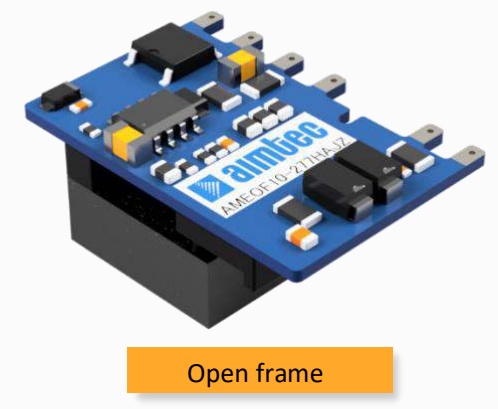


Click to  
**ORDER**  
samples

**AMEOFL10-277HAJZ**



Open frame

The AMEOFL10-277HAJZ series is one of Aimtec's highly efficient, green 10W AC-DC converter series. It features an ultra-wide input range accepting either AC or DC voltage, high efficiency, compact size in an open-frame, low power consumption and CLASS II reinforced insulation. A variety of EMC external circuits enable this series to meet the needs of multiple industries.

This 10W converter offers great operating temperatures, from -40°C to 85°C and also boasts an isolation of 3600VAC for improved reliability and system safety. Furthermore, a high MTBF of 1,000,000h, output short circuit protection (OSCP) and an output over-current protection (OCP) come standard with the series.

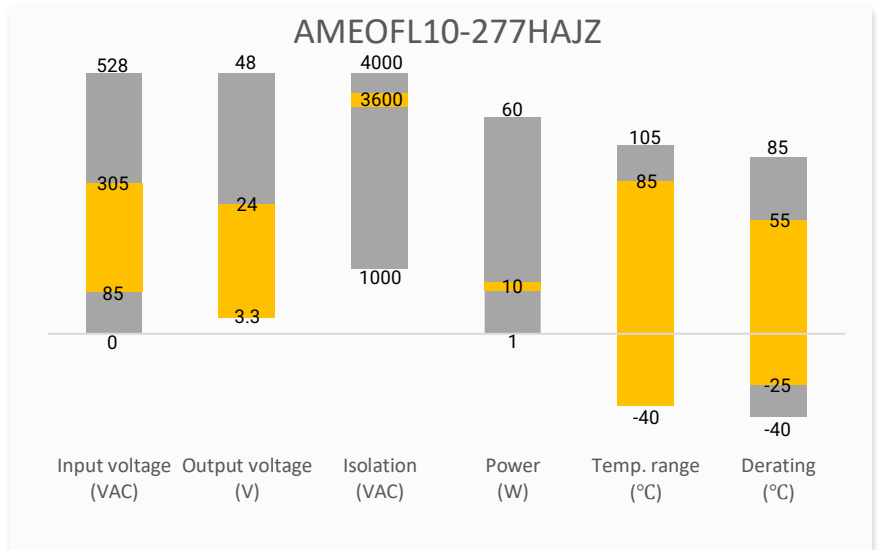
All models are suitable for industrial control, electric power, instrumentation and smart home applications.

**Features**



- Universal Input: 85 - 305VAC/90 - 430VDC
- Operating Temp: -40 °C to +85 °C
- High isolation voltage: 3600VAC
- Low ripple & noise, 150mV(p-p), max.
- Output short circuit, over-current
- Open frame package

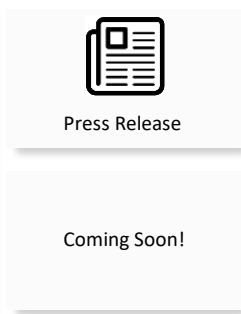
**Summary**



**Training**



Product Training Video  
(click to open)



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 (%) |
| AMEOFL10-3S277HAJZ   | 85~305/47~63           | 90~430              | 6.6                    | 3.3                | 2                      | 1500                         | 70                      |
| AMEOFL10-5S277HAJZ   | 85~305/47~63           | 90~430              | 10                     | 5                  | 2                      | 1500                         | 77                      |
| AMEOFL10-9S277HAJZ   | 85~305/47~63           | 90~430              | 10                     | 9                  | 1.1                    | 1000                         | 80                      |
| AMEOFL10-12S277HAJZ  | 85~305/47~63           | 90~430              | 10                     | 12                 | 0.83                   | 680                          | 83                      |
| AMEOFL10-15S277HAJZ  | 85~305/47~63           | 90~430              | 10                     | 15                 | 0.67                   | 470                          | 83                      |
| AMEOFL10-24S277HAJZ  | 85~305/47~63           | 90~430              | 10                     | 24                 | 0.42                   | 330                          | 84                      |
| AMEOFL10-3SL277HAJZ  | 85~305/47~63           | 90~430              | 6.6                    | 3.3                | 2                      | 1500                         | 70                      |
| AMEOFL10-5SL277HAJZ  | 85~305/47~63           | 90~430              | 10                     | 5                  | 2                      | 1500                         | 77                      |
| AMEOFL10-9SL277HAJZ  | 85~305/47~63           | 90~430              | 10                     | 9                  | 1.1                    | 1000                         | 80                      |
| AMEOFL10-12SL277HAJZ | 85~305/47~63           | 90~430              | 10                     | 12                 | 0.83                   | 680                          | 83                      |
| AMEOFL10-15SL277HAJZ | 85~305/47~63           | 90~430              | 10                     | 15                 | 0.67                   | 470                          | 83                      |
| AMEOFL10-24SL277HAJZ | 85~305/47~63           | 90~430              | 10                     | 24                 | 0.42                   | 330                          | 84                      |

| Input Specifications |                |         |         |       |
|----------------------|----------------|---------|---------|-------|
| Parameters           | Conditions     | Typical | Maximum | Units |
| Input current        | 115VAC         |         | 300     | mA    |
|                      | 230VAC         |         | 150     | mA    |
| Inrush current       | 115VAC         | 15      |         | A     |
|                      | 230VAC         | 30      |         | A     |
| External fuse        | Slow blow type | 1       |         | A     |

| Output Specifications |                                  |         |         |        |
|-----------------------|----------------------------------|---------|---------|--------|
| Parameters            | Conditions                       | Typical | Maximum | Units  |
| Voltage accuracy      | 10% - 100% load                  | ± 2.5   | ± 5     | %      |
| Line regulation       | Full load                        | ± 0.75  | ± 1.5   | %      |
| Load regulation       | 10% - 100% load                  | ± 1.5   | ± 3     | %      |
| Ripple & Noise        | 20MHz bandwidth, 10% - 100% load | 80      | 150     | mV p-p |

NOTE: Performance may not meet all the specifications when operating at <10% load.

| Isolation Specifications |                 |         |       |       |
|--------------------------|-----------------|---------|-------|-------|
| Parameters               | Conditions      | Typical | Rated | Units |
| Tested I/O voltage       | 60 sec, 5mA max |         | 3600  | VAC   |
|                          |                 |         | 5000  | VDC   |

| General Specifications |            |          |         |       |
|------------------------|------------|----------|---------|-------|
| Parameters             | Conditions | Typical  | Maximum | Units |
| Safety class           |            | Class II |         |       |

|                          |   |  |      |                       |
|--------------------------|---|--|------|-----------------------|
| Over Current protection  | Auto recovery                                       | ≥ 110  |      | % of I <sub>out</sub> |
| Short circuit protection | Hiccup, Continuous, Auto recovery                   |  |      |                       |
| Power consumption        | 230VAC  | 0.1  | 0.15 | W                     |
| Power derating           | -40 °C to -25 °C                                    | 1.33   |      | % / °C                |
|                          | +55 °C to +85 °C                                    | 1.67   |      | % / °C                |
|                          | 85VAC ~ 100VAC                                      | 1.33   |      | % /VAC                |
|                          | 277VAC ~ 305VAC                                     | 1  |      | % /VAC                |
| Operating temperature    | -40 to +85  |  |      | °C                    |
| Storage temperature      | -40 to +105   |  |      | °C                    |
| Temperature coefficient  |   |  | ±0.2 | % / °C                |
| Cooling                  | Free air convection                                 |  |      |                       |
| Storage Humidity         |   |  | 95   | % RH                  |
| Weight                   | S277HAJZ series                                     | 8.2  |      | g                     |
|                          | SL277HAJZ series                                    | 9.0  |      | g                     |
| Dimensions (L x W x H)   | S277HAJZ series                                     | 1.14 x 0.68 x 0.55 inches ( 28.84 x 17.20 x 14.05 mm ) |      |                       |
|                          | SL277HAJZ series                                    | 1.22 x 0.79 x 0.59 inches ( 31.00 x 20.00 x 14.75 mm ) |      |                       |
| MTBF                     | > 1 000 000 hrs (MIL-HDBK -217F, t=+25°C)/Full Load |  |      |                       |

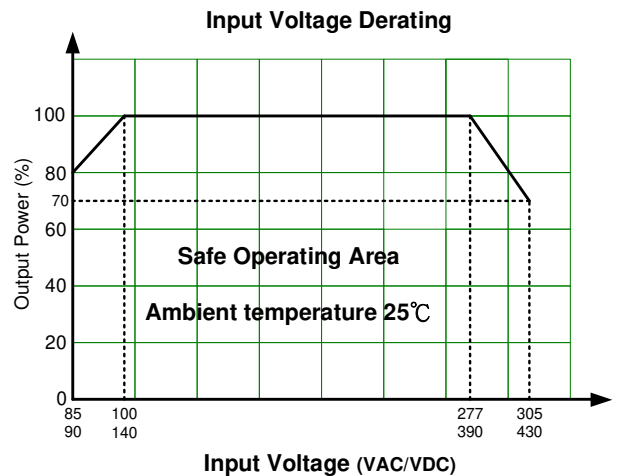
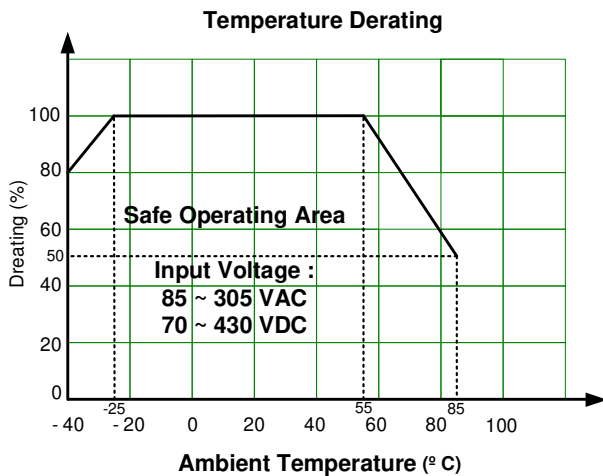
NOTE: All specifications in this datasheet are measured at an ambient temperature of 25°C, humidity<75%, nominal input voltage and at rated output load unless otherwise specified.

## Safety Specifications

### Parameters

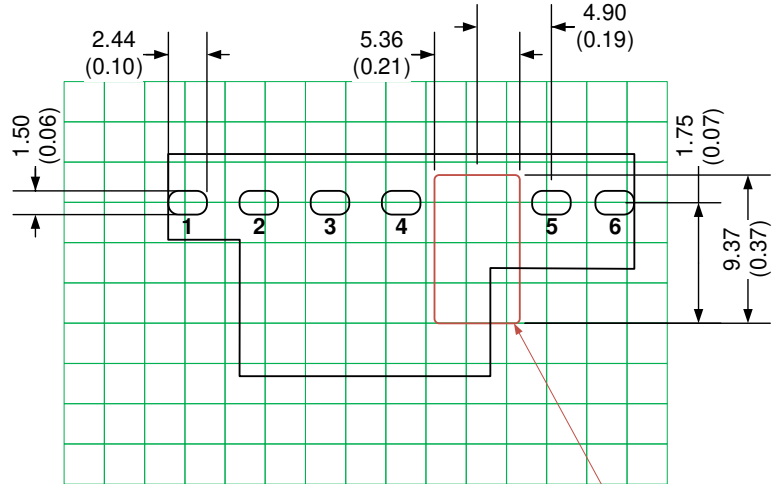
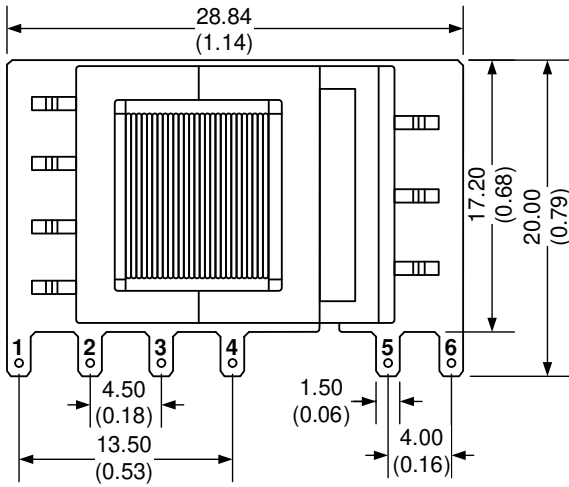
|           |   |   |
|-----------|---|---|
| Standards | Design to meet IEC/EN60335, IEC/EN61558, IEC/EN/UL62368 |   |
|           | EMC - Conducted and radiated emission                   | CISPR32 / EN55032, Class A (With EMI class A recommended circuit)<br>CISPR32 / EN55032, Class B (With EMI class B recommended circuit)                  |
|           | Electrostatic Discharge Immunity                        | IEC 6300-4-2 Contact ±6KV, Criteria B   |
|           | RF, Electromagnetic Field Immunity                      | IEC 6300-4-3 10V/m, Criteria A  |
|           | Electrical Fast Transient/Burst Immunity                | IEC 6300-4-4 ±2KV, Criteria B (With EMS Class III recommended circuit)<br>IEC 6300-4-4 ±4KV, Criteria B (With EMS Class IV recommended circuit)         |
|           | Surge Immunity  | IEC 6300-4-5 L-L ±1KV, Criteria B (With EMS Class III recommended circuit)<br>IEC 6300-4-5 L-L ±2KV, Criteria B (With EMS Class IV recommended circuit) |
|           | RF, Conducted Disturbance Immunity                      | IEC 6300-4-6 10Vr.m.s, Criteria A   |
|           | Voltage dips, Short Interruptions Immunity              | IEC 6300-4-11 0%, 70%, Criteria B   |

## Derating

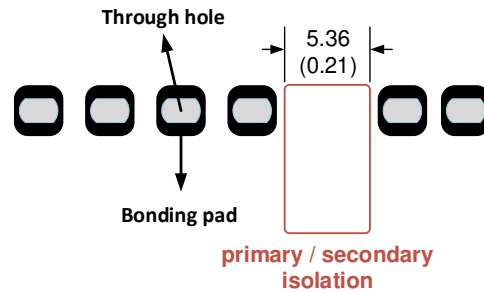
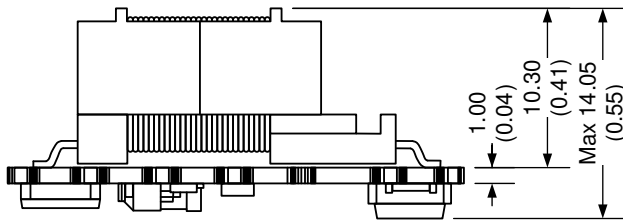


**Dimensions**

**S277HAJZ series**



Note : Grid 2.54\*2.54 mm Cutting area

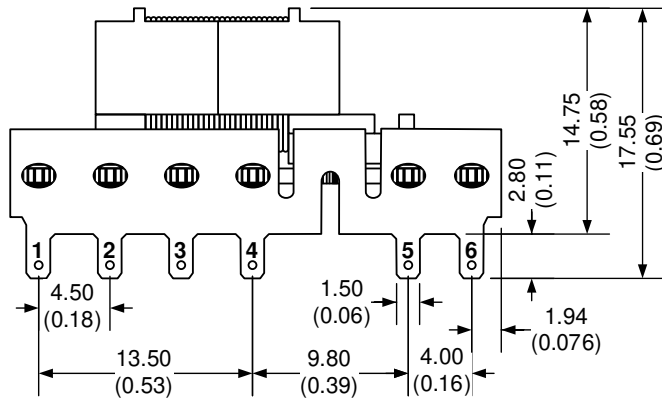
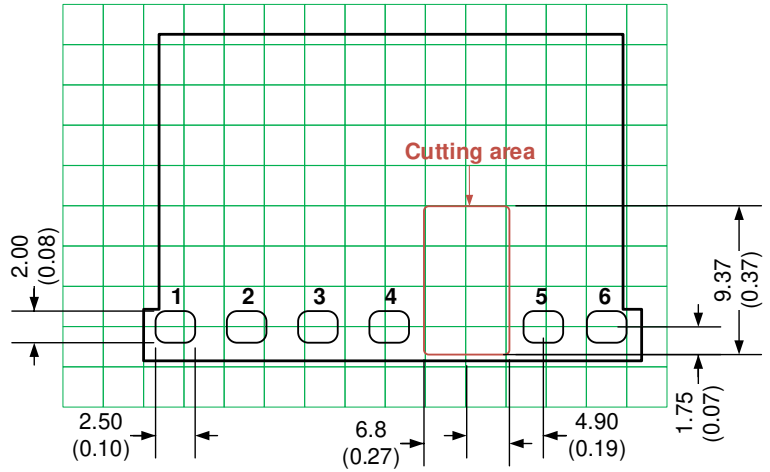
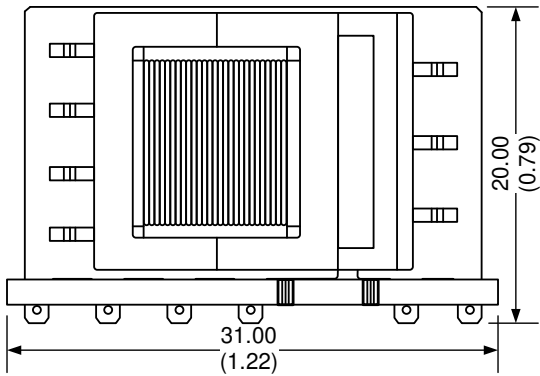


**Note:**  
Unit: mm [inch]  
General tolerances:  $\pm 1.00$  [ $\pm 0.040$ ]

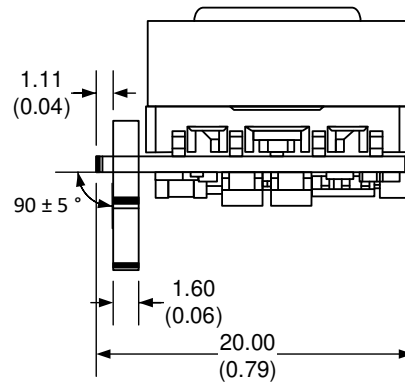
| Pin Output Specifications |              |
|---------------------------|--------------|
| Pin                       | Function     |
| 1                         | +V Input (L) |
| 2                         | -V Input (N) |
| 3                         | +V_Cap       |
| 4                         | -V_Cap       |
| 5                         | -V Output    |
| 6                         | +V Output    |

1. It is necessary to add C1 between pin3 to pin4
2. It is necessary to add circuit to the output as shown in recommended circuit
3. The layout of the device is for reference only, please refer to the actual product
4. The slots between pin 4 and pin 5 are required for creepage distance consideration.
5. For primary and secondary side external components, >6.4mm creepage is required.

SL277HAJZ series

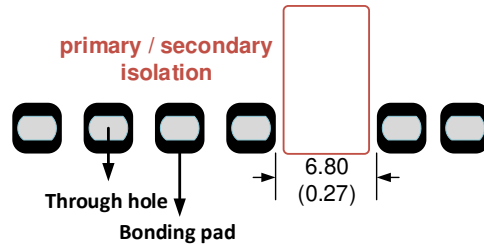


Note : Grid 2.54\*2.54 mm



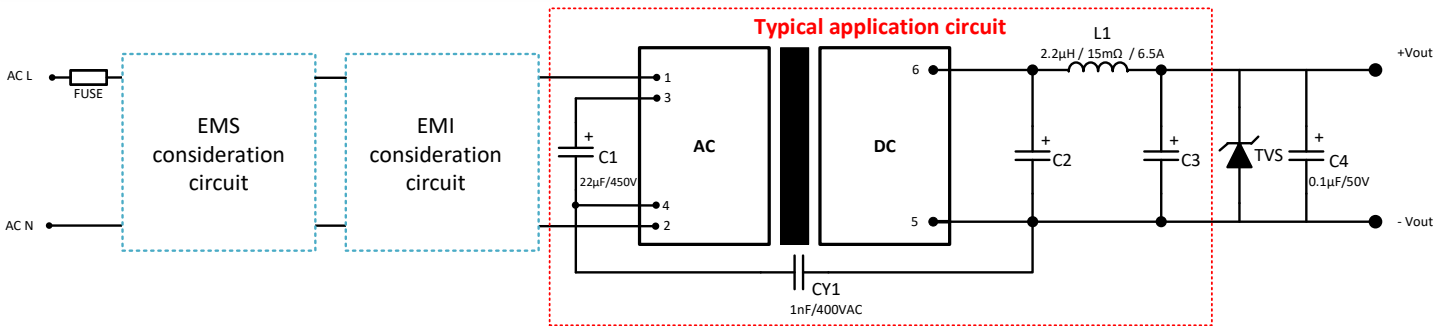
| Pin Output Specifications |              |
|---------------------------|--------------|
| Pin                       | Function     |
| 1                         | +V Input (L) |
| 2                         | -V Input (N) |
| 3                         | +V_Cap       |
| 4                         | -V_Cap       |
| 5                         | -V Output    |
| 6                         | +V Output    |

Note:  
Unit: mm [inch]  
General tolerances:  $\pm 1.00$  [ $\pm 0.040$ ]



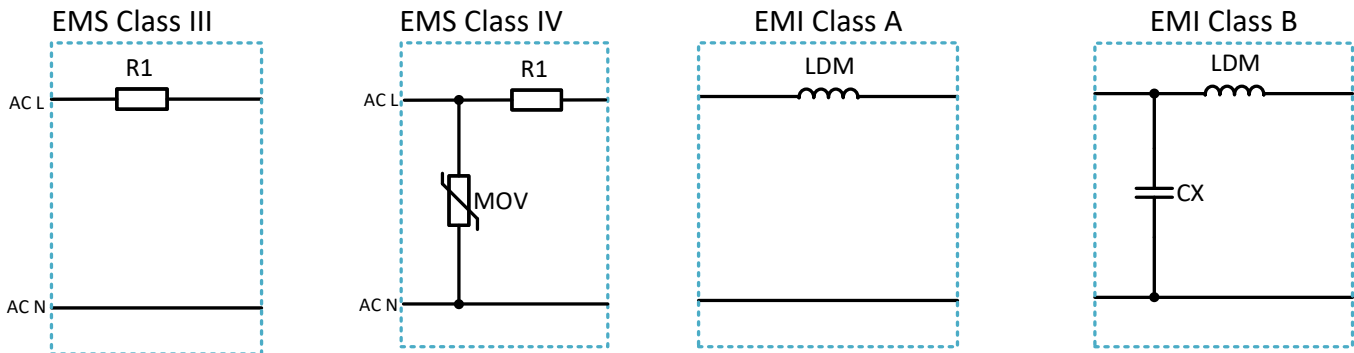
1. It is necessary to add C1 between pin3 to pin4
2. It is necessary to add circuit to the output as shown in recommended circuit
3. The layout of the device is for reference only, please refer to the actual product
4. The slots between pin 4 and pin 5 are required for creepage distance consideration.
5. For primary and secondary side external components, >6.4mm creepage is required.

## Recommended EMC external circuit



- With the variable combination of below EMS and EMI circuits which offer the different level of protection.
- The components are the must for typical application circuit in red framed area.
- A suppressor diode (TVS) is recommended to protect the application in case of a converter failure and specification should be 1.2 times of the output voltage.

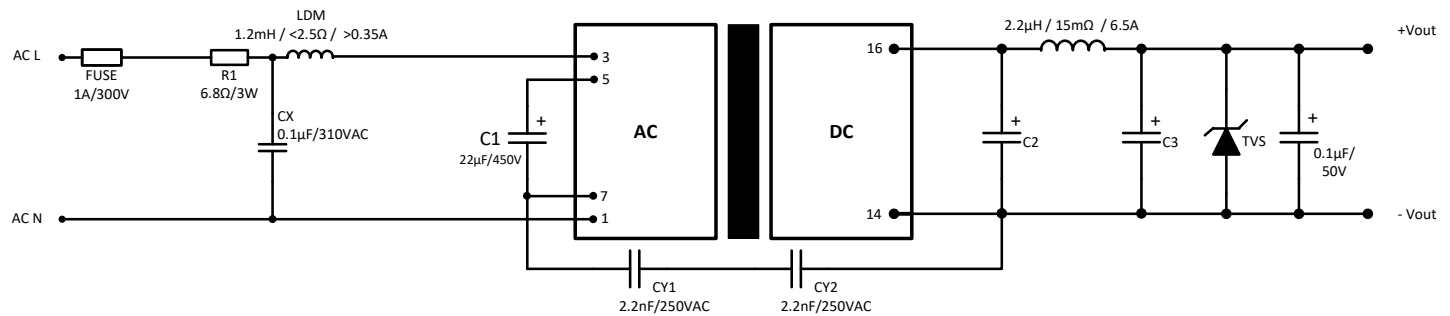
### EMI & EMS Recommended Circuit



| Component                | EMS               |                   | EMI                    |                        |
|--------------------------|-------------------|-------------------|------------------------|------------------------|
|                          | Class III         | Class IV          | CLASS A                | CLASS B                |
| MOV                      | -                 | S14K350           | -                      | -                      |
| R1 (Wire-wound resistor) | 6.8Ω/3W           | 6.8Ω/3W           | -                      | -                      |
| CX                       | -                 | -                 | -                      | 0.1µF/310VAC           |
| LDM                      | -                 | -                 | 1.2mH / <2.5Ω / >0.35A | 1.2mH / <2.5Ω / >0.35A |
| FUSE                     | 1A/300V slow blow | 2A/300V slow blow | -                      | -                      |

| Model name             | C2                                | C3        | TVS |
|------------------------|-----------------------------------|-----------|-----|
| AMEOFL10-3S(L)277HAJZ  | 1500µF/6.3V solid-state capacitor | 330µF/25V | 7V  |
| AMEOFL10-5S(L)277HAJZ  | 820µF/16V solid-state capacitor   | 330µF/25V | 7V  |
| AMEOFL10-9S(L)277HAJZ  | 470µF/16V solid-state capacitor   | 150µF/35V | 12V |
| AMEOFL10-12S(L)277HAJZ | 470µF/16V solid-state capacitor   | 150µF/35V | 20V |
| AMEOFL10-15S(L)277HAJZ | 470µF/35V                         | 220µF/35V | 20V |
| AMEOFL10-24S(L)277HAJZ | 470µF/35V                         | 47µF/50V  | 30V |

## Recommended EMC circuit for EN60335



**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).