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AMEL15-277HALPZ

Encapsulated

The AMEL15-277HALPZ series is an efficient 15W AC-DC power supply module that offers a commercial input voltage range of 85-305VAC, output voltage ranges from 3.3-24V, low power consumption, high efficiency, high reliability and safer isolation.

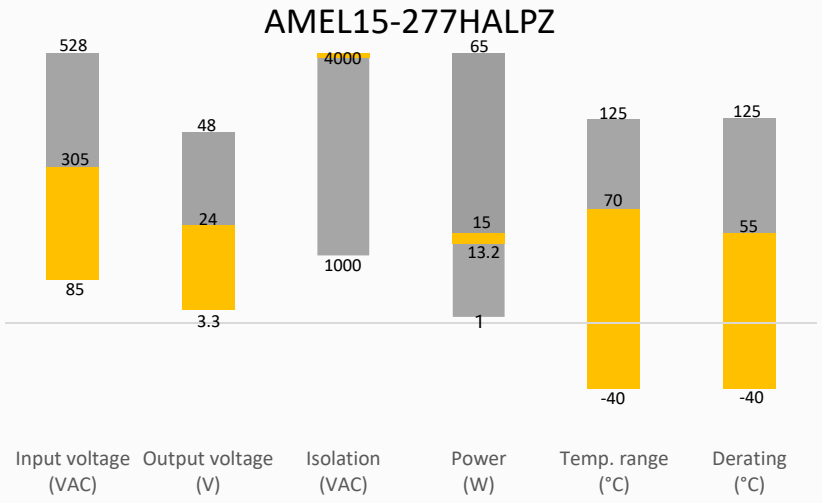
This series has great operating temperatures, from -40°C to 70°C with full power up to 55°C and features an isolation of 4000VAC for improved reliability and system safety. Furthermore, a high MTBF of 1, 500,000h, output short circuit protection (OSCP), output over-current protection (OCP) and an output over-voltage protection (OVP) come standard with the series.

The AMEL15-277HALPZ is suitable for grid power, instrumentation, industrial controls, communication, civil, and medical applications.

Features

- Universal Input: 85 - 305VAC/100 - 430VDC
- Operating Temp: -40 °C to +70 °C
- High isolation voltage: 4000VAC
- Low ripple & noise, 150mV(p-p), max.
- Output short circuit, over-current, over-voltage protection
- Low no-load power consumption of 0.1W
- Agency approvals: IEC/EN/UL62368-1, EN60335, EN61558

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)	Max Output wattage (W)	Output Voltage (V)	Output Current rated (A)	Output Current max (A)	Maximum capacitive load (µF)	Efficiency @ 230VAC Typ. (%)
AMEL15-3S277HALPZ	85-305/47-63	100-430	13.2	3.3	4	4.5	8000	81
AMEL15-5S277HALPZ	85-305/47-63	100-430	15	5	3	4	8000	85
AMEL15-9S277HALPZ	85-305/47-63	100-430	15	9	1.67	2.2	5400	85
AMEL15-12S277HALPZ	85-305/47-63	100-430	15	12	1.25	1.67	4000	86
AMEL15-15S277HALPZ	85-305/47-63	100-430	15	15	1	1.33	3000	87
AMEL15-24S277HALPZ	85-305/47-63	100-430	15	24	0.625	0.83	1000	87

Input Specifications

Parameters	Conditions	Typical	Maximum	Units
Input current	115VAC		500	mA
	230VAC		300	mA
Inrush current	115VAC	20		A
	230VAC	45		A
Leakage	277VAC, 50Hz		0.1	mA RMS
Fuse	3.15A/300V, Slow blow, built in			

Output Specifications

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy		±1.5		%
Line regulation	Full load	±0.5		%
Load regulation	0-100% load	±1		%
Ripple & Noise*	20MHz bandwidth	100	150	mV p-p
Hold up time	115VAC	8		ms
	230VAC	50		ms

* Ripple and Noise are measured at 20MHz bandwidth with a 10µF electrolytic capacitor and a 1µF ceramic capacitor. Please refer to the application note for specific details.

Isolation Specification

Parameters	Conditions	Typical	Maximum	Units
Tested I/O voltage	60 sec	4000		VAC
Resistance	500VDC	>100		MΩ

General Specifications

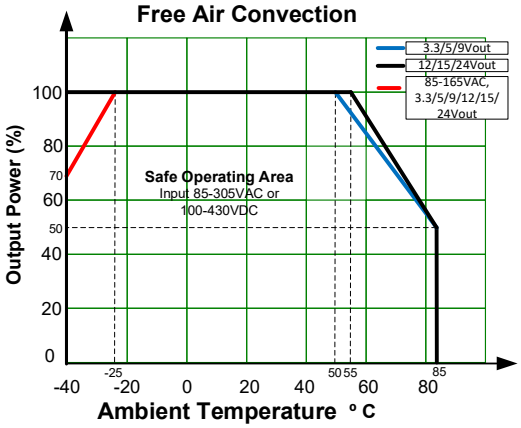
Parameters	Conditions	Typical	Maximum	Units
Protection class	Class II			
Over current protection	Auto recovery	≥ 110		% of Iout
Over voltage protection	3.3, 5Vout, voltage clamp, hiccup		7.5	VDC
	9Vout, voltage clamp, hiccup		15	VDC

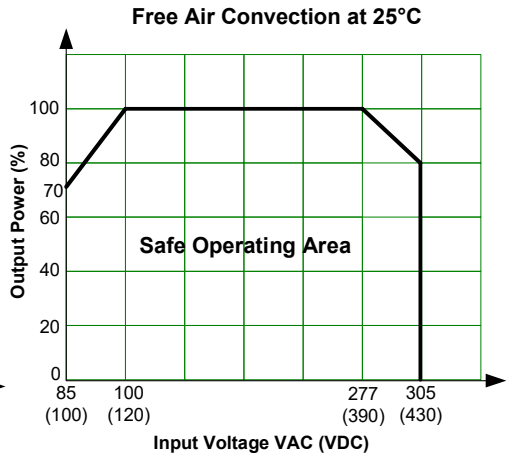
	12, 15Vout, voltage clamp, hiccup		20	VDC
	24Vout, voltage clamp, hiccup		30	VDC
Short circuit protection	Hiccup, Continuous, Auto recovery			
Switching Frequency		65		KHz
Operating altitude			5000	m
Operating temperature	See derating graph	-40 to +70		°C
Storage temperature		-40 to +85		°C
Maximum case temperature			95	°C
Reflow soldering temperature	Duration 5 - 10s	260		°C
Manual soldering temperature	Duration 3 - 5s	360		°C
No-load power consumption	24Vout model		0.12	W
	others		0.1	W
Power Derating	-40 °C to -25 °C, 85VAC to 165VAC	2		%/°C
	+50 °C to +70 °C, 3.3/5/9Vout	2.5		%/°C
	+55 °C to +70 °C, 12/15/24Vout	3.33		%/°C
	85VAC to 100VAC	2		%/VAC
	277VAC to 305VAC	0.71		%/VAC
	2000 - 5000m	6.7		%/km
Temperature coefficient		±0.02		%/°C
Cooling	Free air convection			
Humidity	Non-condensing	≥10	95	% RH
Vibration	10Hz to 55Hz, 5G, 30 minutes along X, Y and Z axis			
Case material	Plastic (flammability to UL 94V-0)			
Weight		55		g
Dimensions (L x W x H)		2.06 x 1.07 x 0.94 inches (52.40 x 27.20 x 24.00 mm)		
MTBF	> 1 500 000 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.				

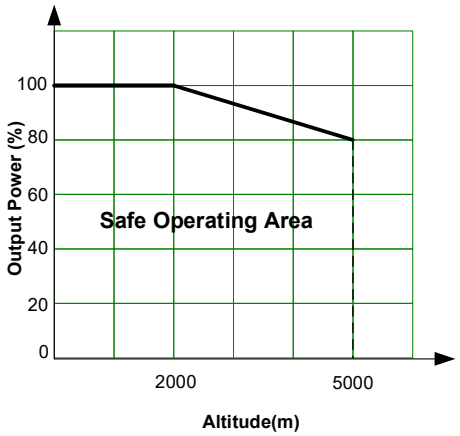
Safety Specifications

Parameters		
Agency Approvals	IEC/EN/UL62368-1, EN60335, EN61558	
Standards	EMC - Conducted and radiated emission	CISPR32 / EN55032, class B without external circuit

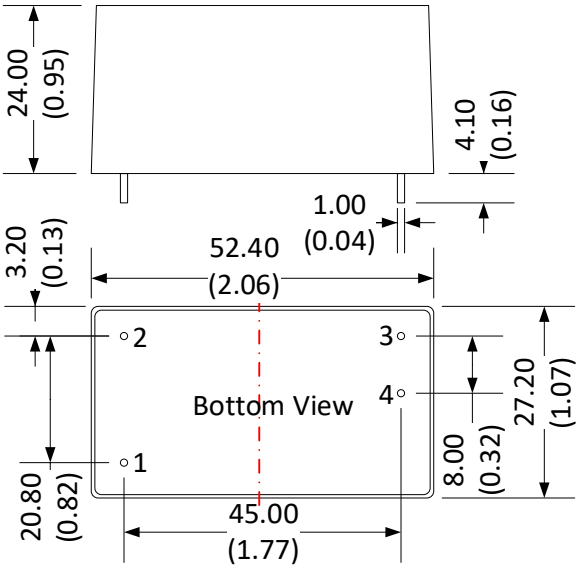
Derating

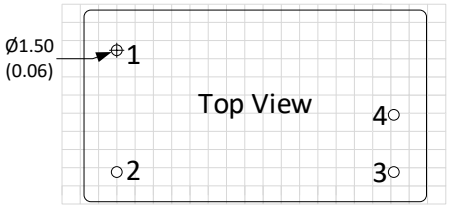






Dimensions





Grid size: 2.54*2.54mm

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

Note:
Unit: mm(inch)
General tolerance: ±1.0 (±0.04)
Pin diameter tolerance: ±0.15 (±0.006)

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.