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**AME5-277NZ**



Encapsulated

The new AME5-277NZ is an AC/DC converter that is designed for EV chargers. It can provide Triple regulated output voltages which results in one AC-DC converter capable of meeting 3 different power requirements.

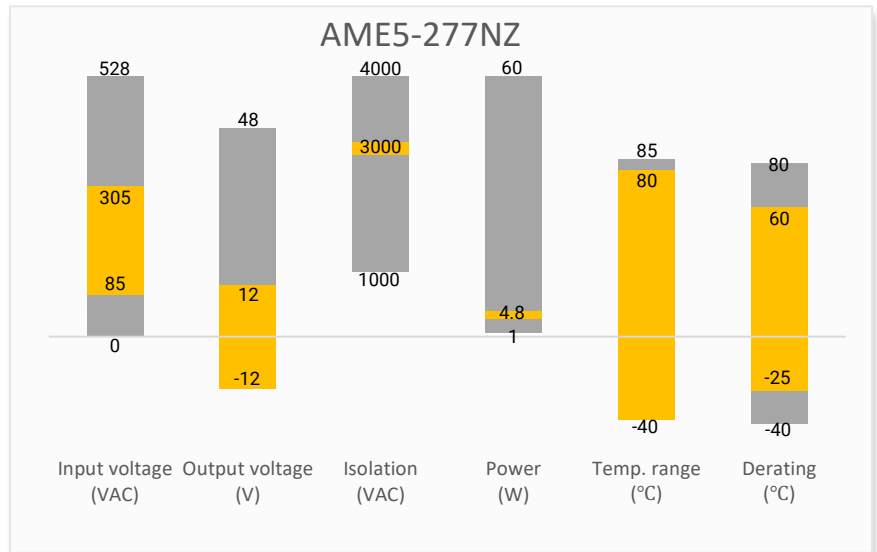
This new series offers high operating temperatures, from -40°C to 80°C with full power up to 60°C and an isolation of 3000VAC for improved reliability and system safety. Furthermore, a high MTBF of 300,000h, output short circuit protection (OSCP) and an output over-voltage protection (OVP) come standard with the series.

The AME5-277NZ is perfect one-piece power solution for the portable EV AC charging box as well as various power grid, instrumentation, industrial controls and communication applications.

**Features**

- Universal Input: 85 - 305VAC/100 - 430VDC
- Operating Temp: -40 °C to +80 °C
- High isolation voltage: 3000VAC
- Low ripple & noise, 100mV(p-p), Typ.
- Output short circuit, over-voltage protection
- 3 regulated Output

**Summary**



**Training**



Product Training Video  
(click to open)



Press Release

Coming Soon!

Application Notes

**Applications**



Electric Vehicle Charging



Industrial

## 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 ( $\mu$ F) |     |     | Efficiency @ 230VAC (%) |
|                |                        |                     |                        | Vo1                | Vo2 | Vo3 | Io1                    | Io2 | Io3  | Vo1                                | Vo2 | Vo3 |                         |
| AME5-512T277NZ | 85-305/47-63           | 100-430             | 4.8                    | 12                 | 5   | -12 | 0.35                   | 0.1 | 0.01 | 330                                | 100 | 100 | 71                      |

| Input Specifications |                      |         |         |         |       |
|----------------------|----------------------|---------|---------|---------|-------|
| Parameters           | Conditions           | Minimum | Typical | Maximum | Units |
| Current              | 115VAC               |         |         | 0.125   | A     |
|                      | 230VAC               |         |         | 0.08    | A     |
| Inrush current       | 115VAC               |         | 20      |         | A     |
|                      | 230VAC               |         | 40      |         | A     |
| External fuse        | slow blow type, 300V |         | 1       |         | A     |

| Output Specifications |                              |           |         |        |
|-----------------------|------------------------------|-----------|---------|--------|
| Parameters            | Conditions                   | Typical   | Maximum | Units  |
| Voltage accuracy      | Each output                  | $\pm 3$   |         | %      |
| Line regulation       | Each output, Full load       | $\pm 0.5$ |         | %      |
| Load regulation       | Each output, 10-100% load    | $\pm 3$   |         | %      |
| Ripple & Noise*       | Each output, 20MHz bandwidth | 100       | 150     | mV p-p |
| Hold up time          | 115VAC                       | 8         |         | ms     |
|                       | 230VAC                       | 65        |         | ms     |

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

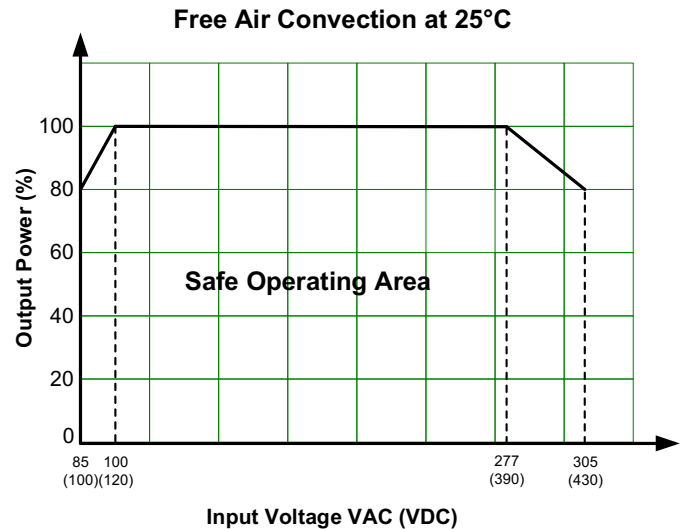
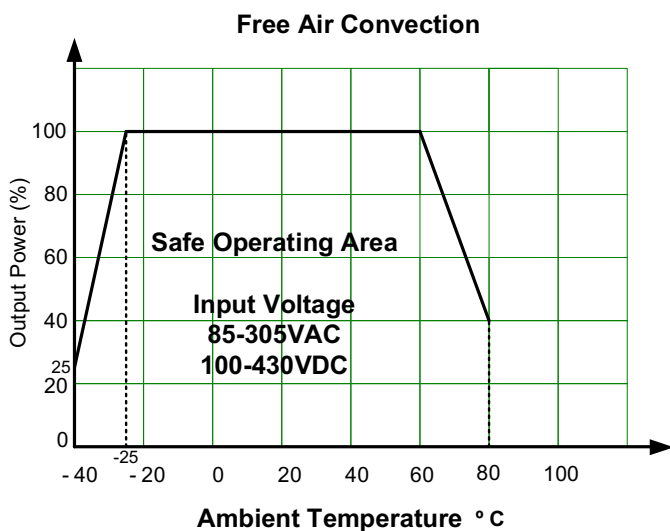
| Isolation Specifications   |                               |         |       |       |
|----------------------------|-------------------------------|---------|-------|-------|
| Parameters                 | Conditions                    | Typical | Rated | Units |
| Tested I/O voltage         | 60 sec, leakage current < 5mA |         | 3000  | VAC   |
| Tested input to PE voltage |                               |         | 1500  |       |

| General Specifications   |                                     |                                          |         |                  |
|--------------------------|-------------------------------------|------------------------------------------|---------|------------------|
| Parameters               | Conditions                          | Typical                                  | Maximum | Units            |
| Safety class             | Class I                             |                                          |         |                  |
| Over voltage protection  | Vo1                                 |                                          | 16      | VDC              |
| Short circuit protection | Vo1                                 | Hiccup, Continuous, Auto recovery        |         |                  |
| Operating temperature    | See derating graph                  | -40 to +80                               |         | $^{\circ}$ C     |
| Storage temperature      |                                     | -40 to +85                               |         | $^{\circ}$ C     |
| Lead temperature         | Wave soldering                      | 260 $\pm$ 5 $^{\circ}$ C; time : 5 - 10s |         |                  |
|                          | Hand soldering                      | 360 $\pm$ 10 $^{\circ}$ C; time : 3 - 5s |         |                  |
|                          | -40 $^{\circ}$ C ~ -25 $^{\circ}$ C | 5                                        |         | % / $^{\circ}$ C |

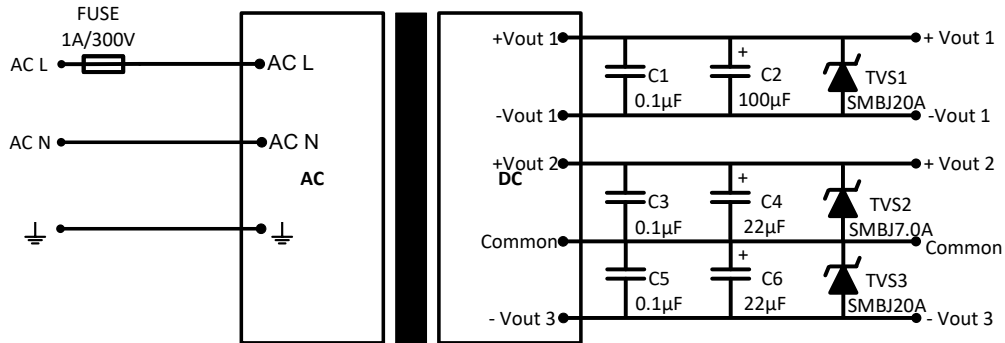
|                                                                                                                                                                                     |                                                         |                                                  |         |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|--------------------------------------------------|---------|
| Power derating                                                                                                                                                                      | 60°C ~ 80°C                                             | 3                                                | % / °C  |
|                                                                                                                                                                                     | 85VAC ~ 100VAC                                          | 1.33                                             | % / VAC |
|                                                                                                                                                                                     | 277VAC ~ 305VAC                                         | 0.72                                             | % / VAC |
| Temperature coefficient                                                                                                                                                             | Vo1                                                     | ±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                                    | 55                                               | g       |
| Dimensions (L x W x H)                                                                                                                                                              | PCB mountable models                                    | 1.91 x 1.42 x 0.81 inches (48.5 x 36.0 x 20.5mm) |         |
| MTBF                                                                                                                                                                                | > 300 000 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                                  | Information technology Equipment         | Designed to meet IEC/EN 62368                                             |
|                                            | EMC - Conducted and radiated emission    | CISPR32 / EN55032                                                         |
|                                            | 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, Criteria B                                            |
|                                            |                                          | IEC 61000-4-4 ±4KV, with EMC recommended circuit, Criteria B              |
|                                            | Surge Immunity                           | IEC 61000-4-5 L-L ±1KV/L-G ±2KV, 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



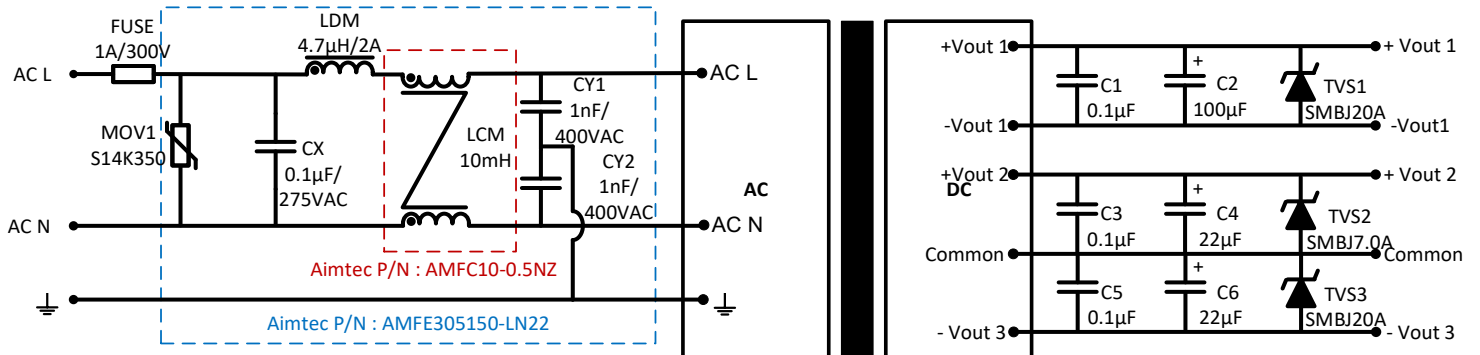
Typical Application Circuit



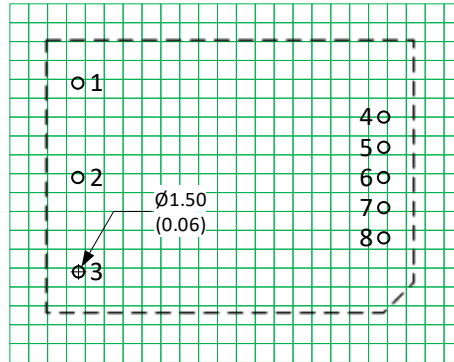
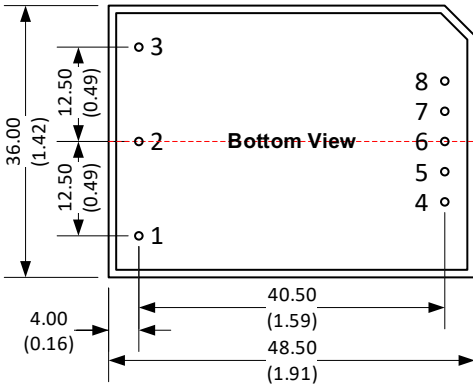
Output Filter Components:

We recommend using an electrolytic capacitor with high frequency, and low ESR rating for C2, C4, C6. C1, C3, C5 is a ceramic capacitor used for filtering high-frequency noise and TVS is a recommended suppressor diode.

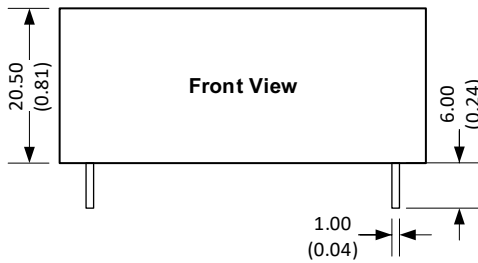
EMC Recommended Circuit



Dimensions



Note : Grid 2.54\*2.54 mm



Notes:

All dimensions are typical in millimeters (inches).  
 Pin diameter tolerances :  $\pm 0.10$  ( $\pm 0.004$ )  
 General tolerance :  $\pm 0.50$  ( $\pm 0.02$ )

| Pin Output Specifications |                 |
|---------------------------|-----------------|
| Pin                       | Single          |
| 1                         | Earth Ground    |
| 2                         | AC Input (N)    |
| 3                         | AC Input (L)    |
| 4                         | -V Output 1     |
| 5                         | +V Output 1     |
| 6                         | -V Output 3     |
| 7                         | Vo2, Vo3 Common |
| 8                         | +V Output 2     |

**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).