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## AMEL60-277HAVZ



Encapsulated

The AMEL60-277HAVZ series is an efficient 60W AC-DC power supply module. Offering a wide commercial input voltage range of 85-305VAC, output voltage ranges from 5-55.5V, low power consumption, high efficiency, high reliability and safer isolation.

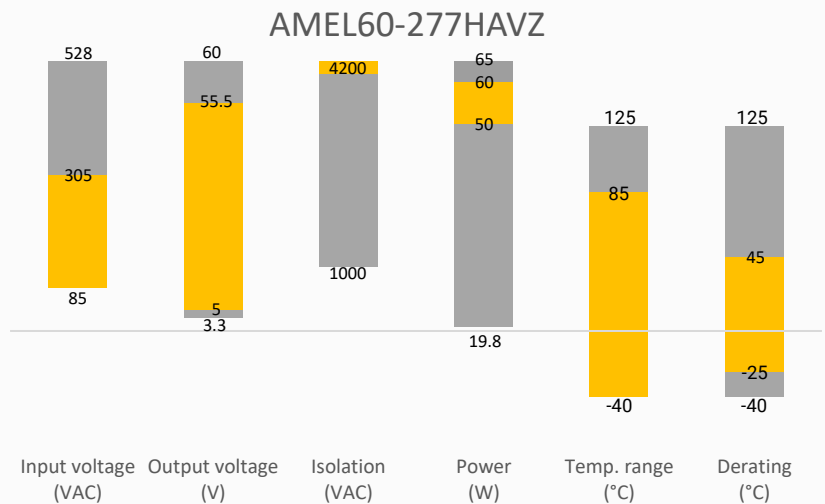
This new series offers great operating temperatures, from -40°C to 85°C with full power from -25°C to 45°C and features an isolation of 4200VAC with OVCIII rating for improved reliability and system safety. Additionally, it has 2000m-5000m operational altitude derating. Furthermore, a high MTBF of 1,000,000h, output short circuit protection (OSCP), output over-current protection (OCP) and an output over-voltage protection (OVP) come standard with the series.

The AMEL60-277HAVZ is great for grid power, industrial instrumentation and controls, communication, and civil applications.

## Features

- Universal Input: 85 - 305VAC/100 - 430VDC
- Operating Temp: -40 °C to +85 °C
- High isolation voltage: 4200VAC
- Low ripple & noise, 150mV(p-p) max.
- Output short circuit, over-current, over-voltage protection
- Low no-load power consumption of 0.1W(typical)
- Efficiency up to 91%
- Designed to meet IEC/EN 62368-1, EN60335-1, EN61558-1

## Summary



## Training



Product Training Video  
(coming soon)



Press Release

Coming Soon!

Application Notes

## Applications



Power Grid



Industrial



Telecom

## 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 Typ. (%)
AMEL60-5S277HAVZ	85-305/47-63	100-430	50	5	10	20000	89
AMEL60-12S277HAVZ	85-305/47-63	100-430	60	12	5	5000	92
AMEL60-15S277HAVZ	85-305/47-63	100-430	60	15	4	3000	92
AMEL60-24S277HAVZ	85-305/47-63	100-430	60	24	2.5	1800	91
AMEL60-48S277HAVZ	85-305/47-63	100-430	60	48	1.25	470	91
AMEL60-55S277HAVZ	85-305/47-63	100-430	60	55.5	1.09	470	91

### Input Specifications

Parameters	Conditions	Typical	Maximum	Units
Input current	115VAC	--	1.8	A
	230VAC	--	1	A
Inrush current	115VAC	40	--	A
	230VAC	60	--	A
Leakage	277VAC, 50Hz	--	0.1	mA RMS
Hot Plug	Unavailable			
Fuse	3.15A/300V, Slow blow, built-in			
Input filter	Built-in EMC filter			

### Output Specifications

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy	--	±2	--	%
Line regulation	Full load	±1	--	%
Load Regulation	0%-100% load	±1.5	--	%
Ripple & Noise*	20MHz bandwidth	80	150	mV <sub>p-p</sub>
Hold up time	115VAC	8	--	ms
	230VAC	60	--	ms

\* Ripple and Noise are measured at 20MHz bandwidth by using a 12" twisted pair-wire with a 47μF electrolytic capacitor and a 0.1μF ceramic capacitor.

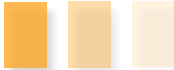
### Isolation Specification

Parameters	Conditions	Typical	Maximum	Units
Tested I/O voltage	60 sec, leakage ≤ 5mA	4200	--	VAC
Resistance	500VDC	>100	--	MΩ

General Specifications				
Parameters	Conditions	Typical	Maximum	Units
Protection class	Class II			
Oversvoltage category	OVC III			
Switching frequency	--	65	--	KHz
Over current protection	Auto recovery	≥ 140	--	% of Iout
Over voltage protection	5Vout, voltage clamp, hiccup	--	9	VDC
	12Vout, voltage clamp, hiccup	--	16	VDC
	15Vout, voltage clamp, hiccup	--	25	VDC
	24Vout, voltage clamp, hiccup	--	35	VDC
	48Vout, voltage clamp, hiccup	--	60	VDC
	55.5Vout, voltage clamp, hiccup	--	70	VDC
Short circuit protection	Hiccup, Continuous, Auto recovery			
Operating temperature	See derating graph	-40 to +85	--	°C
Storage temperature		-40 to +105	--	°C
Wave soldering temperature	Duration 5 - 10s	260 ± 5	--	°C
Manual soldering temperature	Duration 3 - 5s	360 ± 10	--	°C
No-load power consumption	230VAC	0.1	--	W
Power Derating	-40 °C to -25 °C, 85VAC to 200VAC Input	3.33	--	%/°C
	-40 °C to -25 °C, 200VAC to 305VAC Input	1.33	--	%/°C
	+45 °C to +70 °C	1.8	--	%/°C
	+70°C to +85°C	2	--	%/°C
	85VAC to 100VAC	1.33	--	%/VAC
	277VAC to 305VAC	0.72	--	%/VAC
	2000 - 5000m	6.67	--	%/km
Temperature coefficient	--	±0.02	--	%/°C
Maximum case temperature	--	--	95	°C
Altitude	See derating graph	--	5000	m
Vibration	10Hz to 55Hz, 5G, 30minutes along X, Y and Z axis			
Cooling	Free air convection			
Humidity	Non-condensing	> 10	95	% RH
Case material	Black Plastic (flammability to UL 94V-0)			
Weight	PCB mountable models	180	--	g
Dimensions (L x W x H)	PCB mountable models	2.76 x 1.88 x 1.06 (inches), 70.00 x 48.00 x 27.00 (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.				

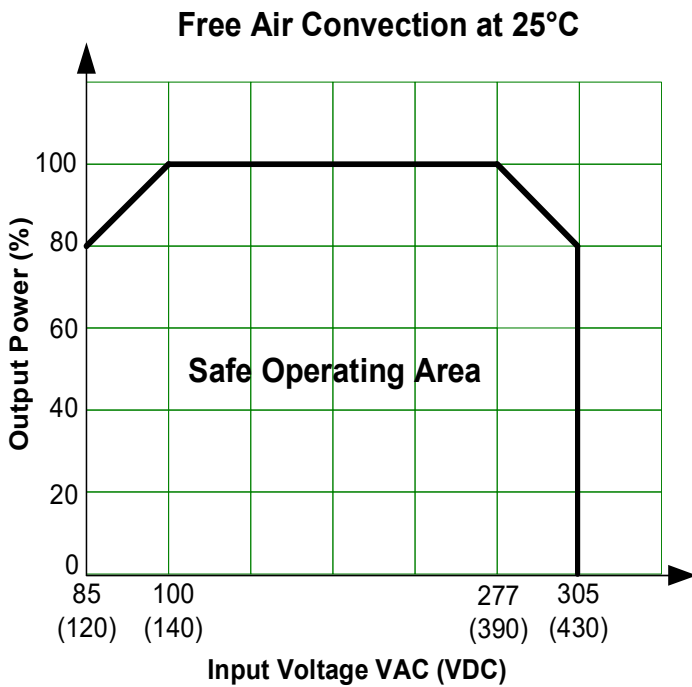
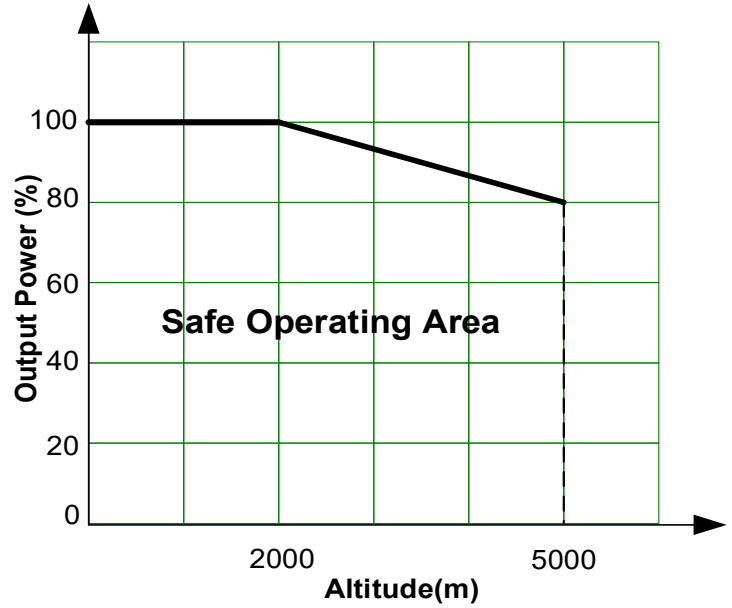
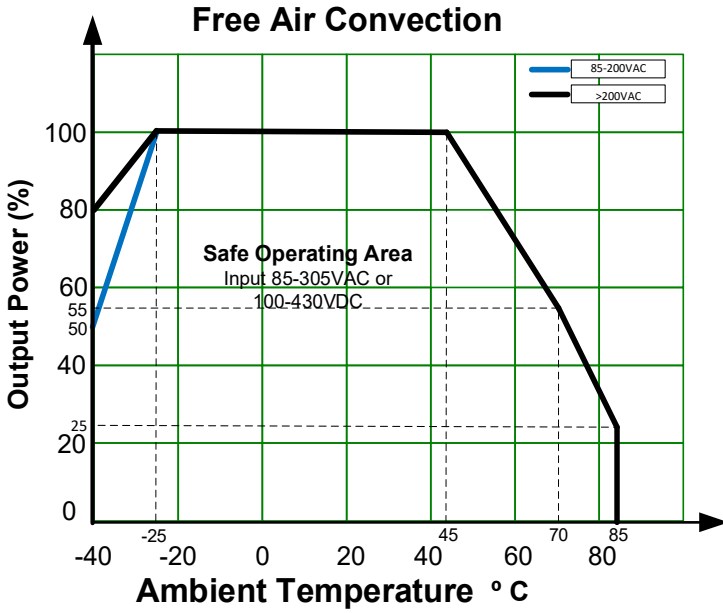
Safety Specifications		
Parameters		
Agency approval	UL 62368-1	
Standards	Information technology Equipment	Designed to meet IEC/EN 62368-1, UKCA, EN60335-1, EN61558-1
	EMC - Conducted and radiated emission	CISPR32 / EN55032, class B (without external circuit)
	Electrostatic Discharge Immunity	IEC/EN 61000-4-2 Contact ±6KV, Air ±8KV, Criteria B
	RF, Electromagnetic Field Immunity	IEC/EN 61000-4-3 10V/m, Criteria A
	Electrical Fast Transient/Burst Immunity	IEC/EN 61000-4-4 ±2KV, Criteria B
	Surge Immunity	IEC/EN 61000-4-5 L-L ±2KV, Criteria B
	RF, Conducted Disturbance Immunity	IEC/EN 61000-4-6 10Vr.m.s, Criteria A
	Voltage dips, Short Interruptions Immunity	IEC/EN 61000-4-11 0%, 70%, Criteria B

Derating

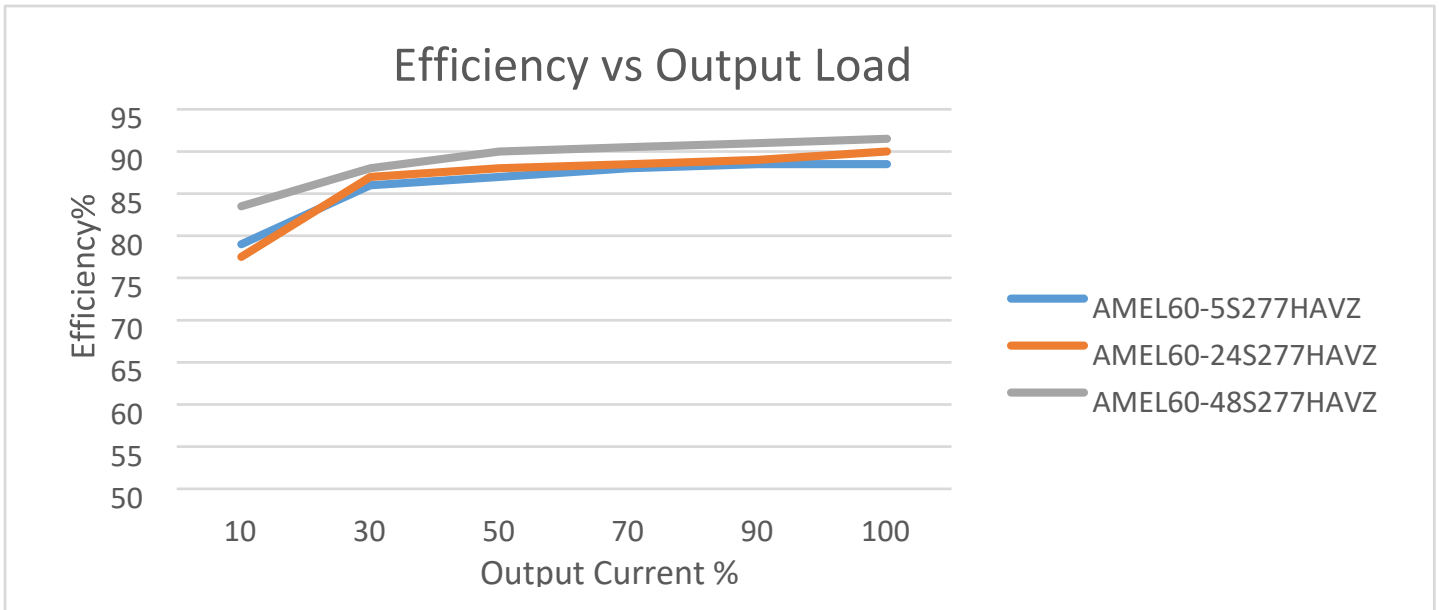
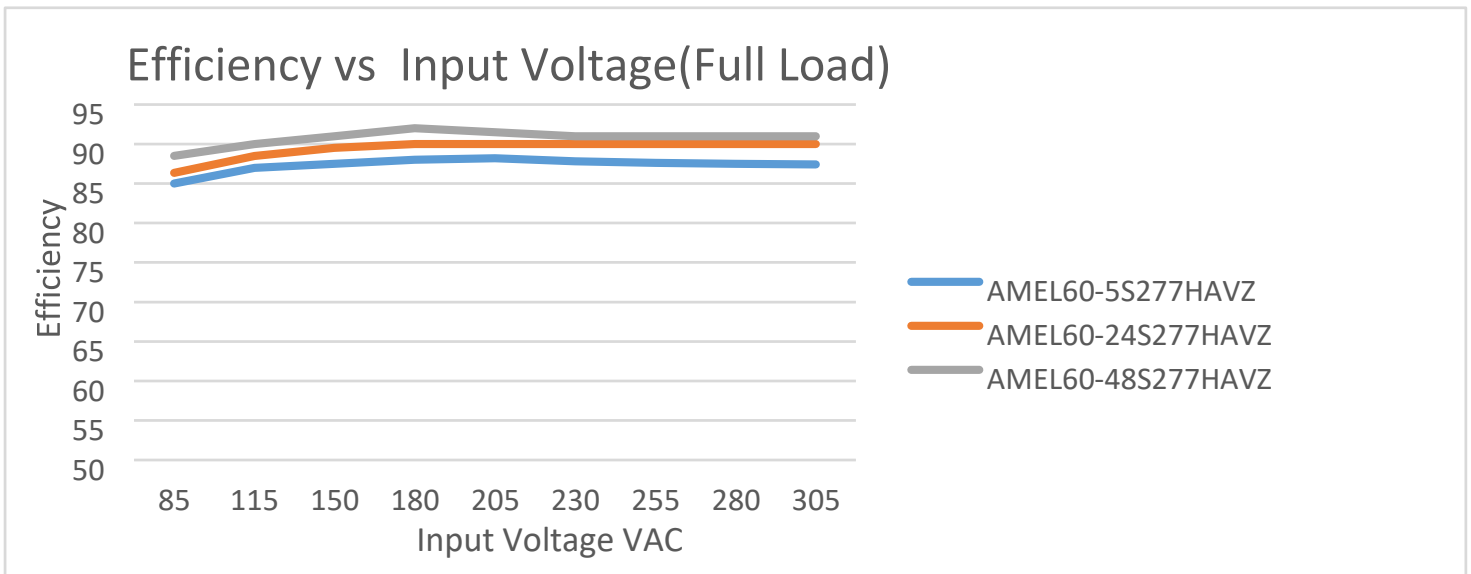


Thermal Derating

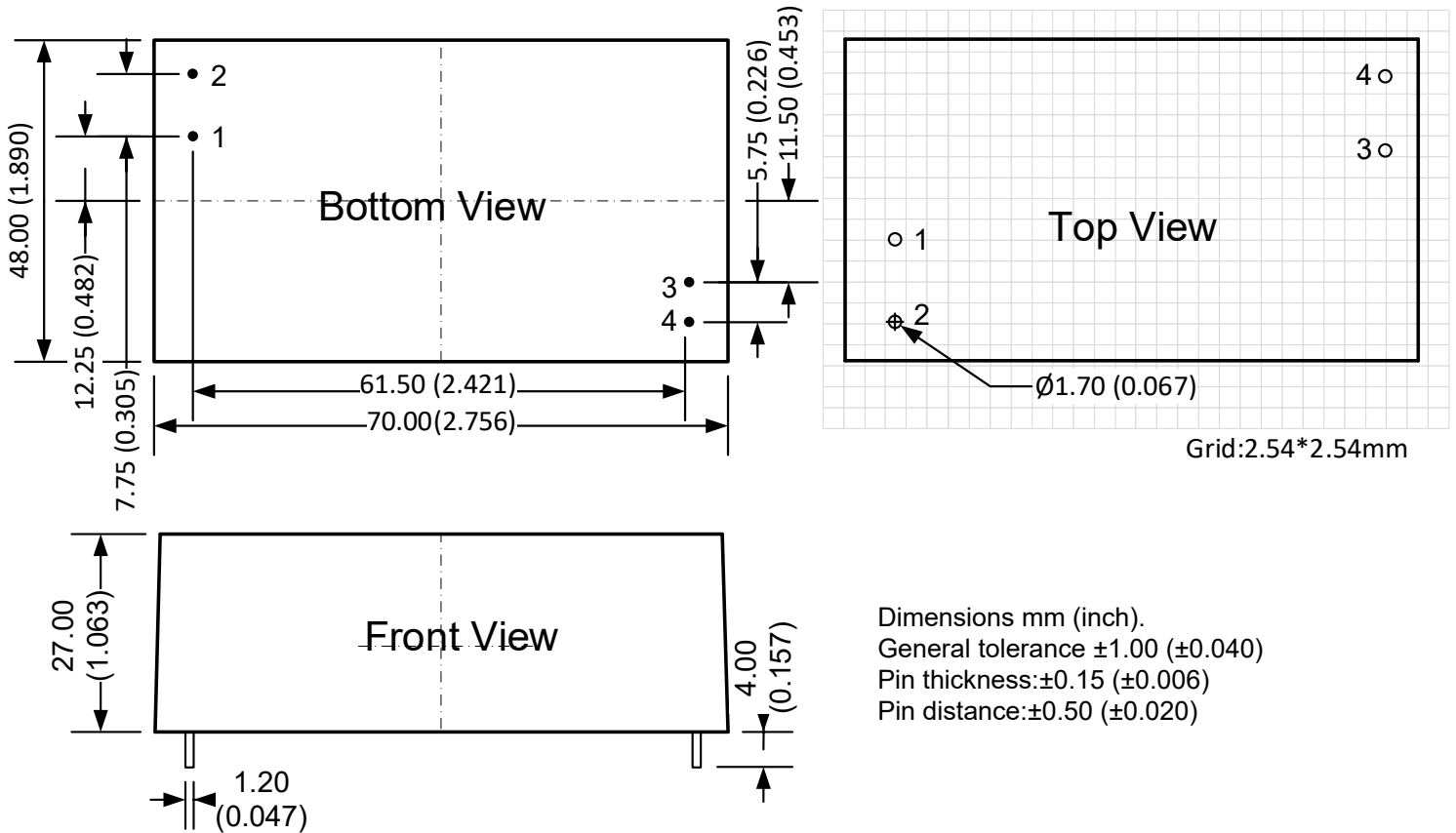
Altitude Derating



Efficiency curves



## Dimensions



### Pin Output Specifications

Pin	Function
1	AC Input (N)
2	AC Input (L)
3	-V Output
4	+V Output

**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](http://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 than the ones listed in this datasheet. 7. Warranty is in accordance with Aimtec's standard Terms of Sale available at [www.aimtec.com](http://www.aimtec.com).