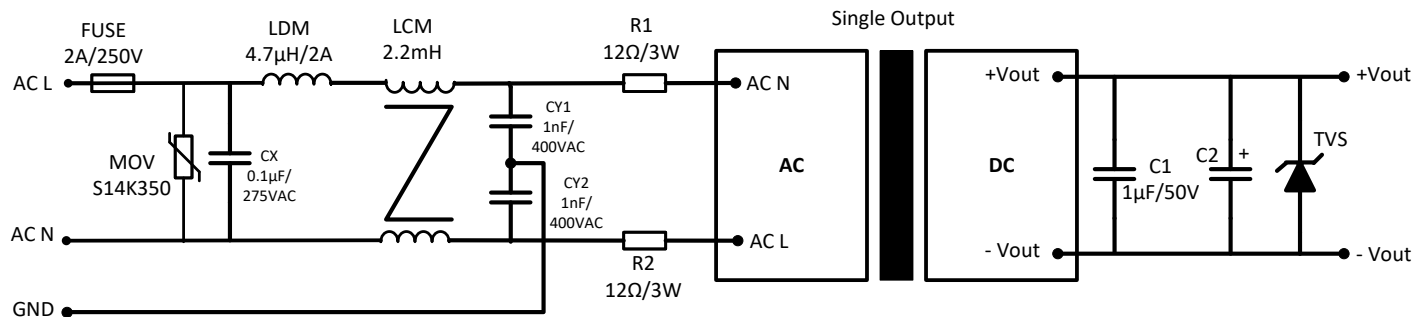
Derating



Typical application circuit



Class B compliance recommended circuit



| Model | C2 | TVS |
|--------------|--------------|-----|
| 3.3 & 5 Vout | 220 µF / 10V | 7V |
| 9Vout | 120 µF / 25V | 12V |
| 12 & 15 Vout | 120 µF / 25V | 20V |
| 24 Vout | 68 µF / 35V | 30V |

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