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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.

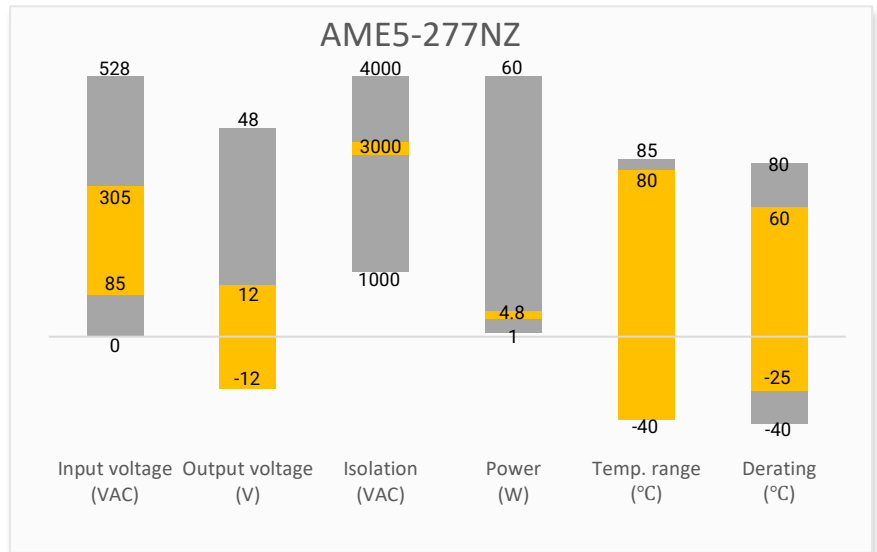
This new series offers high operating temperatures, from -40°C to 80°C with full power up to 60°C and an isolation of 3000VAC for improved reliability and system safety. Furthermore, a high MTBF of 300,000h, output short circuit protection (OSCP) and an output over-voltage protection (OVP) come standard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

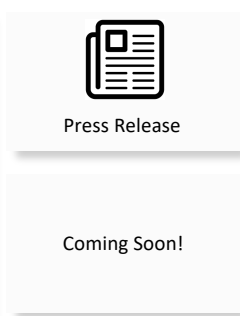
**Summary**



**Training**



Product Training Video  
(click to open)



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.

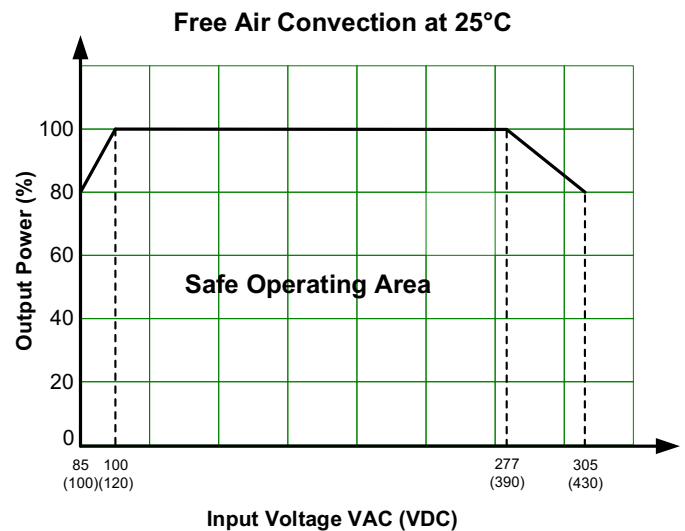
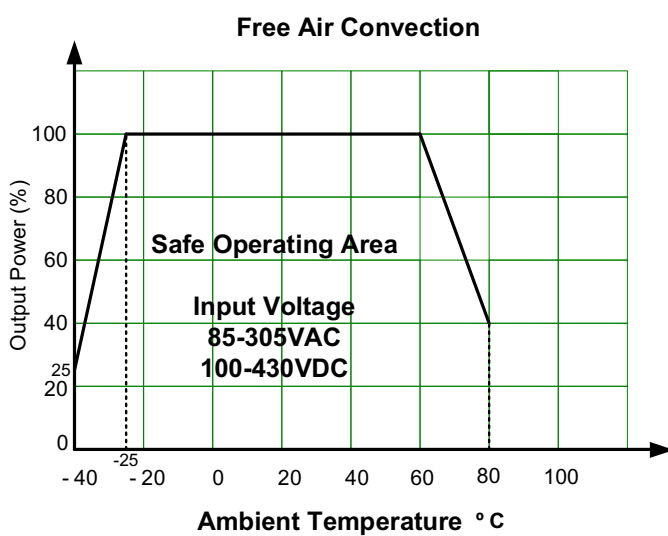
Isolation Specifications				
Parameters	Conditions	Typical	Rated	Units
Tested I/O voltage	60 sec, leakage current < 5mA		3000	VAC
Tested input to PE voltage			1500	

General Specifications				
Parameters	Conditions	Typical	Maximum	Units
Switching frequency		68-110		Khz
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		

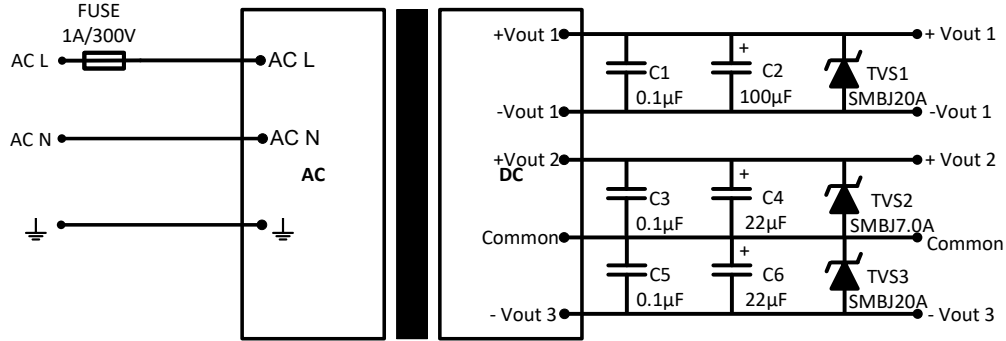
Power derating	-40°C ~ -25°C	5		% / °C
	60°C ~ 80°C	3		% / °C
	85VAC ~ 100VAC	1.33		% / VAC
	277VAC ~ 305VAC	0.72		% / VAC
Temperature coefficient	Vo1	±0.02		% / °C
Cooling	Free air convection			
Humidity	Non-condensing	95		% RH
Case material	Heat resistant black Plastic (flammability to UL 94V-0)			
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



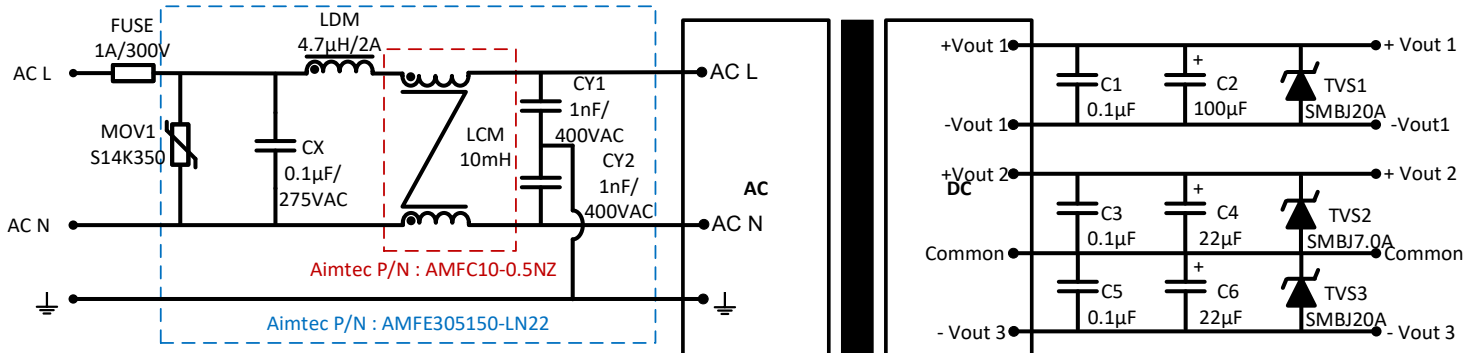
Typical Application Circuit



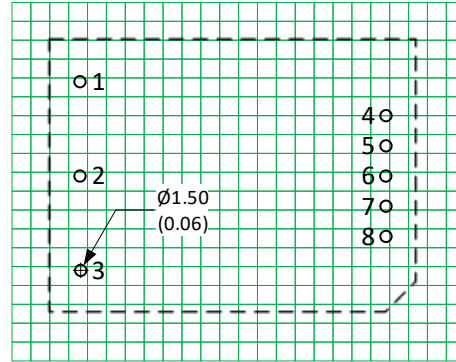
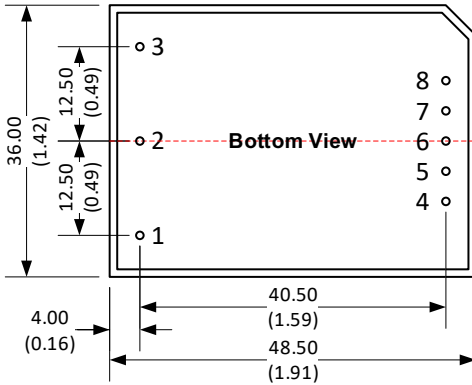
Output Filter Components:

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.

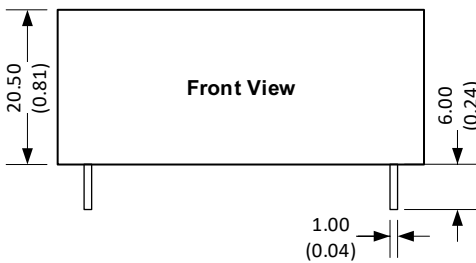
EMC Recommended Circuit



## 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

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