

AMEOF5-277NZ

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The AMEOF5-277NZ series is one of Aimtec highly efficient green 5W AC-DC converters. They feature an ultra-wide wide input range accepting either AC or DC voltage, high efficiency, low power consumption and CLASS II reinforced insulation.

This new series offers great operating temperatures, from -40°C to 85°C and an isolation of 3000VAC for improved reliability and system safety. Furthermore, a high MTBF of 300,000h, output short circuit protection (OSCP), output over-current protection (OCP) come standard with the series.

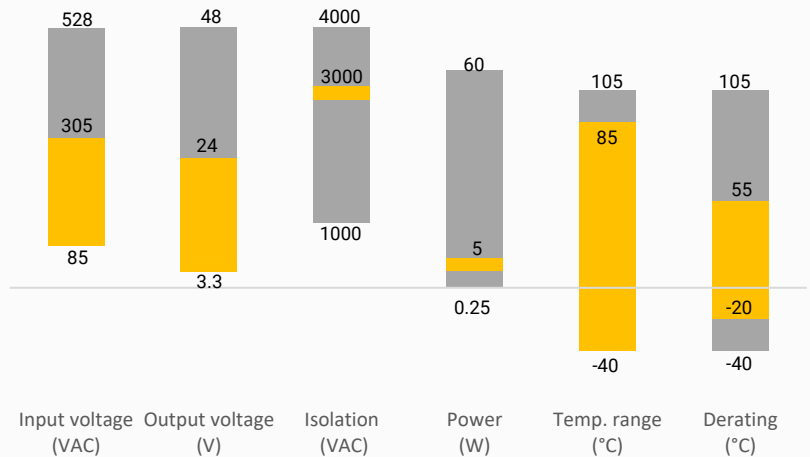
The converter can be configured to meet class A or class B of the CISPR32/EN55032 standard. This series is suitable for industrial control, electric power, instrumentation and smart home applications with dimensional constraints.

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 protection

Summary

AMEOF5-277NZ



Training



Product Training Video
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Press Release

Coming Soon!

Application Notes

Applications



Power Grid



Industrial



Instrumentation



IoT

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 (%)
AMEOF5-03S277NZ	85~305/47~63	70~430	3.3	3.3	1	2200	67
AMEOF5-05S277NZ	85~305/47~63	70~430	5	5	1	1500	74
AMEOF5-09S277NZ	85~305/47~63	70~430	5	9	0.56	680	75
AMEOF5-12S277NZ	85~305/47~63	70~430	5	12	0.42	470	77
AMEOF5-15S277NZ	85~305/47~63	70~430	5	15	0.34	330	77
AMEOF5-24S277NZ	85~305/47~63	70~430	5	24	0.21	100	79
AMEOF5-03SL277NZ	85~305/47~63	70~430	3.3	3.3	1	2200	67
AMEOF5-05SL277NZ	85~305/47~63	70~430	5	5	1	1500	74
AMEOF5-09SL277NZ	85~305/47~63	70~430	5	9	0.56	680	75
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AMEOF5-15SL277NZ	85~305/47~63	70~430	5	15	0.34	330	77
AMEOF5-24SL277NZ	85~305/47~63	70~430	5	24	0.21	100	79

Input Specifications

Parameters	Conditions	Typical	Maximum	Units
Input Current	115VAC		200	mA
	277VAC		100	
Inrush current	115VAC	20		A
	277VAC	40		
Input fuse	1A Slow-blow type required			

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	80	150	mV p-p

Isolation Specifications

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

General Specifications

Parameters	Conditions	Typical	Maximum	Units
Over Current protection	Auto recovery	≥ 110		% of Iout
Short circuit protection	Hiccup, Continuous, Auto recovery			
Operating temperature	-40 to +85			°C
Storage temperature	-40 to +105			°C

Power consumption	230VAC	0.25	0.5	W
Temperature coefficient		±0.15		% / °C
Power derating	-40 °C to -20°C, 85VAC to 110VAC	2.50		% / °C
	+55 °C to +85°C	1.67		
	85VAC to 110VAC	1.60		% / VAC
	277VAC to 305VAC	0.43		
Safety class	Class II			
Cooling	Free air convection			
Storage Humidity			95	% RH
Weight		6		g
Dimensions (L x W x H)	1.38 x 0.71 x 0.43 inches (35.00 x 18.00 x 11.00mm)			
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.				

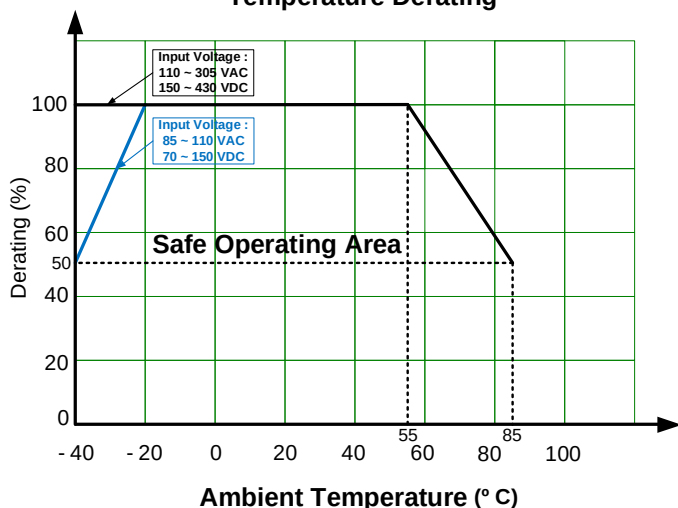
Safety Specifications

Parameters

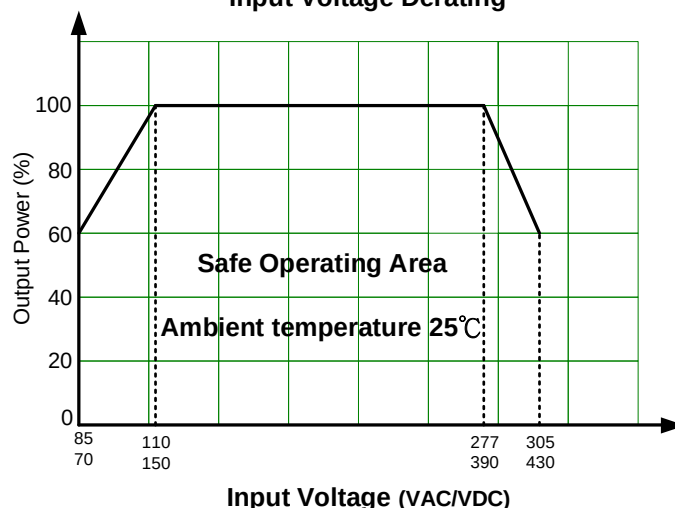
Standards	Design to meet ICE/EN/UL62368, EN60335	
	EMC - Conducted and radiated emission	CISPR32 / EN55032 Class A, (With typical application circuit, EMI Class A circuit) CISPR32 / EN55032 Class B, (With EMI Class B circuit)
	Electrostatic Discharge Immunity	IEC 61000-4-2 Contact ±4KV, Criteria B
	RF, Electromagnetic Field Immunity	IEC 61000-4-3 10V/m, Criteria A
	Electrical Fast Transient/Burst Immunity	IEC 61000-4-4 ±2KV, Criteria B (With typical application circuit, EMS Class III circuit) IEC 61000-4-4 ±4KV, Criteria B (With EMS Class IV circuit)
	Surge Immunity	IEC 61000-4-5 L-L ±1KV, Criteria B (with typical application circuit, EMS Class III and EMI Class A circuit) IEC 61000-4-5 L-L ±2KV, Criteria B (with EMS Class IV and EMI Class A circuit) IEC 61000-4-5 L-L ±1KV, L-G ±2KV, Criteria B (with EMS Class III and EMI Class B circuit) IEC 61000-4-5 L-L ±2KV, L-G ±4KV, Criteria B (with EMS Class IV and EMI Class B circuit)
	RF, Conducted Disturbance Immunity	IEC 61000-4-6 10Vr.m.s with EMC recommended circuit, Criteria A
	Voltage dips, Short Interruptions Immunity	IEC 61000-4-11 0%, 70%, with EMC recommended circuit, Criteria B

Derating

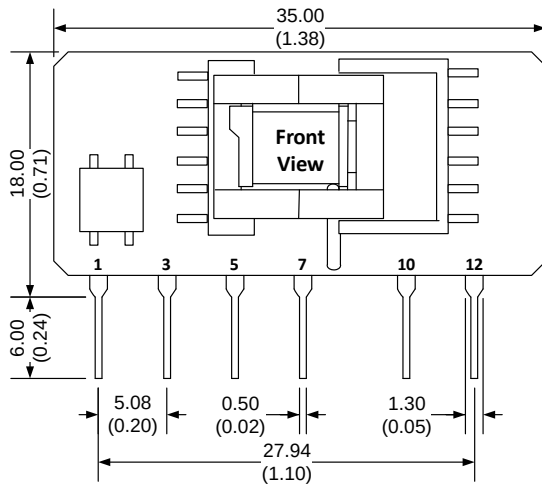
Temperature Derating



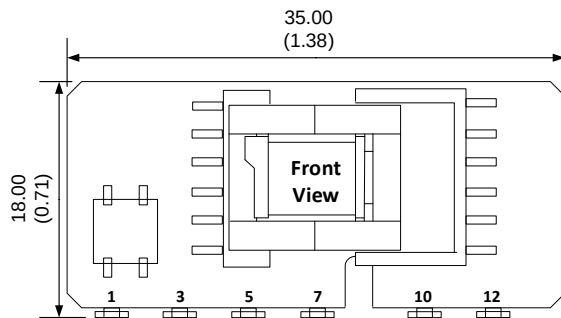
Input Voltage Derating



Dimensions



Note:
Unit: mm [inch]
Pin section tolerances: ± 0.10 [± 0.004]
General tolerances: ± 0.50 [± 0.020]

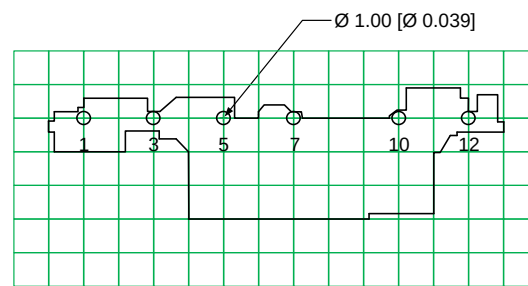
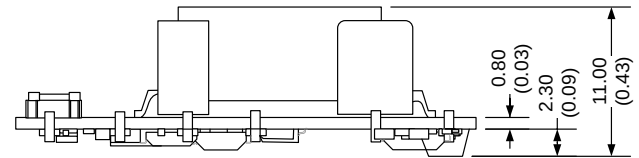


Note:
Unit: mm [inch]
Pin section tolerances: ± 0.10 [± 0.004]
General tolerances: ± 0.50 [± 0.020]

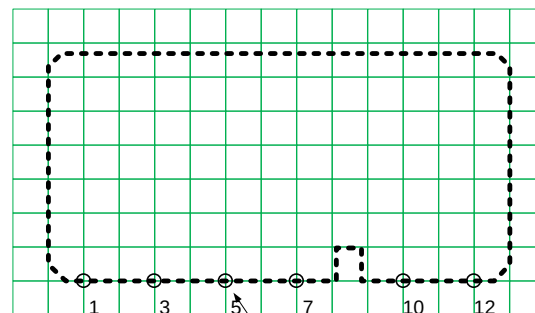
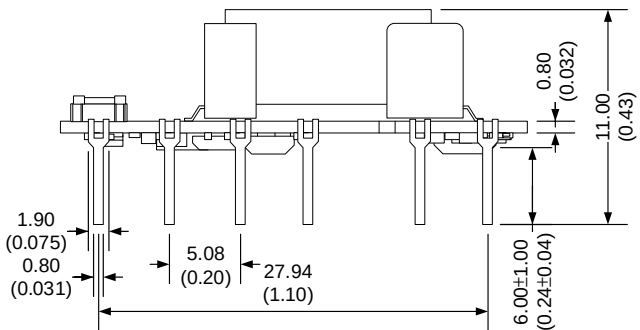
Pin Output Specifications	
Pin	Function
1	AC Input (N)
3	AC Input (L)
5	+V_Cap
7	-V_Cap
10	-V Output
12	+V Output

- Note:
1. Capacitor between pin5 and pin7 is necessary.
 2. External circuit on the output side is necessary. Please refer to the recommended circuit.
 3. It is needed to have distance $\geq 6.4\text{mm}$ for safety between external components in primary circuit and secondary circuit.
 4. The layout of the device is for reference only, please refer to the actual product.

Bottom View

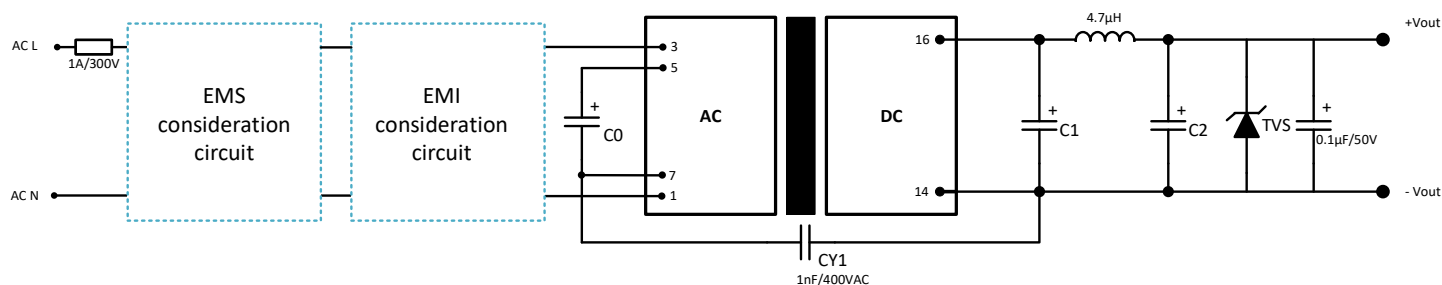


Note : Grid 2.54*2.54 mm



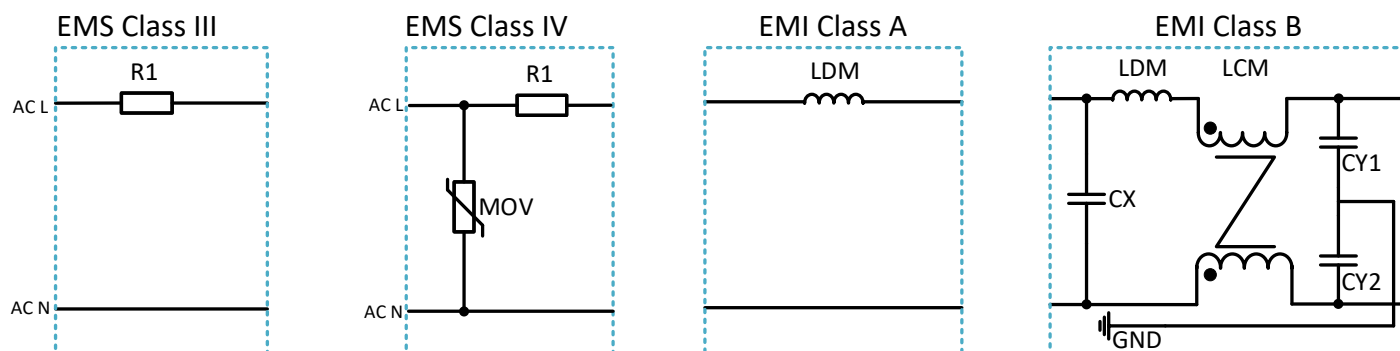
Note : Grid 2.54*2.54 mm

Recommended EMC external circuit



A suppressor diode (TVS) with 1.2 times of the output voltage rating is recommended.

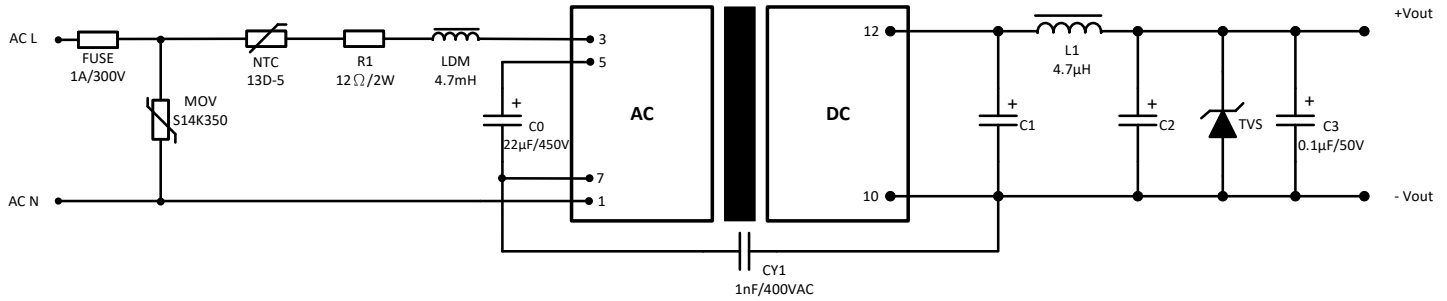
EMI & EMS Recommended Circuit



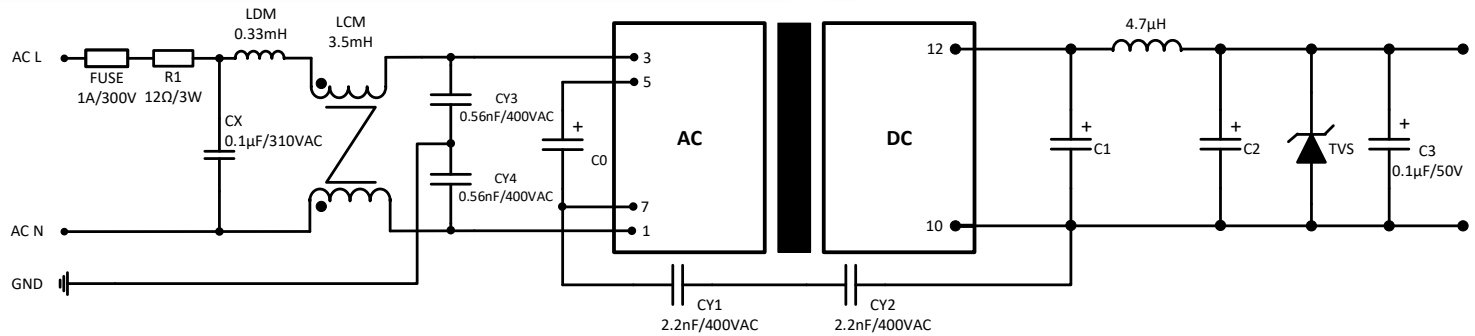
Component	EMS		EMI	
	Class III	Class IV	CLASS A	CLASS B
MOV	-	S14K350	-	-
R1	12Ω/3W	12Ω/3W	-	-
CX	-	-	-	0.1μF/310VAC
CY1	-	-	-	0.56nF/400VAC
CY2	-	-	-	0.56nF/400VAC
LCM	-	-	-	3.5mH
LDM	-	-	4.7mH	0.33mH
FUSE	1A/300V	2A/300V	1A/300V	1A/300V

Model	C0	C1	C2
3.3 VDC output	10μF/450V (-20°C to +85°C) 22μF/450V (-40°C to +85°C)	470μF/16V (Solid capacitor)	150μF/35V
5 VDC output		470μF/16V (Solid capacitor)	150μF/35V
9 VDC output		270μF/16V (Solid capacitor)	100μF/35V
12 VDC output		270μF/16V (Solid capacitor)	100μF/35V
15 VDC output		470μF/35V	47μF/35V
24 VDC output		220μF/35V	47μF/35V

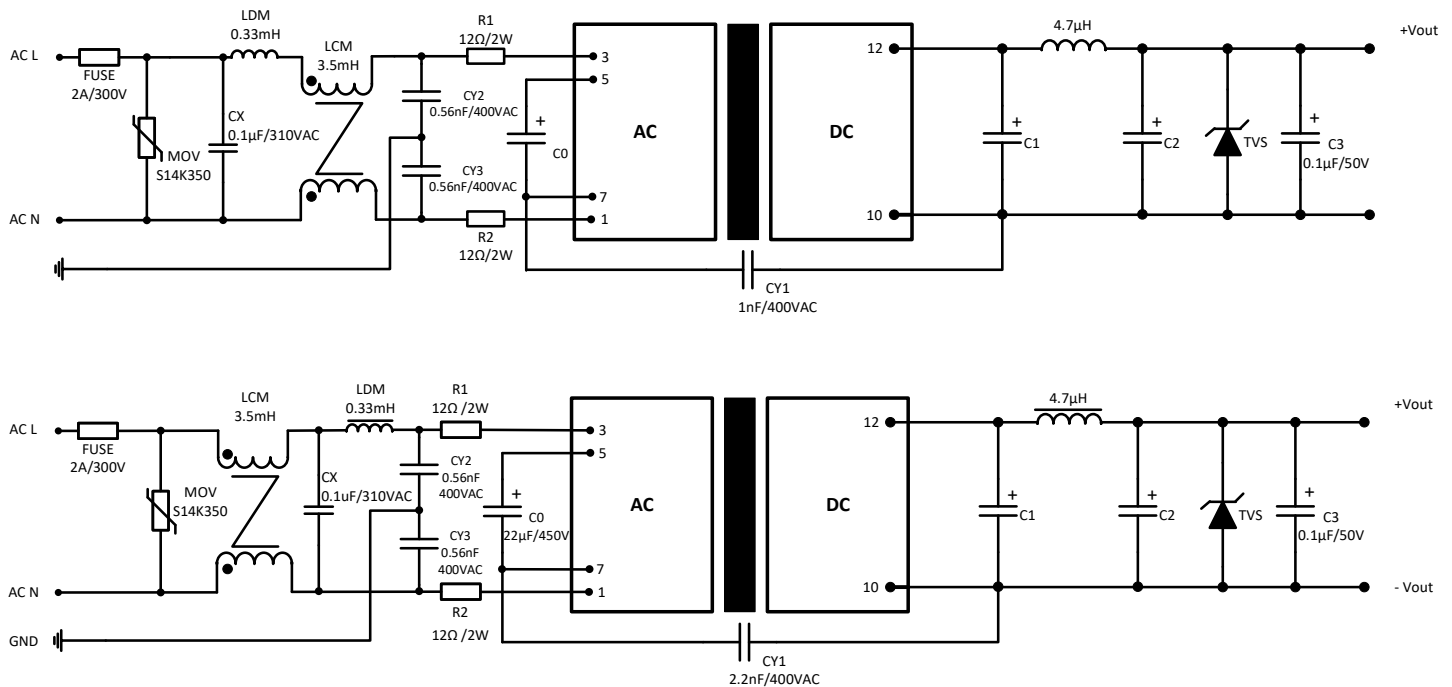
Typical application circuit



Recommended EMC circuit for EN60335



Recommended EMC circuit for EMI Class B, EMS Class IV



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