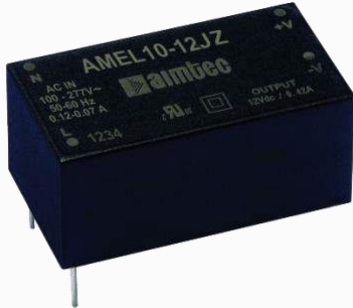


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**AMEL10-JZ**



Encapsulated

The new AMEL10-JZ is a brand-new AC/DC converter that offers much greater cost effectiveness due to material normalization and production automation also leading to improved reliability and performance. Offering a commercial input voltage range of 85-264VAC and an output voltage range from 3.3-24V, this series will offer many benefits to your new system design.

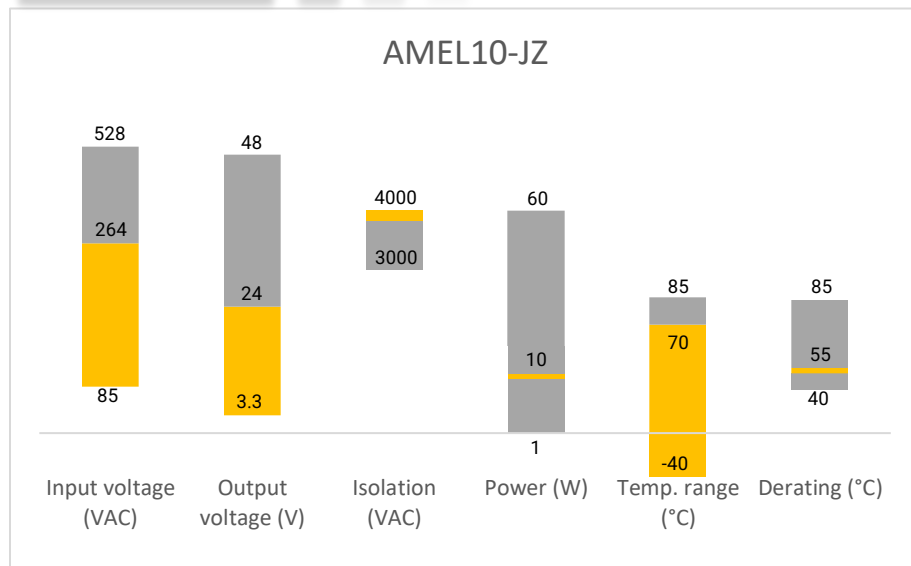
This new series offers great operating temperatures, from -40°C to 70°C with full power up to 55°C. It also features an isolation of 4000VAC for improved reliability and system safety. Furthermore, a higher MTBF of 300,000h, output short circuit protection (OSCP), output over-current protection (OCP) and an output over-voltage protection (OVP) come standard with the series.

The AMEL10-JZ is perfect for street lighting controls, grid power, LED, instrumentation, industrial controls, communication and civil applications.

**Features**

- Universal Input: 85 - 264VAC/100 - 370VDC
- Operating Temp: -40 °C to +70 °C
- High isolation voltage: 4000VAC
- Low ripple & noise, 50mV(p-p), typ.
- Output short circuit, over-current, over-voltage protection
- Regulated Output

**Summary**



**Training**



Product Training Video  
(click to open)



Press Release

Coming Soon!

Application Notes

**Applications**



Power Grid



Industrial



Telecom



Instrumentation

## Models & Specifications

| 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 @ 230VAC (%) |
| AMEL10-3.3SJZ | 85-264/47-63           | 100-370             | 6.6                    | 3.3                | 2.00                   | 26,400                       | 71                      |
| AMEL10-5SJZ   | 85-264/47-63           | 100-370             | 10                     | 5                  | 2.00                   | 9,440                        | 76                      |
| AMEL10-9SJZ   | 85-264/47-63           | 100-370             | 10                     | 9                  | 1.10                   | 3,600                        | 80                      |
| AMEL10-12SJZ  | 85-264/47-63           | 100-370             | 10                     | 12                 | 0.90                   | 2,000                        | 81                      |
| AMEL10-15SJZ  | 85-264/47-63           | 100-370             | 10                     | 15                 | 0.70                   | 1,170                        | 81                      |
| AMEL10-24SJZ  | 85-264/47-63           | 100-370             | 10                     | 24                 | 0.45                   | 370                          | 83                      |

| Input Specifications             |                |         |         |         |       |
|----------------------------------|----------------|---------|---------|---------|-------|
| Parameters                       | Conditions     | Minimum | Typical | Maximum | Units |
| Current                          | 115VAC         |         |         | 0.23    | A     |
|                                  | 230VAC         |         |         | 0.15    | A     |
| Inrush current <2ms (cold start) | 115VAC         |         | 15      |         | A     |
|                                  | 230VAC         |         | 30      |         | A     |
| External fuse                    | slow blow type | 2       |         |         | A     |

| Output Specifications |                 |         |         |        |
|-----------------------|-----------------|---------|---------|--------|
| Parameters            | Conditions      | Typical | Maximum | Units  |
| Voltage accuracy      | 3.3V output     | ±3      |         | %      |
| Line regulation       | Others          | ±2      |         | %      |
| Line regulation       | Full load       | ±0.5    |         | %      |
| Load regulation       | 0-100% load     | ±1      |         | %      |
| Ripple & Noise        | 20MHz bandwidth | 50      | 100     | mV p-p |
| Hold up time          | 230VAC          | 80      |         | ms     |

\*Ripple and Noise are measured at 20MHz bandwidth by using the referenced Application circuit.

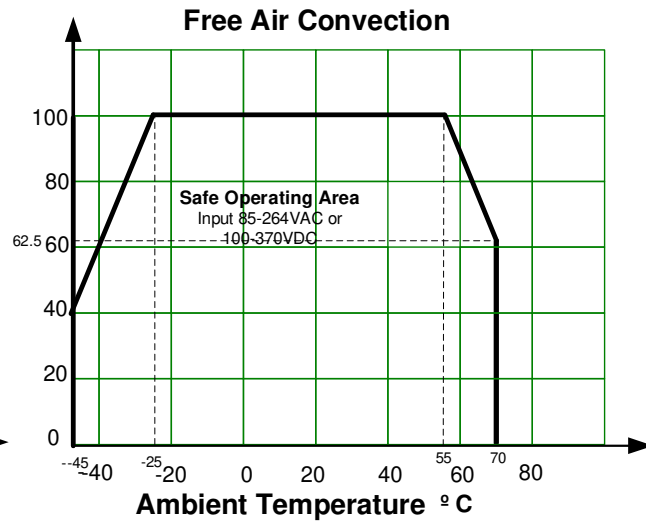
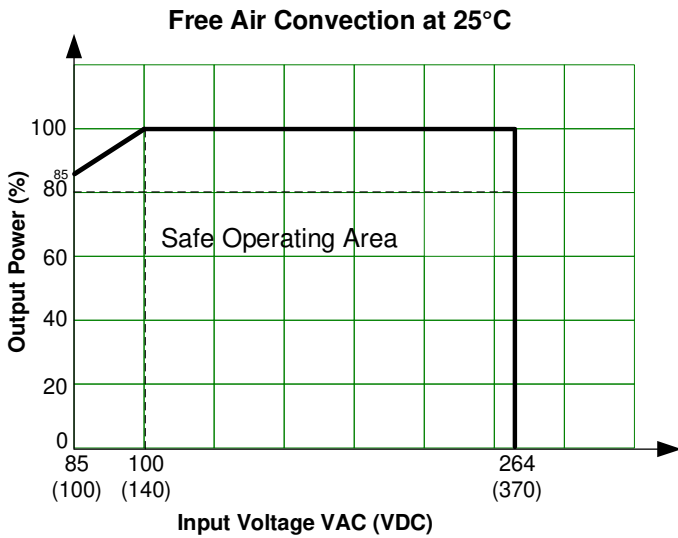
| Isolation Specifications |            |         |       |       |
|--------------------------|------------|---------|-------|-------|
| Parameters               | Conditions | Typical | Rated | Units |
| Tested I/O voltage       | 60 sec     |         | 4000  | VAC   |
| Isolation Resistance     |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

| General Specifications   |   |   |         |           |
|--------------------------|---|---|---------|-----------|
| Parameters               | Conditions  | Typical   | Maximum | Units     |
| Switching frequency      | 100% load   | 100   |         | KHz       |
| Protection class         | Class II  |   |         |           |
| Over Current protection  | Auto recovery   | 110-300   |         | % of Iout |
| Over voltage protection  | 3.3V/5V Vout  |   | ≤7.5    | VDC       |
|                          | 9V Vout   |   | ≤15     |           |
|                          | 12V/15V Vout  |   | ≤20     |           |
|                          | 24V Vout  |   | ≤30     |           |
| Short circuit protection | Continuous  |   |         |           |
| Short circuit restart    | Auto recovery   |   |         | °C        |
| Operating temperature    | See derating graph  | -40 to +70                                      |         | °C        |
| Maximum case temperature |   |   | 100     | °C        |
| Storage temperature      |   | -40 to +105                                     |         | °C        |
| Lead temperature         | Wave soldering  | 260 ± 5°C; time : 5 - 10s                       |         |           |
|                          | Hand soldering  | 360 ± 10°C; time : 3 - 5s                       |         |           |
| Temperature coefficient  |   | ±0.02   |         | % / °C    |
| Cooling                  | Free air convection   |   |         |           |
| Humidity                 | Non condensing  |   |         |           |
| Case material            | Heat resistant black Plastic (flammability to UL 94V-0)         |   |         |           |
| Weight                   | PCB mountable models  | 48  |         | g         |
| Dimensions (L x W x H)   | PCB mountable models  | 2.11 x 1.13 x 0.748 inches (53.8 x 28.8 x 19mm) |         |           |
| MTBF                     | > 300 000 hrs (MIL-HDBK -217F, t <sub>a</sub> =+25°C)/Full Load |   |         |           |

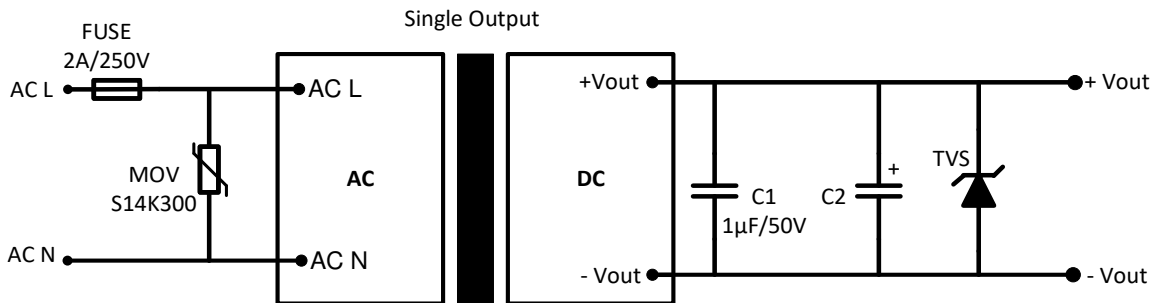
NOTE: All specifications in this datasheet are measured at an ambient temperature of 25°C, humidity < 75%, nominal input voltage and at rated output load unless otherwise specified.

| Safety Specifications                      |   |   |  |
|--|---|---|--|
| Parameters                                 |   |   |  |
| Agency approvals                           | cULus                                       |   |  |
| Standards                                  | Household & electrical appliances Equipment | Design to meet EN 60335   |  |
|  | Information technology Equipment            | UL 62368, UL 60950  |  |
|  | EMC - Conducted and radiated emission       | CISPR32 / EN55032, class B  |  |
|  | Electrostatic Discharge Immunity            | IEC 61000-4-2 Contact ±6KV / Air ±8KV, Criteria B                             |  |
|  | RF, Electromagnetic Field Immunity          | IEC 61000-4-3 10V/m, Criteria A   |  |
|  | Electrical Fast Transient/Burst Immunity    | IEC 61000-4-4 ±2KV, ±4KV with EMC recommended circuit, Criteria B             |  |
|  | Surge Immunity                              | IEC 61000-4-5 L-L ±1KV/L-G ±1KV, with typical application circuit, Criteria B |  |
|  |   | IEC 61000-4-5 L-L ±2KV/L-G ±4KV, with EMC recommended circuit, Criteria B     |  |
|  | RF, Conducted Disturbance Immunity          | IEC 61000-4-6 10Vr.m.s, Criteria A  |  |
| Voltage dips, Short Interruptions Immunity | IEC 61000-4-11 0%, 70%, Criteria B          |   |  |

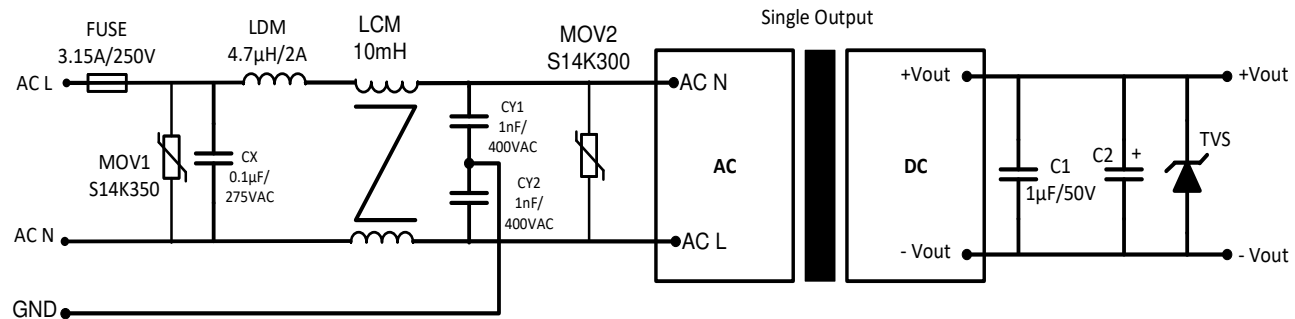
## Derating



## Typical Application Circuit

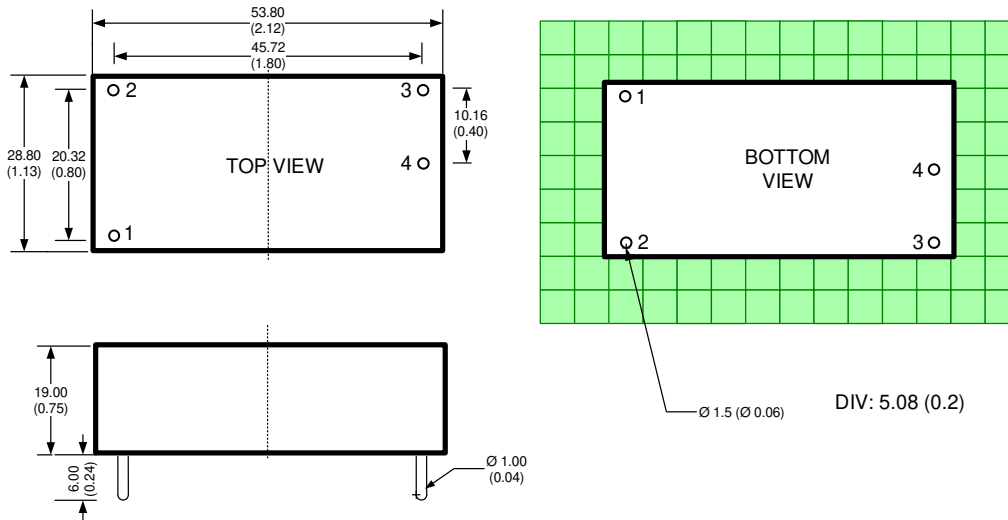


## EFT/Burst Immunity Recommended Circuit



| 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 |

## Dimensions



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

**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](http://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](http://www.aimtec.com).