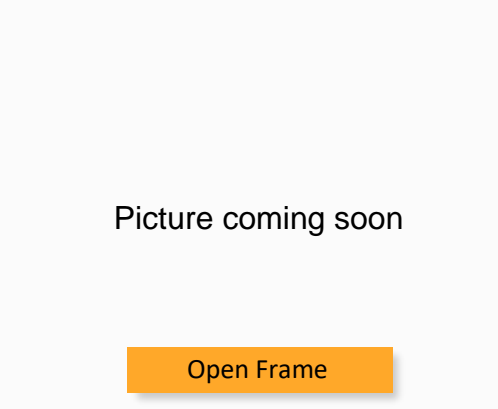




AMEOF15-277NZ



The AMEOF15-277NZ series is one of Aimtec highly efficient green 15W 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.

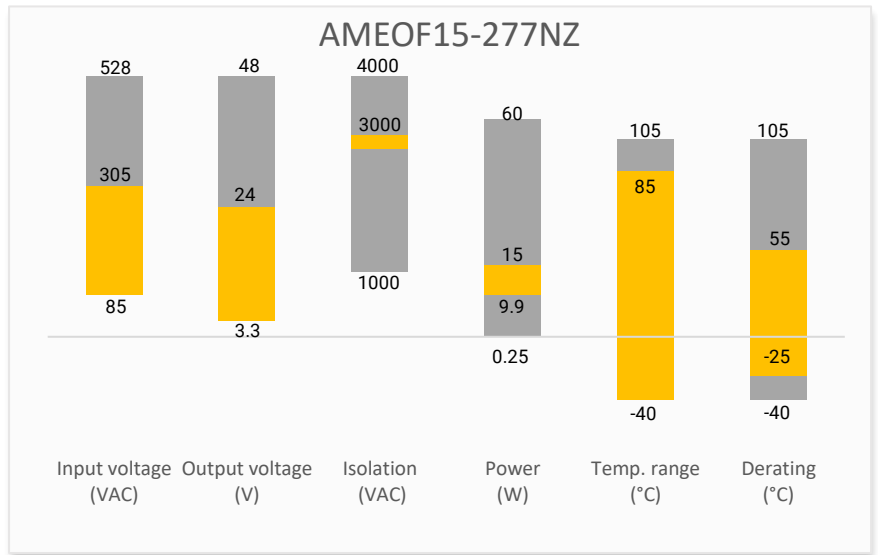
This series offers great operating temperatures, from -40°C to 85°C and an isolation of 3000VAC for improved reliability and system safety. Furthermore, a high MTBF of 300,000h, output short circuit protection (OSCP), output over-current protection (OCP) and output over-voltage protection (OVP) come 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/100 - 430VDC
- Operating Temp: -40 °C to +85 °C
- High isolation voltage: 3000VAC
- Low ripple & noise, 150mV(p-p), max.
- Output short circuit, over-current, and over-voltage protection


Summary



Training



Product Training Video
(click to open)



Press Release

Coming Soon!

Application Notes

Applications



Models & Specifications



Single Output Straight Pins

Model	Input Voltage (VAC/Hz)	Input Voltage (VDC)	Max Output wattage (W)	Output Voltage (V)	Output Current max (A)	Maximum capacitive load (μ F)	Efficiency @ 230VAC (%)
AMEOF15-03S277NZ	85~305/47~63	100~430	9.9	3.3	3	20000	75
AMEOF15-05S277NZ	85~305/47~63	100~430	14	5	2.8	15000	77
AMEOF15-09S277NZ	85~305/47~63	100~430	15	9	1.67	5000	82
AMEOF15-12S277NZ	85~305/47~63	100~430	15	12	1.25	4000	82
AMEOF15-15S277NZ	85~305/47~63	100~430	15	15	1	2000	84
AMEOF15-24S277NZ	85~305/47~63	100~430	15	24	0.625	1000	85

Single Output Bended Pins

Model	Input Voltage (VAC/Hz)	Input Voltage (VDC)	Max Output wattage (W)	Output Voltage (V)	Output Current max (A)	Maximum capacitive load (μ F)	Efficiency @ 230VAC (%)
AMEOF15-03SL277NZ	85~305/47~63	100~430	9.9	3.3	3	20000	75
AMEOF15-05SL277NZ	85~305/47~63	100~430	14	5	2.8	15000	77
AMEOF15-09SL277NZ	85~305/47~63	100~430	15	9	1.67	5000	82
AMEOF15-12SL277NZ	85~305/47~63	100~430	15	12	1.25	4000	82
AMEOF15-15SL277NZ	85~305/47~63	100~430	15	15	1	2000	84
AMEOF15-24SL277NZ	85~305/47~63	100~430	15	24	0.625	1000	85

Input Specifications

Parameters	Conditions	Typical	Maximum	Units
Input current	115VAC		400	mA
	230VAC		250	mA
Inrush current	115VAC	18		A
	230VAC	35		A
Leakage	277VAC/50Hz		0.25	mA RMS
Input fuse	1A Slow-blow type, required			

Output Specifications

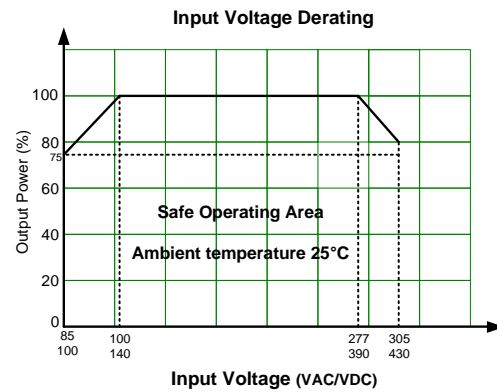
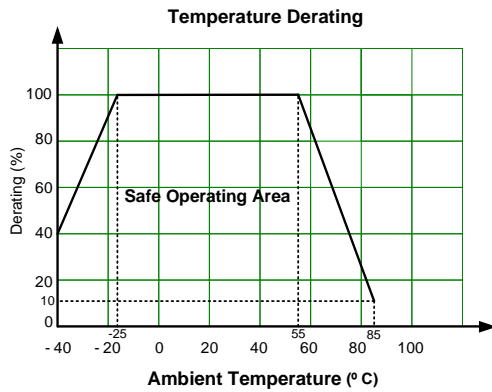
Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy	3.3Vout	± 3		%
	Others	± 2		%
Line regulation	Full load	± 0.5		%
Load regulation	0-100% load, 3.3Vout	± 2		%
	0-100% load, 5Vout	± 1.5		%
	0-100% load, others	± 1		%
Ripple & Noise	20MHz bandwidth	80	150	mV p-p
Hold-up time	115VAC	10		ms
	230VAC	40		ms

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

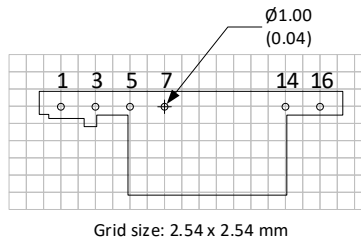
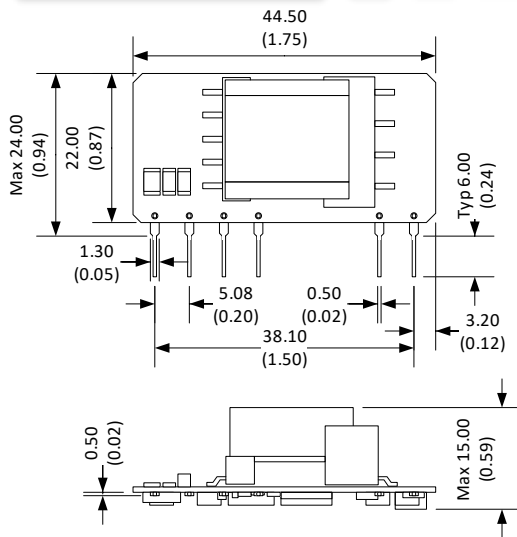
General Specifications				
Parameters	Conditions	Typical	Maximum	Units
Switching frequency		65		kHz
Operating temperature		-40 to +85		°C
Storage temperature		-40 to +105		°C
No-load power consumption	230VAC	0.1	0.25	W
Temperature coefficient		±0.02		% / °C
Short circuit protection	Hiccup, Continuous, Auto recovery			
Over current protection	Auto recovery	≥ 110		% of Iout
Over voltage protection	3.3/5Vout		9	VDC
	9Vout		12	VDC
	12Vout		16	VDC
	15Vout		20	VDC
	24Vout		30	VDC
Power derating	-40 °C to -25 °C	≥ 4		% / °C
	+55 °C to +70 °C	≥ 3.34		% / °C
	+70 °C to +85 °C	≥ 2.67		% / °C
	85VAC to 100VAC	≥ 1.67		% / VAC
	277VAC to 305VAC	≥ 0.72		% / VAC
Safety class	Class II			
Cooling	Free air convection			
Storage Humidity			95	% RH
Soldering temperature	Wave soldering, duration 5 to 10s	260 ± 5		°C
	Manual soldering, duration 3 to 5s	360 ± 10		°C
Weight		11		g
Dimensions (L x W x H)	1.75 x 0.94 x 0.60 inches (44.50 x 24.00 x 15.00mm)			
MTBF	> 1 000 000 hrs (MIL-HDBK -217F, t=+25°C)			
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		
Agency approvals	UL 62368-1	
Standards	Design to meet ICE/EN62368-1, EN60335 (With the recommended EMC circuit for 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 ±6KV, 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 circuit) IEC 61000-4-5 L-L ±2KV, Criteria B (With EMS Class IV circuit)
	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



Dimensions

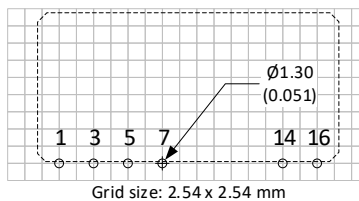
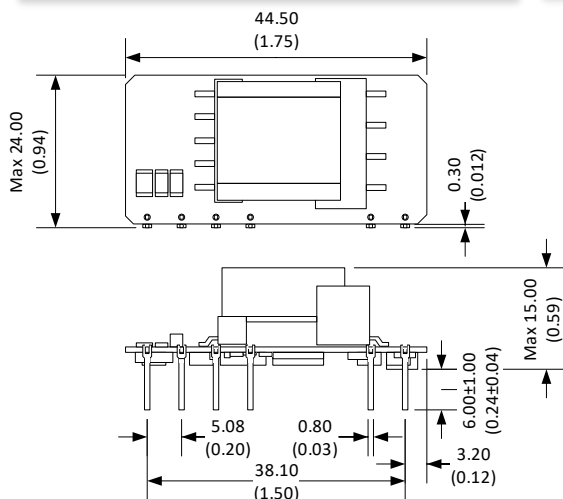


Pin Output Specifications	
Pin	Function
1	AC Input (N)
3	AC Input (L)
5	+V_Cap
7	-V_Cap
14	-V Output
16	+V Output

Note:

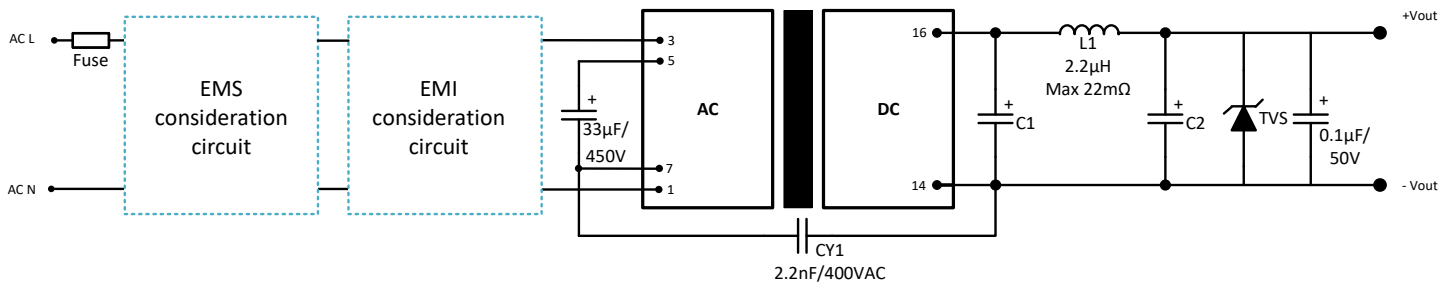
1. Capacitor between pin5 and pin7 is necessary.
2. External circuit on the output side is necessary. Please refer to the recommended circuit.
3. It is needed to have creepage $\geq 6.4\text{mm}$ and clearance $\geq 4\text{mm}$ for safety between external components in primary circuit and secondary circuit.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

Dimensions for L model



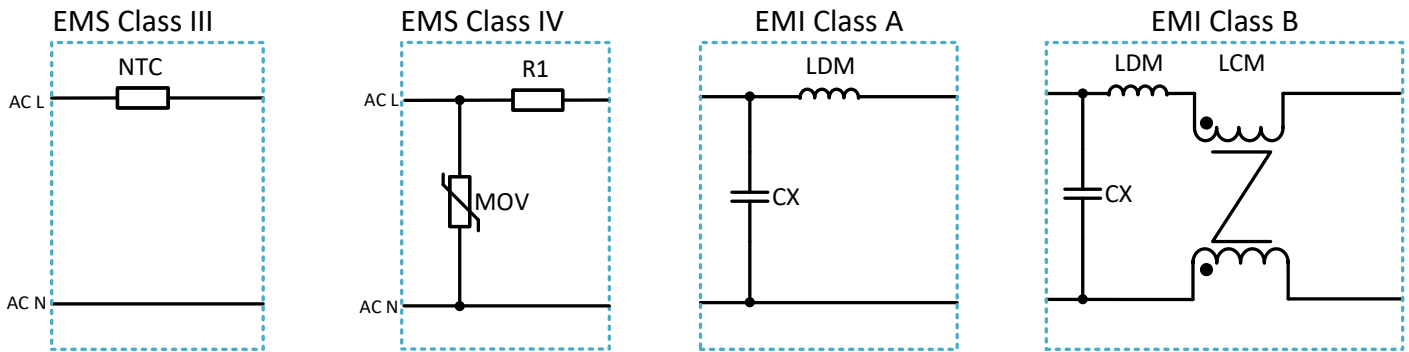
Note:
Unit: mm [inch]
Pin tolerance: ± 0.10 (± 0.004)
General tolerance: ± 0.50 (± 0.020)

Recommended EMC external circuit



A suppressor diode (TVS) with 1.2 times of the output voltage rating is recommended.
A inductor (L1) with 1.2 times of the output current rating is recommended.

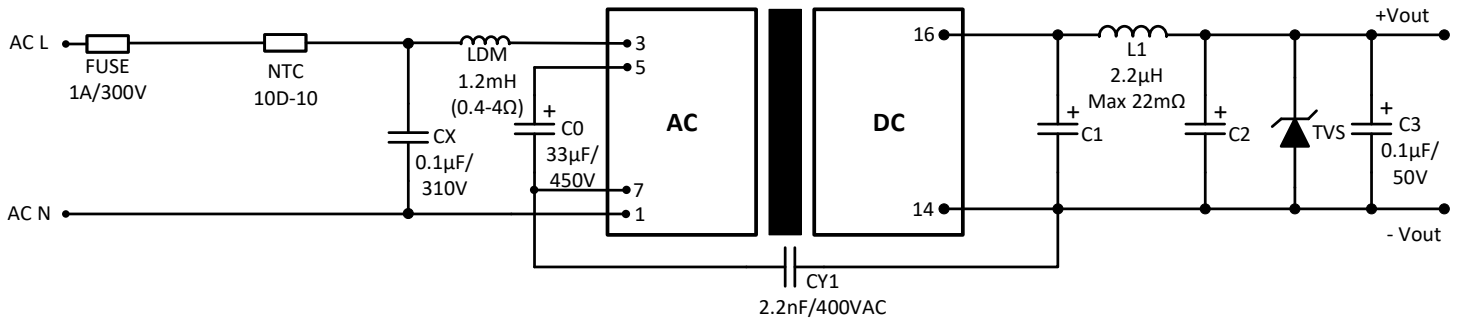
EMI & EMS Recommended Circuit



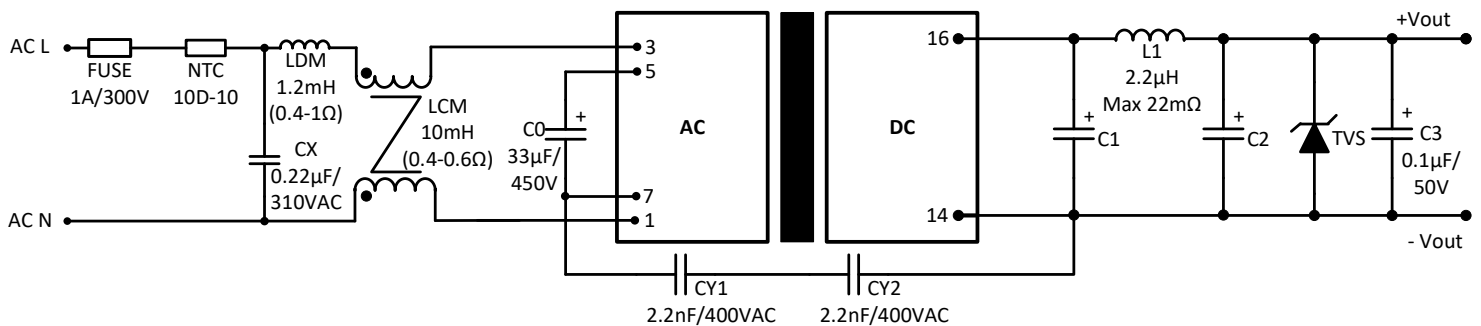
Component	EMS		EMI	
	Class III	Class IV	CLASS A	CLASS B
MOV	-	14D561K	-	-
R1	-	12Ω/3W	-	-
CX	-	-	0.1µF/310VAC	0.22µF/310VAC
NTC	10D-10	-	-	-
LCM	-	-	-	10mH (0.4-0.6Ω)
LDM	-	-	1.2Mh (0.4-4Ω)	0.33mH (0.4-1Ω)
FUSE	1A/300V	2A/300V	1A/300V	1A/300V

Model	C1	C2	TVS
3.3 VDC output	470µF/16V (Solid capacitor)	220µF/16V	7V
5 VDC output	470µF/16V (Solid capacitor)	220µF/16V	7V
9 VDC output	470µF/16V (Solid capacitor)	220µF/16V	12V
12 VDC output	470µF/16V (Solid capacitor)	220µF/16V	20V
15 VDC output	680µF/25V	220µF/35V	20V
24 VDC output	470µF/35V	220µF/35V	30V

Typical application circuit



Recommended EMC circuit for EN60335



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