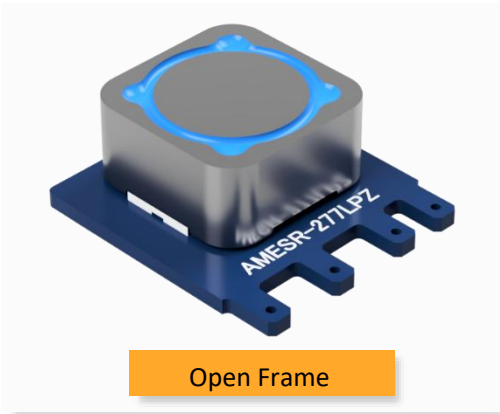


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**AMESR-277LPZ**



Aimtec's AMESR-277LPZ series is a highly efficient, non-isolated AC-DC Converter. It features an ultra-wide wide, 85-305VAC input range accepting either AC or DC voltage, high reliability and low power consumption. All models are particularly suitable for industrial controls, electric power, instrumentation, smart home applications and other applications requiring UL/CE certifications and that have low EMC requirements. We recommend using external components as shown in the recommended application circuit for enhanced EMC performance in harsh environmental conditions.

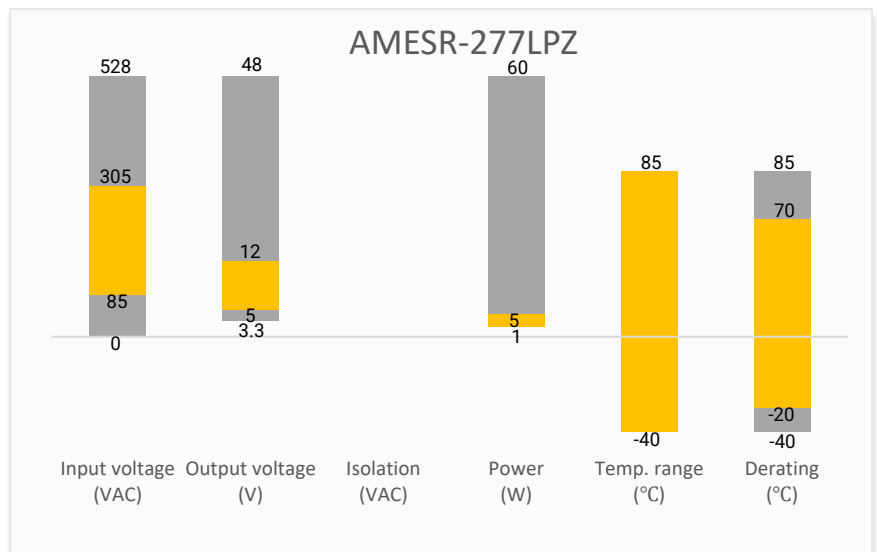
This new series offers an outstanding operating temperature range of -40°C to 85°C, a high MTBF of 1,000,000h, output short circuit protection (OSCP) and output over-current protection (OCP) come standard with the series.

**Features**



- Universal Input: 85 - 305VAC/ 70 - 430VDC
- Operating Temp: -40 °C to +85 °C
- Non-isolated
- Low ripple & noise: 150mV (p-p), max.

**Summary**



**Training**



Product Training Video  
(click to open)



Press Release

Coming Soon!

Application Notes

**Applications**



Power Grid



Industrial



Telecom



Instrumentation

## Models & Specifications

### Single Output

Model	Input Voltage (VAC/Hz)	Input Voltage (VDC)	Output Power (W)	Output Voltage (V)	Output Current max (mA)	Maximum capacitive load ( $\mu$ F)	Efficiency @ 230VAC Typ. (%)
AMESR-1-5S277LPZ	85~305/47~63	70-430	1	5	200	500	60
AMESR-2.5-5S277LPZ	85~305/47~63	70-430	2.5	5	500	680	67
AMESR-3-12S277LPZ	85~305/47~63	70-430	3	12	250	330	73
AMESR-4-12S277LPZ	85~305/47~63	70-430	4	12	330	160	75
AMESR-5-15S277LPZ	85~305/47~63	70-430	5	15	330	160	76
AMESR-5-18S277LPZ	85~305/47~63	70-430	5	18	280	160	77

### Input Specifications

Parameters	Conditions	Typical	Maximum	Units
Input Current	115VAC, AMESR-2.5-5S277LPZ		120	mA
	115VAC, others		200	mA
	230VAC		140	mA
	277VAC		60	mA
Inrush Current	115VAC	25		A
	277VAC	40		A
External Input Fuse	1A/300V, slow-blow type			

### Output Specifications

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy	10%~100% load, AMESR-2.5-5S277LPZ		-7/+5	%
	10%~100% load, others	$\pm 5$	$\pm 8$	%
Line regulation	Full load, AMESR-2.5-5S277LPZ	$\pm 2.5$		%
	Full load, others	$\pm 1.5$		%
Load regulation	10%~100% load, AMESR-2.5-5S277LPZ	$\pm 2.5$		%
	10%~100% load, others	$\pm 3$		%
Ripple & Noise	20MHz bandwidth, AMESR-2.5-5S277LPZ	80	150	mV p-p
	20MHz bandwidth, others	50	150	mV p-p
No load power consumption	230VAC, AMESR-2.5-5S277LPZ	0.1	0.3	W
	230VAC, others	0.1	0.4	W

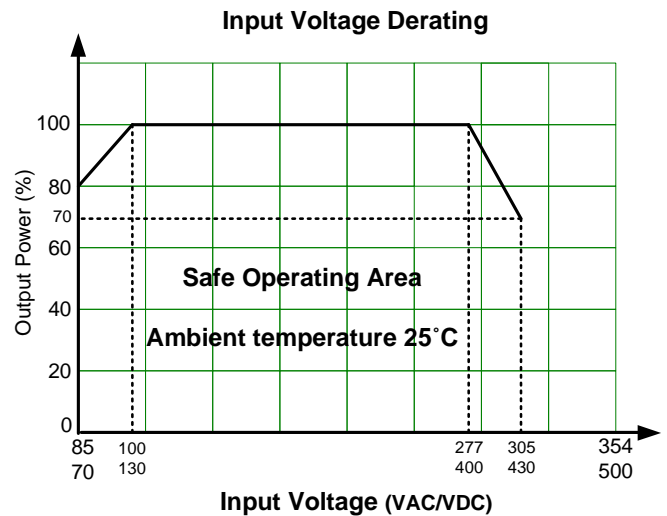
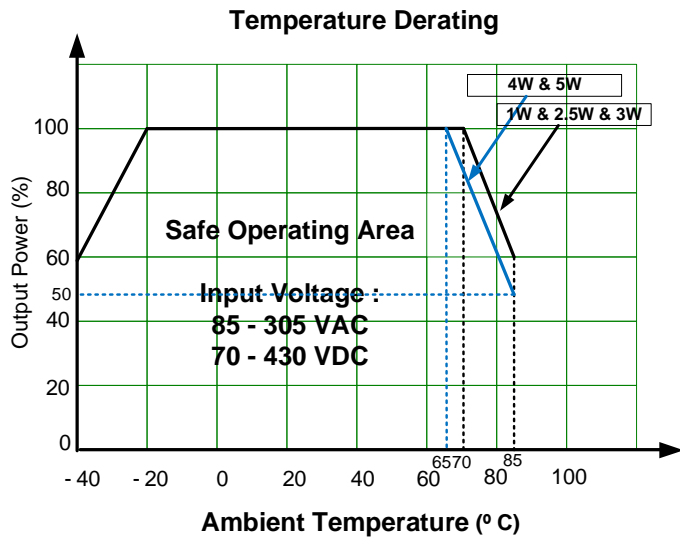
### General Specifications

Parameters	Conditions	Typical	Maximum	Units
Over Current protection	auto recovery, AMESR-2.5-5S277LPZ	$\geq 120$		% of Iout
	auto recovery, others	$\geq 110$		% of Iout
Short circuit protection	Hiccup, Continuous, auto recovery			
Operating temperature		-40 to +85		$^{\circ}$ C
Storage temperature		-40 to +105		$^{\circ}$ C
Power derating	-40 $^{\circ}$ C to -20 $^{\circ}$ C	2		% / $^{\circ}$ C

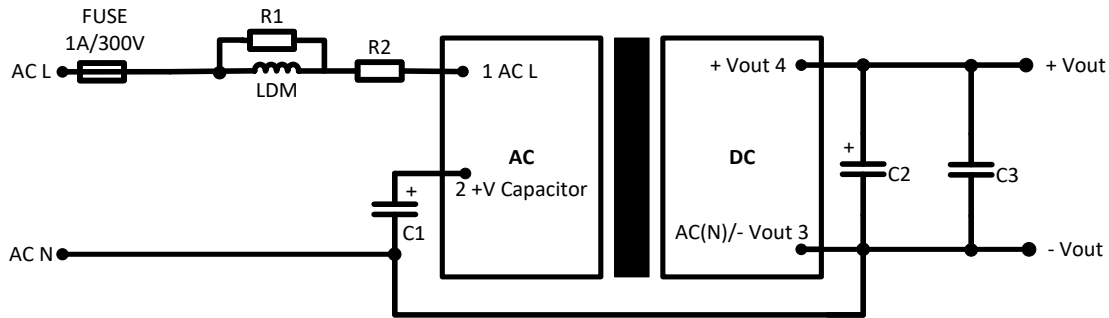
	+70°C to +85°C, 1W & 2.5W & 3W	2.67		% / °C
	+65°C to +85°C, 4W & 5W	2.5		% / °C
	85VAC - 100 VAC	1.33		% / VAC
	277VAC - 305 VAC	1.1		% / VAC
Temperature coefficient		±0.15		% / °C
Minimum load		≥10		%
Cooling	Free air convection			
Storage Humidity			95	% RH
Weight	AMESR-2.5-5S277LPZ	5.5		g
	others	4.2		g
Dimensions (L x W x H)	AMESR-2.5-5S277LPZ	0.63 x 0.59 x 0.45 inches (16.1 x 15.1 x 11.50 mm)		
	others	0.63 x 0.59 x 0.37 inches (16.1 x 15.1 x 9.50 mm)		
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	
Standards	Designed to meet IEC/EN/UL 62368-1 EMC - Conducted and radiated emission CISPR32 / EN55032 Class B with EMC recommend circuit

## Derating

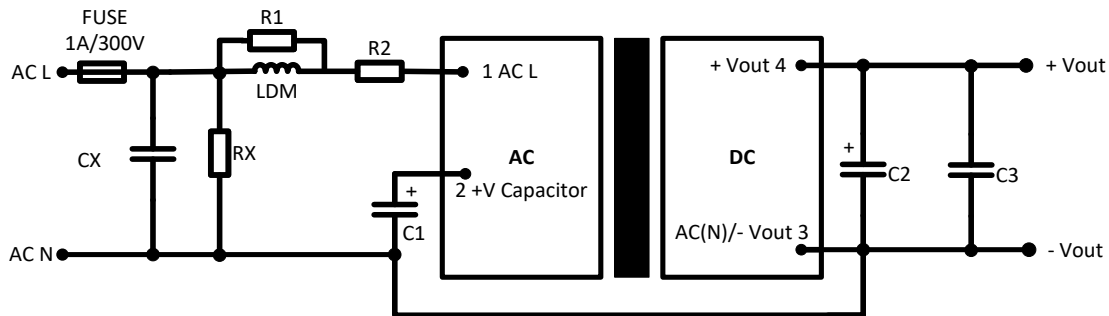


## Typical Application Circuit



Model	LDM	R1	R2	C1	C2	C3
AMESR-1-5S277LPZ	1.2mH	-	-	22μF/450V	220μF/16V	-
AMESR-2.5-5S277LPZ	1.2mH	-	-	22μF/450V	680μF/16V	-
AMESR-3-12S277LPZ	1.2mH	-	-	22μF/450V	220μF/16V	-
AMESR-4-12S277LPZ	2.2mH	8.2KΩ/0.25W	2Ω/2W	22μF/450V	470μF/35V	0.1μF/50V
AMESR-5-15S277LPZ	2.2mH	8.2KΩ/0.25W	2Ω/2W	22μF/450V	470μF/35V	0.1μF/50V
AMESR-5-18S277LPZ	2.2mH	8.2KΩ/0.25W	2Ω/2W	22μF/450V	470μF/35V	0.1μF/50V

## EMC Recommended Circuit

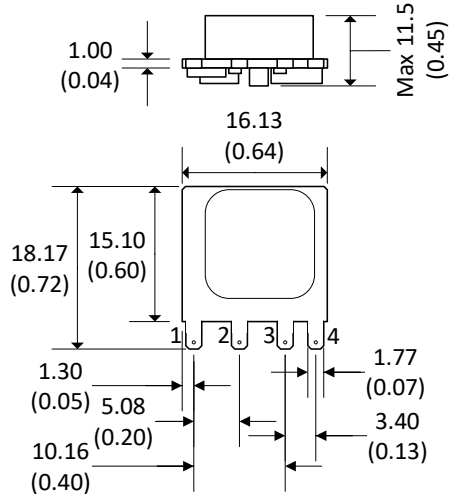


Model	LDM	R1	R2	C1	C2	C3	CX	RX
AMESR-1-5S277LPZ	1.2mH	-	-	22μF/450V	220μF/16V	-	0.1μF/310VAC	5MΩ~8MΩ
AMESR-2.5-5S277LPZ	1.2mH	-	-	22μF/450V	680μF/16V	-	0.1μF/310VAC	-
AMESR-3-12S277LPZ	1.2mH	-	-	22μF/450V	220μF/16V	-	0.1μF/310VAC	5MΩ~8MΩ
AMESR-4-12S277LPZ	2.2mH	8.2KΩ/0.25W	2Ω/2W	22μF/450V	470μF/35V	0.1μF/50V	0.1μF/310VAC	5MΩ~8MΩ
AMESR-5-15S277LPZ	2.2mH	8.2KΩ/0.25W	2Ω/2W	22μF/450V	470μF/35V	0.1μF/50V	0.1μF/310VAC	5MΩ~8MΩ
AMESR-5-18S277LPZ	2.2mH	8.2KΩ/0.25W	2Ω/2W	22μF/450V	470μF/35V	0.1μF/50V	0.1μF/310VAC	5MΩ~8MΩ

## Dimensions



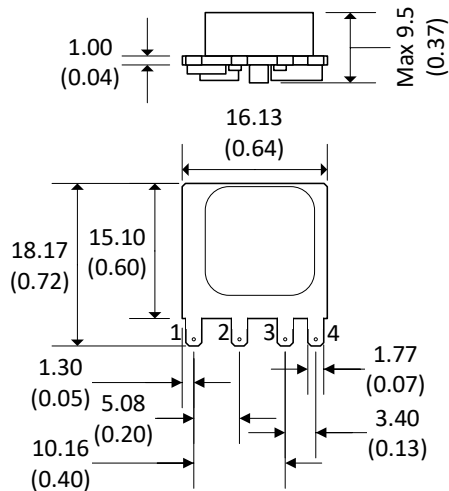
### AMESR-2.5-5S277LPZ



Unit: mm(inch)  
General tolerance:  $\pm 1.0(0.04)$   
Pin diameter tolerance:  $\pm 0.10 (\pm 0.004)$

Pin Output Specifications	
Pin	Function
1	Input (L)
2	+V Capacitor
3	Input (N)/-V Output
4	+V Output

## Others



Unit: mm(inch)  
General tolerance:  $\pm 1.0(0.04)$   
Pin diameter tolerance:  $\pm 0.10 (\pm 0.004)$

Pin Output Specifications	
Pin	Function
1	Input (L)
2	+V Capacitor
3	Input (N)/-V Output
4	+V Output

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