AME5-277NZ

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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.

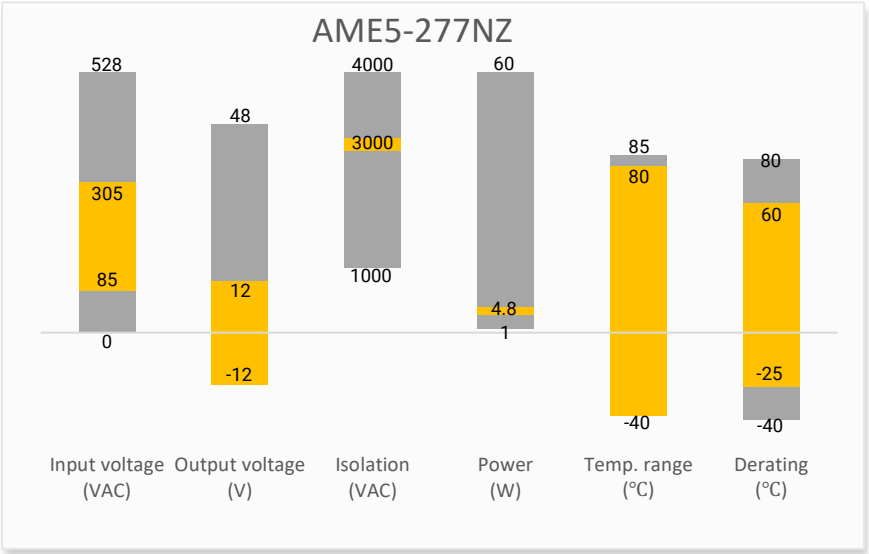
Features

- 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

RoHS

3yr Warranty

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 (μF)			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	±3		%
Line regulation	Each output, Full load	±0.5		%
Load regulation	Each output, 10-100% load	±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	

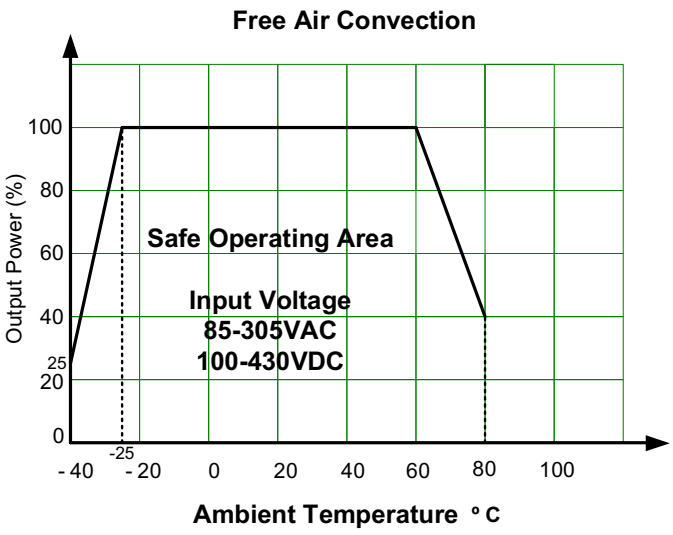
General Specifications				
Parameters	Conditions	Typical	Maximum	Units
Safety class	Class Ⅰ			
Over voltage protection	Vo1		16	VDC
Short circuit protection	Vo1	Hiccup, Continuous, Auto recovery		
Operating temperature	See derating graph	-40 to +80		ºC
Storage temperature		-40 to +85		ºC
Lead temperature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

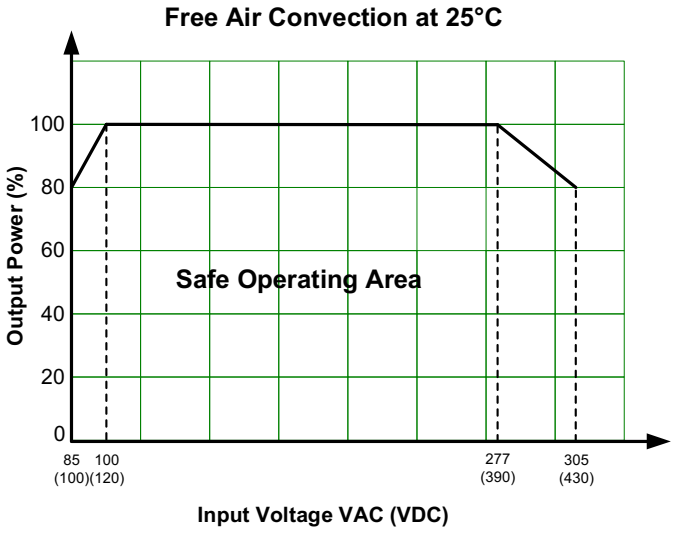
Power derating	60 °C ~ 80 °C	3		% / °C
	85VAC ~ 100VAC	1.33		% / VAC
	277VAC ~ 305VAC	0.72		% / VAC
Temperature coefficient	Vo1	±0.02		% / °C
Cooling	Free air convection			
Humidity	Non-condensing	95		% RH
Case material	Heat resistant black Plastic (flammability to UL 94V-0)			
Weight	PCB mountable models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

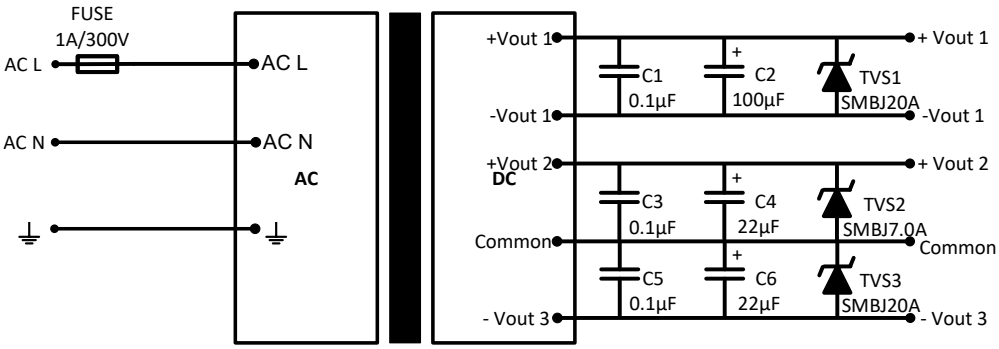
Safety Specifications		
Parameters		
Standards	Information technology Equipment	Designed to meet IEC/EN 62368
	EMC - Conducted and radiated emission	CISPR32 / EN55032
	Electrostatic Discharge Immunity	IEC 61000-4-2 Contact ±6KV / Air ±8KV, Criteria B
	RF, Electromagnetic Field Immunity	IEC 61000-4-3 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



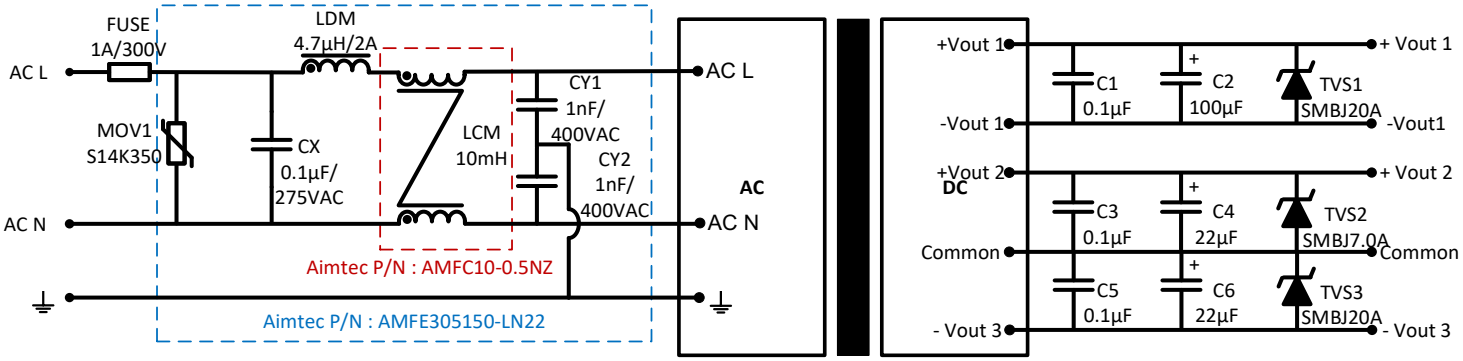


Typical Application Circuit

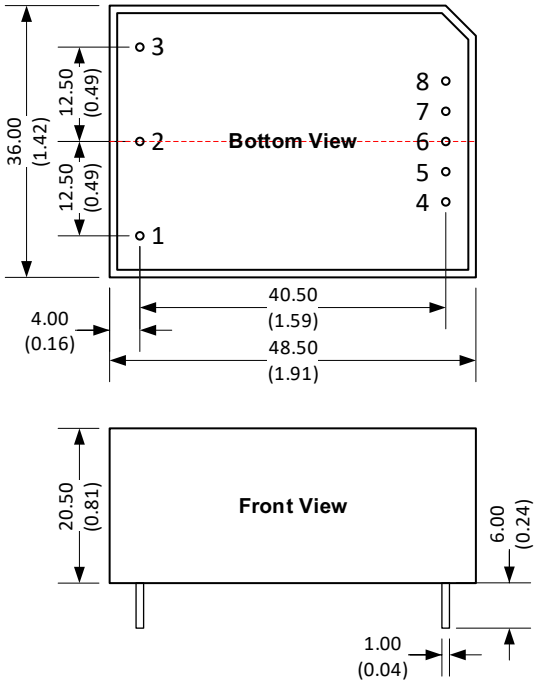


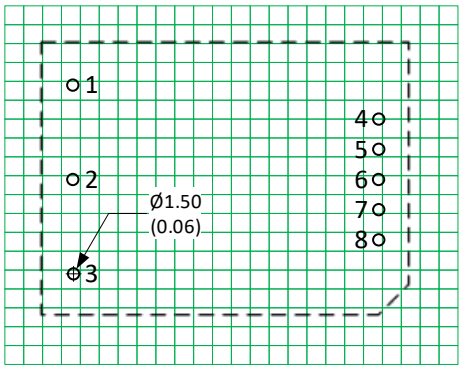
Output Filter Components:
We recommend using an electrolytic capacitor with high frequency, and low ESR rating for C2, C4, C6. C1, C3, C5 is a ceramic capacitor used for filtering high-frequency noise and TVS is a recommended suppressor diode.

EMC Recommended Circuit



Dimensions





Note : Grid 2.54*2.54 mm

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

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