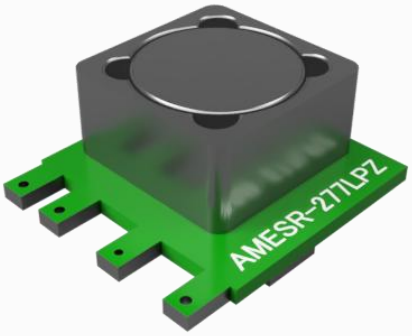
AMESR-277LPZ

Click to ORDER samples



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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℃ to 85℃, a high MTBF of 1,000,000h, output short circuit protection (OSCP) and output over-current protection (OCP) come standard with the series.

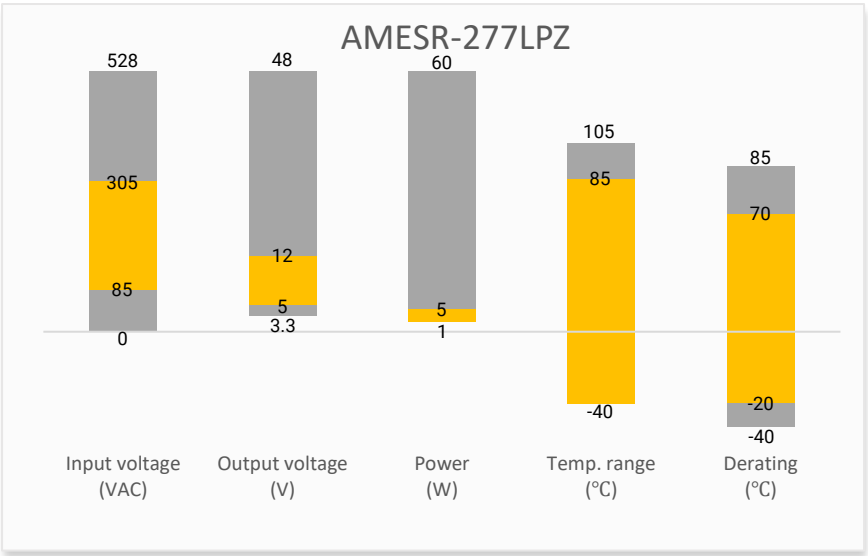
Features

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

RoHS

3yr Warranty

Summary



Training

Product Training Video (click to open)

Press Release

Coming Soon!

Application Notes

Applications

Power Grid

Industrial

Telecom

Instrumentation

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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 (µF)	Efficiency @ 230VAC Typ. (%)
AMESR-1-5S277LPZ	85~305/47~63	70-430	1	5	200	500	56
AMESR-2.5-5S277LPZ	85~305/47~63	70-430	2.5	5	500	680	68
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, AMESR-2.5-5S277LPZ		60	mA
	277VAC		100	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	± 5	± 6	%
	10%~100% load, others	± 5	± 8	%
Line regulation	Full load	± 1.5		%
Load regulation	10%~100% load, AMESR-2.5-5S277LPZ	± 2.5		%
	10%~100% load, others	± 4		%
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	0.15	W
	230VAC, others	0.1	0.4	W
* Ripple and noise measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 1uF ceramic capacitor and a 10uF electrolytic capacitor in parallel.				

General Specifications				
Parameters	Conditions	Typical	Maximum	Units
Over Current protection	auto recovery, AMESR-2.5-5S277LPZ	≥ 120		% of Iout
	auto recovery, others	≥ 110		% of Iout
Short circuit protection	Hiccup, Continuous, auto recovery			
Operating temperature		-40 to +85		°C

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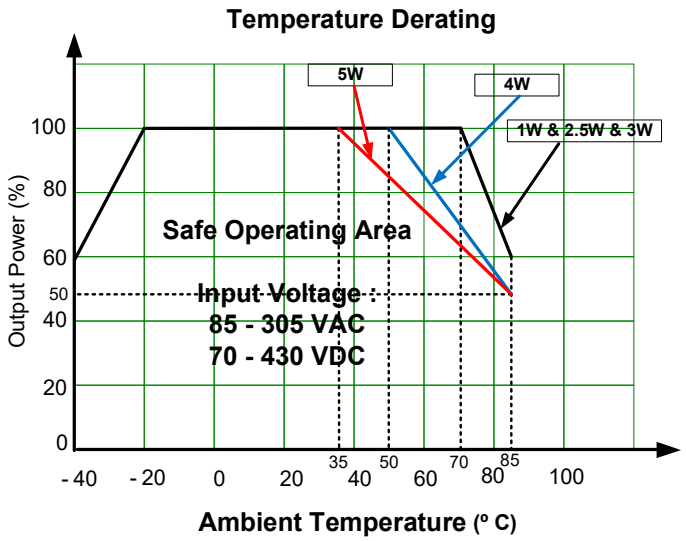
Storage temperature		-40 to +105		°C
Power derating	-40°C to -20°C	2		% / °C
	+70°C to +85°C, 1W & 2.5W & 3W	2.67		% / °C
	+50°C to +85°C, 4W	1.43		% / °C
	+35°C to +85°C, 5W	1		% / °C
	85VAC - 100 VAC	1.33		% / VAC
	277VAC - 305 VAC	1.1		% / VAC
Temperature coefficient		±0.15		% /°C
Minimum load		≥10		%
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 (16.13 x 15.10 x 11.50 mm)		
	others	0.63 x 0.59 x 0.37 inches (16.13 x 15.10 x 9.50 mm)		
MTBF	> 1 000 000 hrs (MIL-HDBK -217F, t=+25°C)			

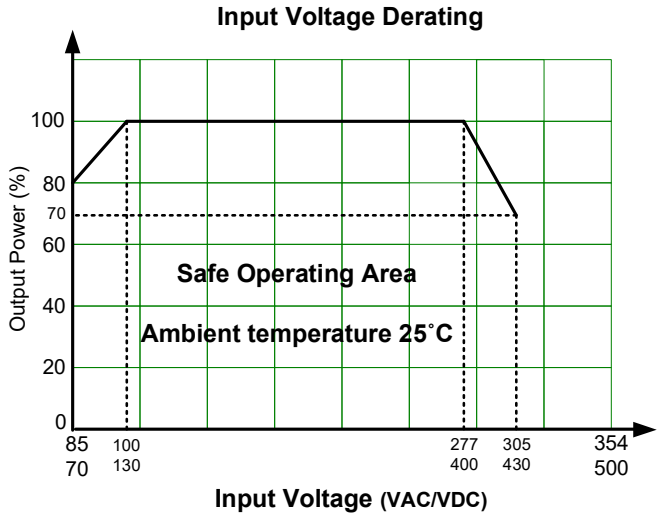
NOTE: All specifications in this datasheet are measured at an ambient temperature of 25°C, humidity<75%, nominal input voltage and at rated output load unless otherwise specified.

Safety Specifications

Parameters		
Standards	Designed with reference to IEC/EN/UL 62368-1 standard	
	EMC - Conducted and radiated emission	CISPR32 / EN55032 Class B with EMC recommend circuit
	Electrostatic Discharge Immunity	IEC 61000-4-2 Contact ±6KV, with typical application circuit, Criteria B
	RF, Electromagnetic Field Immunity	IEC 61000-4-3 10V/m, with EMC recommend circuit, Criteria A
	Electrical Fast Transient/Burst Immunity	IEC 61000-4-4 ±2KV, with typical application circuit, Criteria B IEC 61000-4-4 ±4KV, with EMC recommend circuit, Criteria B
	Surge Immunity	IEC 61000-4-5 L-L ±1KV, with typical application circuit, Criteria B
	CS, Conducted Disturbance Immunity	IEC 61000-4-6 10Vr.m.s, with EMC recommend circuit, Criteria A
	Voltage dips, Short Interruptions Immunity	IEC 61000-4-11 0%, 70%, with EMC recommend circuit, Criteria B

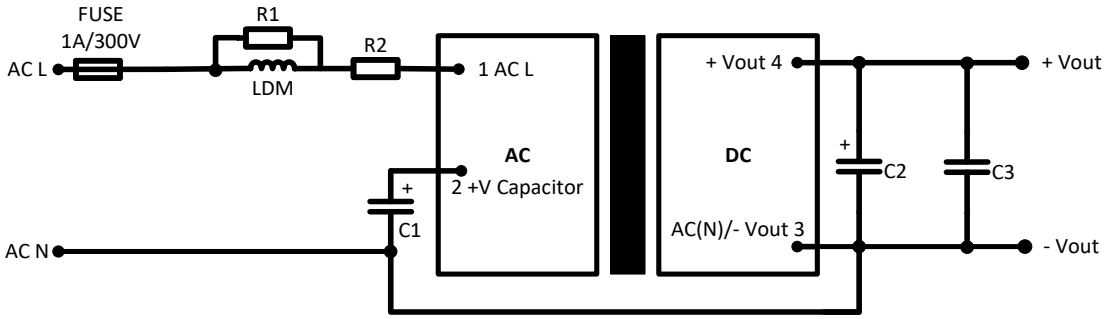
Derating





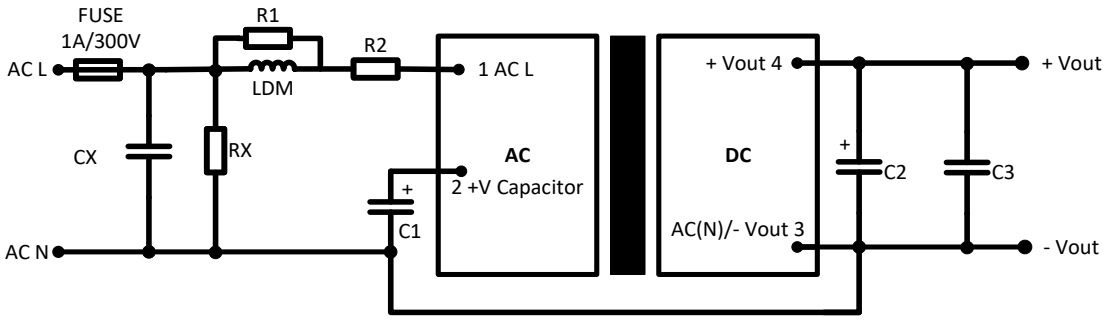
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Typical Application Circuit



Model	LDM	R1	R2	C1	C2	C3
AMESR-1-5S277LPZ	1.2mH, 0.2A	-	-	22μF/450V	220μF/16V	-
AMESR-2.5-5S277LPZ	1.2mH, 0.2A	-	-	15μF/450V	680μF/10V	-
AMESR-3-12S277LPZ	1.2mH, 0.2A	-	-	22μF/450V	220μF/16V	-
AMESR-4-12S277LPZ	2.2mH, 0.24A	8.2KΩ/0.25W	2Ω/2W	22μF/450V	470μF/35V	0.1μF/50V
AMESR-5-15S277LPZ	2.2mH, 0.24A	8.2KΩ/0.25W	2Ω/2W	22μF/450V	470μF/35V	0.1μF/50V
AMESR-5-18S277LPZ	2.2mH, 0.24A	8.2KΩ/0.25W	2Ω/2W	22μF/450V	470μF/35V	0.1μF/50V

EMC Recommended Circuit

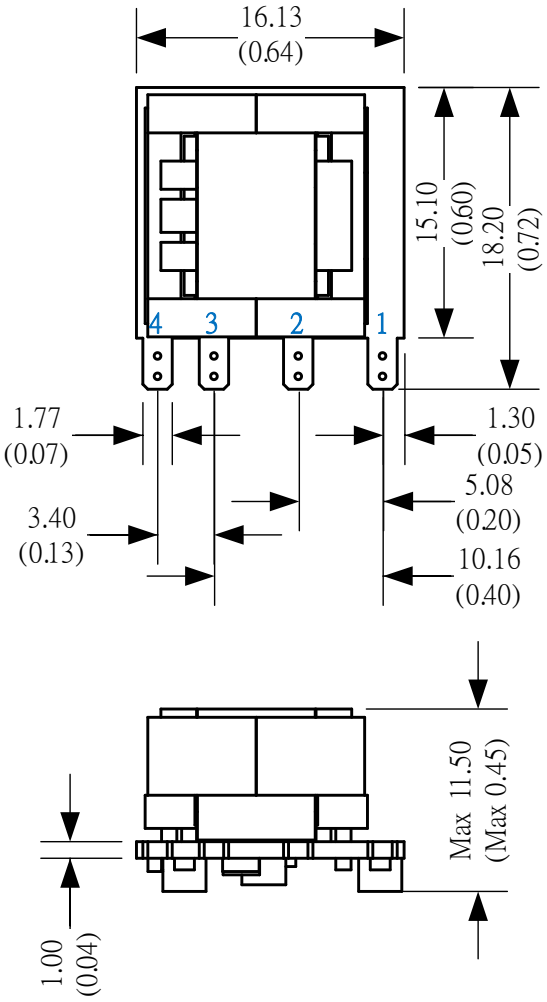


Model	LDM	R1	R2	C1	C2	C3	CX	RX
AMESR-1-5S277LPZ	1.2mH, 0.2A	-	-	22μF/450V	220μF/16V	-	0.1μF/310VAC	5MΩ~8MΩ
AMESR-2.5-5S277LPZ	1.2mH, 0.2A	-	-	15μF/450V	680μF/10V	-	0.1μF/310VAC	-
AMESR-3-12S277LPZ	1.2mH, 0.2A	-	-	22μF/450V	220μF/16V	-	0.1μF/310VAC	5MΩ~8MΩ
AMESR-4-12S277LPZ	2.2mH, 0.24A	8.2KΩ/0.25W	2Ω/2W	22μF/450V	470μF/35V	0.1μF/50V	0.1μF/310VAC	5MΩ~8MΩ
AMESR-5-15S277LPZ	2.2mH, 0.24A	8.2KΩ/0.25W	2Ω/2W	22μF/450V	470μF/35V	0.1μF/50V	0.1μF/310VAC	5MΩ~8MΩ
AMESR-5-18S277LPZ	2.2mH, 0.24A	8.2KΩ/0.25W	2Ω/2W	22μF/450V	470μF/35V	0.1μF/50V	0.1μF/310VAC	5MΩ~8MΩ

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Dimensions

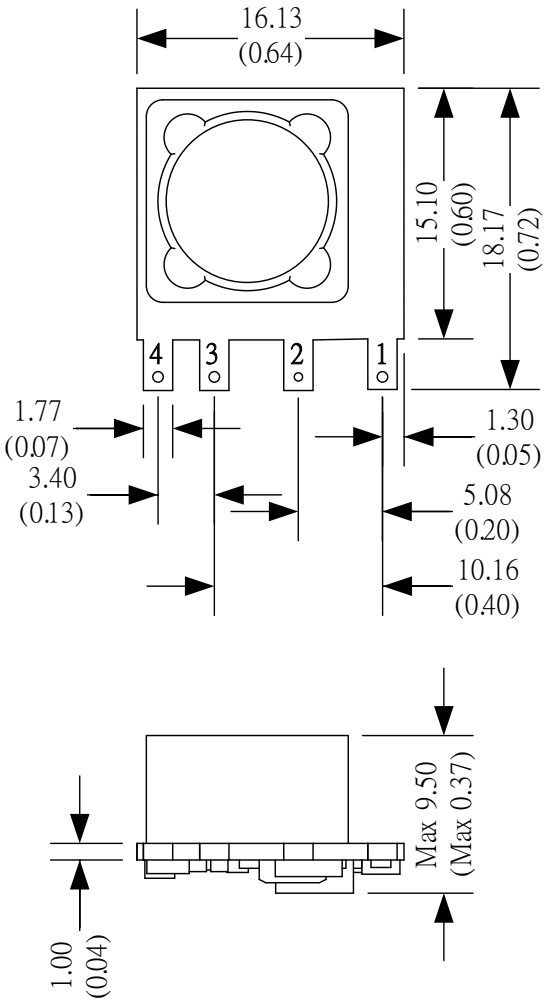
AMESR-2.5-5S277LPZ



Unit: mm(inch)
General tolerance: ±1.00(±0.04)
Pin diameter tolerance: ±0.10 (±0.004)

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

Others

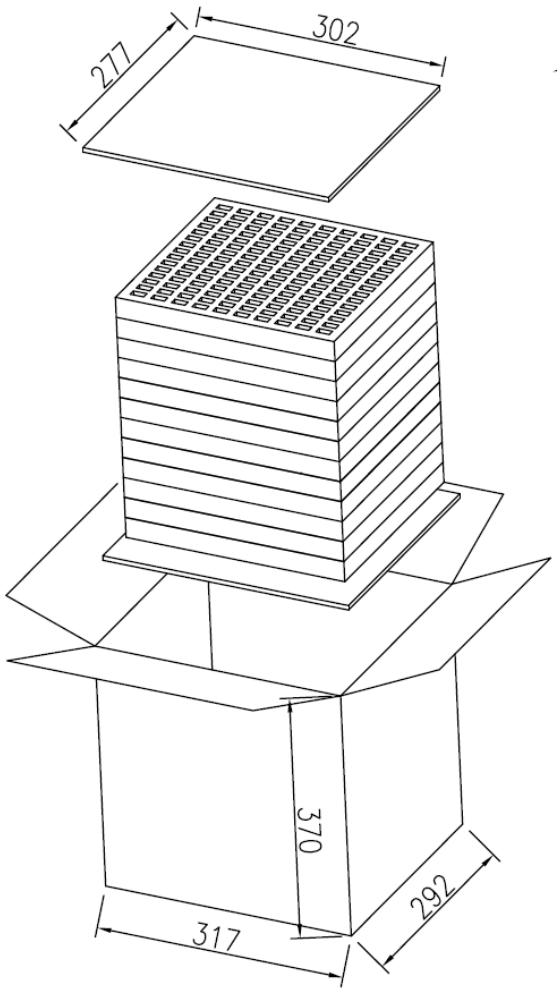


Unit: mm(inch)
General tolerance: ±0.50(±0.02)
Pin diameter tolerance: ±0.10 (±0.004)

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

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Packing



Packing information:

- CARTON : L*W*H=317*292*370
- CLAPBOARD : 302*277
- QTY : 150*12=1800PCS
- UNIT : mm

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 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 environments, nuclear control systems or other such applications which necessitate specific safety and regulatory standards other the ones listed in this datasheet. **7.** Warranty is in accordance with Aimtec's standard Terms of Sale available at www.aimtec.com.

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