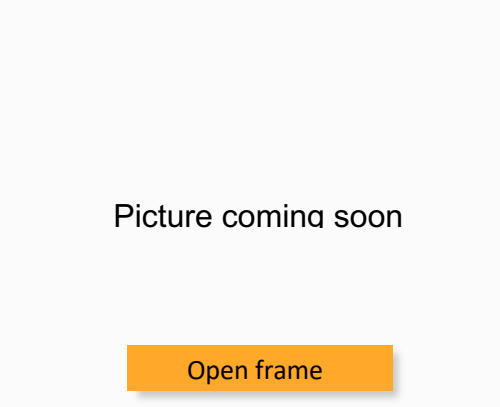




AMEOFL5-277HANZ



The AMEOFL5-277HANZ series is one of Aimtec’s highly efficient, green 3W 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 5W converter offers great operating temperatures, from -40°C to 85°C and also boasts an isolation of 3000VAC for improved reliability and system safety. Furthermore, a high MTBF of 1000,000h, output short circuit protection (OSCP) and an output over-current protection (OCP) come standard with the series.

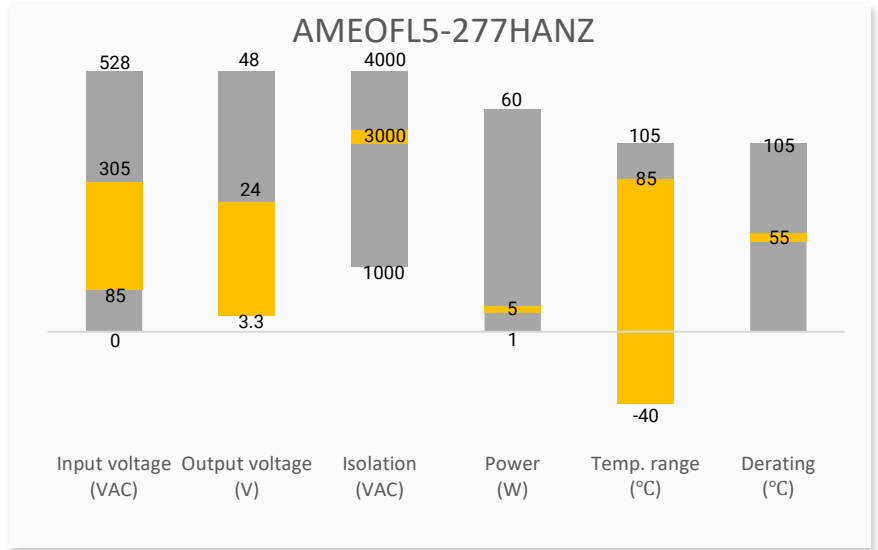
All models are suitable for industrial control, electric power, instrumentation and smart home applications.

Features



- Universal Input: 85 - 305VAC/70 - 430VDC
- Operating Temp: -40 °C to +85 °C
- High isolation voltage: 3000VAC
- Low ripple & noise, 150mV(p-p), max.
- Output short circuit, over-current
- Open frame package

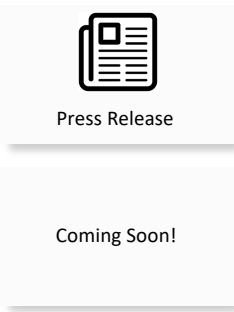
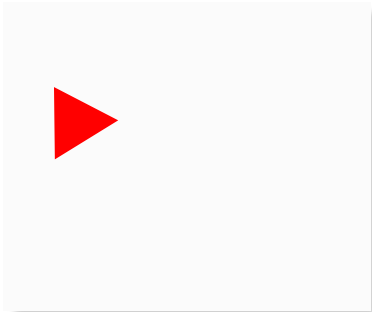
Summary



Training



Applications



Product Training Video
(click to open)

Application Notes



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 (%) |
|--------------------|------------------------|---------------------|------------------------|--------------------|------------------------|------------------------------|-------------------------|
| AMEOFL5-3S277HANZ | 85~305/47~63 | 70~430 | 3.3 | 3.3 | 1 | 2200 | 69 |
| AMEOFL5-5S277HANZ | 85~305/47~63 | 70~430 | 5 | 5 | 1 | 1500 | 76 |
| AMEOFL5-9S277HANZ | 85~305/47~63 | 70~430 | 5 | 9 | 0.56 | 680 | 77 |
| AMEOFL5-12S277HANZ | 85~305/47~63 | 70~430 | 5 | 12 | 0.42 | 470 | 79 |
| AMEOFL5-15S277HANZ | 85~305/47~63 | 70~430 | 5 | 15 | 0.34 | 330 | 79 |
| AMEOFL5-24S277HANZ | 85~305/47~63 | 70~430 | 5 | 24 | 0.21 | 100 | 81 |

Input Specifications

| Parameters | Conditions | Typical | Maximum | Units |
|----------------|----------------|---------|---------|-------|
| Input Current | 115VAC | | 200 | mA |
| | 230VAC | | 100 | |
| Inrush current | 115VAC | 20 | | A |
| | 230VAC | 40 | | |
| External fuse | Slow blow type | 1 | | A |

Output Specifications

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

NOTE: The output minimum load is 10%

Isolation Specifications

| Parameters | Conditions | Typical | Rated | Units |
|--------------------|-----------------|---------|-------|-------|
| Tested I/O voltage | 60 sec, 5mA max | | 3000 | VAC |

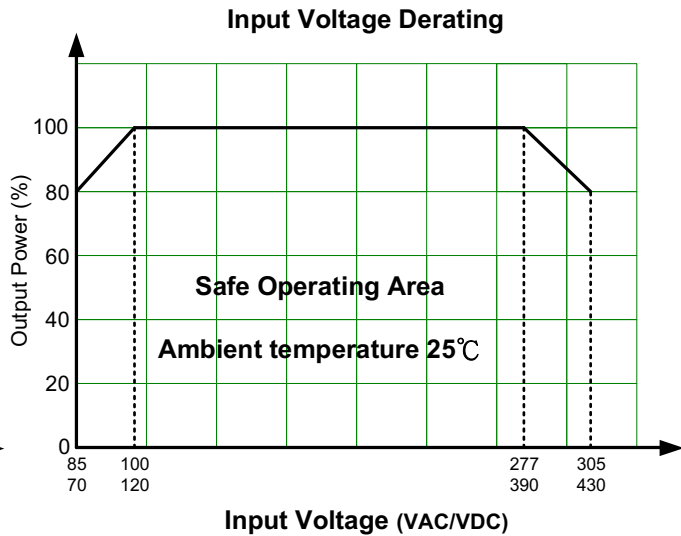
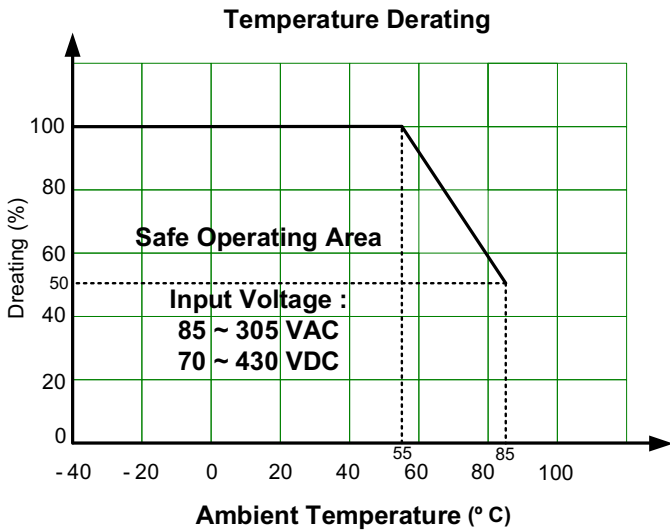
General Specifications

| Parameters | Conditions | Typical | Maximum | Units |
|--------------------------|-----------------------------------|---------|---------|-----------|
| Safety class | Class II | | | |
| Over Current protection | Auto recovery | ≥ 110 | | % of Iout |
| Short circuit protection | Hiccup, Continuous, Auto recovery | | | |
| Power consumption | 230VAC | 0.1 | 0.15 | W |
| | +55 °C to +85 °C | 1.67 | | % / °C |
| | 85VAC ~ 100VAC | 1.33 | | % /VAC |
| 277VAC ~ 305VAC | 0.72 | | | |
| Operating temperature | -40 to +85 | | | °C |
| Storage temperature | -40 to +105 | | | °C |

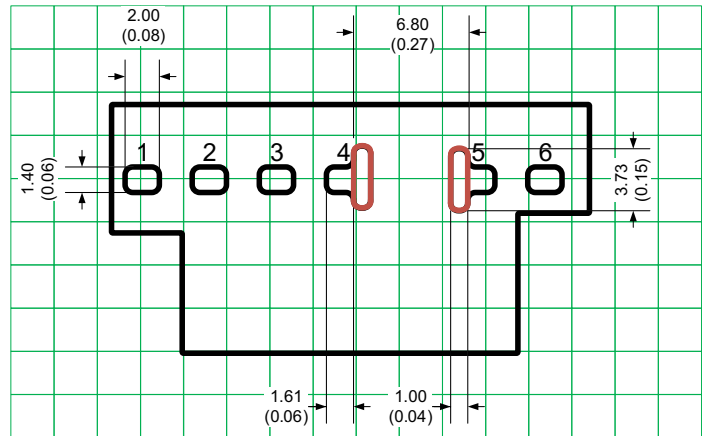
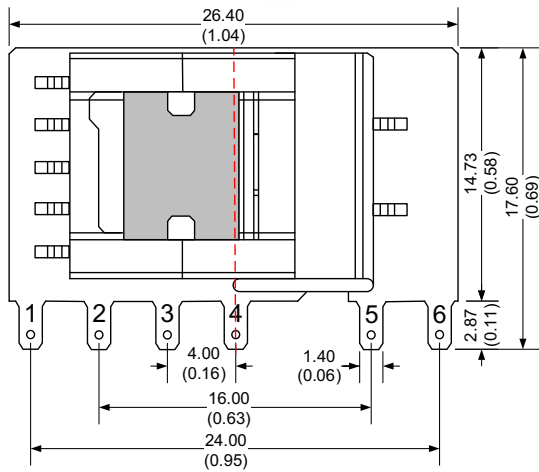
| | | | | |
|---|--|-------|-----|--------|
| Temperature coefficient | | ±0.15 | | % / °C |
| Cooling | Free air convection | | | |
| Storage Humidity | | | 95 | % RH |
| Weight | | | 5.2 | g |
| Dimensions (L x W x H) | 1.04 x 0.58 x 0.43 inches (26.40 x 14.73 x 11.00 mm) | | | |
| MTBF | > 1 000 000 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) 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) 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) 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 |

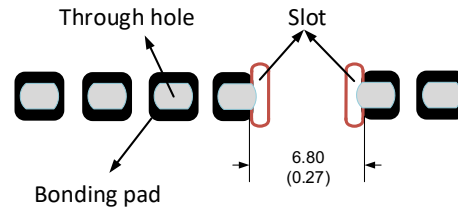
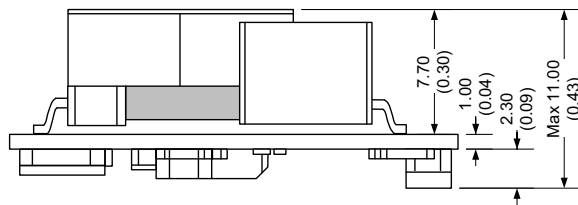
Derating



Dimensions



Note : Grid 2.54*2.54 mm



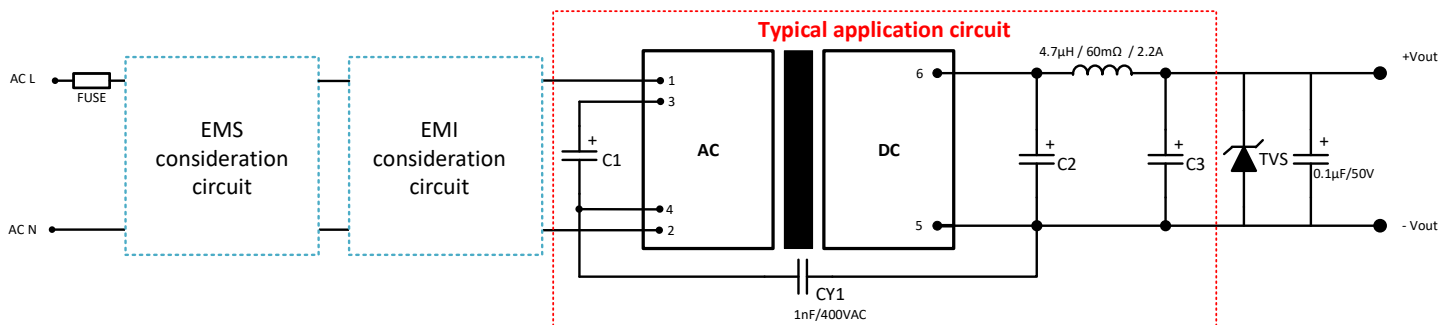
Note:
 Unit: mm [inch]
 General tolerances: ± 1.00 [± 0.040]

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 |

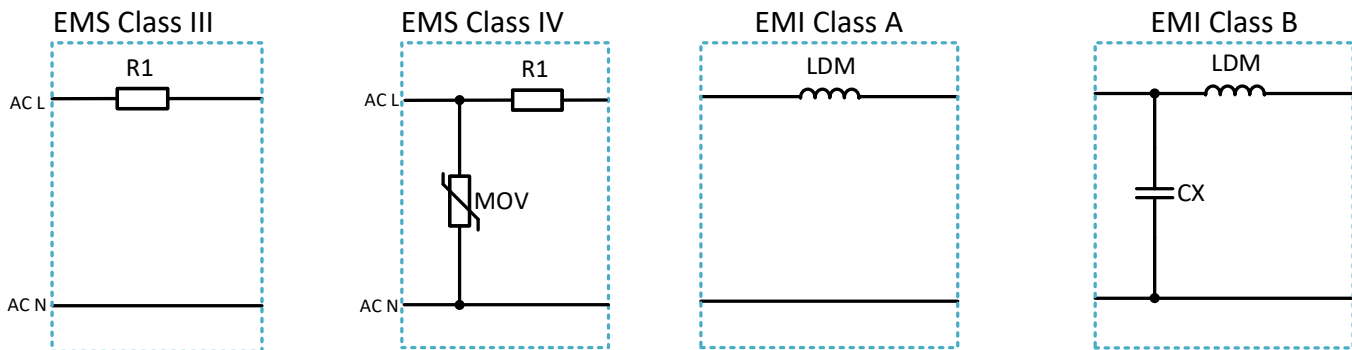
1. It is necessary to add C1 between pin3 to pin4
2. It is necessary to add circuit to the output as shown in recommended circuit
3. The layout of the device is for reference only, please refer to the actual product
4. The slots between pin 4 and pin 5 are required for creepage distance consideration.

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 | 12Ω/3W | 12Ω/2W | - | - |
| CX | - | - | - | 0.1μF/310VAC |
| LDM | - | - | 4.7mH / <15Ω / >0.2A | 1.2mH / <4Ω / >0.2A |
| FUSE | 1A/300V slow blow | 2A/300V slow blow | - | - |

| Model name | C1 | C2 | C3 | TVS |
|------------------|--|----------------------------------|-----------|-----|
| AMEOFL5-3S277NZ | 10μF/450V | 820μF/6.3V solid-state capacitor | 100μF/35V | 7V |
| AMEOFL5-5S277NZ | (-25 °C ~ +85 °C, 85 – 305VAC input; -40 °C ~ +85 °C, 165 – 305VAC input) | 470μF/16V solid-state capacitor | 100μF/35V | 7V |
| AMEOFL5-9S277NZ | | 270μF/16V solid-state capacitor | 47μF/35V | 12V |
| AMEOFL5-12S277NZ | 22μF/450V (-40 °C ~ +85 °C, 85 – 305VAC input) | 270μF/16V solid-state capacitor | 47μF/35V | 20V |
| AMEOFL5-15S277NZ | | 220μF/35V | 47μF/35V | 20V |
| AMEOFL5-24S277NZ | | 220μF/35V | 47μF/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.