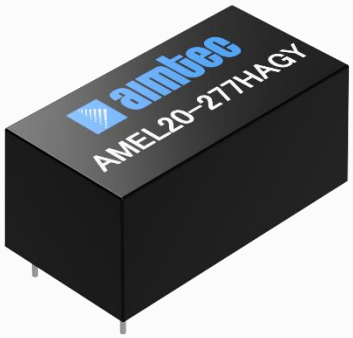
AMEL20-277HAGY

Click to ORDER samples



Encapsulated

The AMEL20-277HAGY series is an efficient 20W AC-DC power supply module. Offering 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 new series offers great operating temperatures, from -30°C to 70°C with full power up to 45°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.

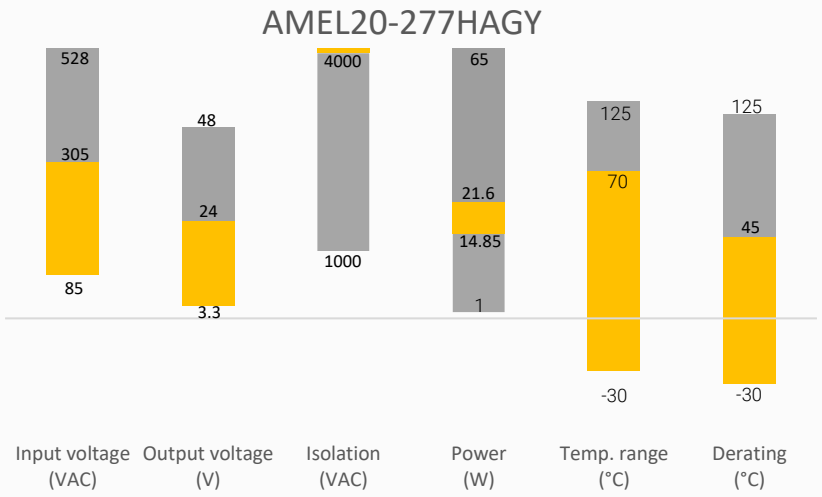
The AMEL20-277HAGY is suitable for grid power, industrial instrumentation and controls, communication, and civil applications.

Features

- Universal Input: 85 - 305VAC
- Operating Temp: -30 °C to +70 °C
- High isolation voltage: 4000VAC
- Output short circuit, over-current, over-voltage protection
- Low no-load power consumption of 0.1W
- Designed to meet: IEC/EN/UL62368-1, EN60335-1

RoHS 3yr Warranty CE

Summary



Training

Product Training Video (click to open)

Press Release

Coming Soon!

Application Notes

Applications

Power Grid

Industrial

Telecom

Models & Specifications

Single Output						
Model	Input Voltage (VAC/Hz)	Max Output wattage (W)	Output Voltage (V)	Output Current max (A)	Maximum capacitive load (µF)	AVG. Efficiency (%)
AMEL20-3S277HAGY	85-305/50-60	14.85	3.3	4.5	6600	76
AMEL20-5S277HAGY	85-305/50-60	20	5	4	5000	79
AMEL20-9S277HAGY	85-305/50-60	20.7	9	2.3	2500	82
AMEL20-12S277HAGY	85-305/50-60	21.6	12	1.8	2000	84
AMEL20-15S277HAGY	85-305/50-60	21	15	1.4	820	84
AMEL20-24S277HAGY	85-305/50-60	21.6	24	0.9	470	85

Input Specifications				
Parameters	Conditions	Typical	Maximum	Units
Input current	115VAC		600	mA
	230VAC		400	mA
	277VAC		300	mA
Inrush current	115VAC, cold start	20		A
	230VAC, cold start	40		A
Leakage	277VAC		0.25	mA

Output Specifications				
Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy		±2		%
Line regulation	Full load	±0.5		%
Load regulation	10-100% load	±0.5		%
Ripple & Noise*	20MHz bandwidth		200	mV p-p
Hold up time	115VAC	10		ms
	230VAC	40		ms
* Ripple and Noise are measured at 20MHz bandwidth with a 47µF electrolytic capacitor and a 0.1µF 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

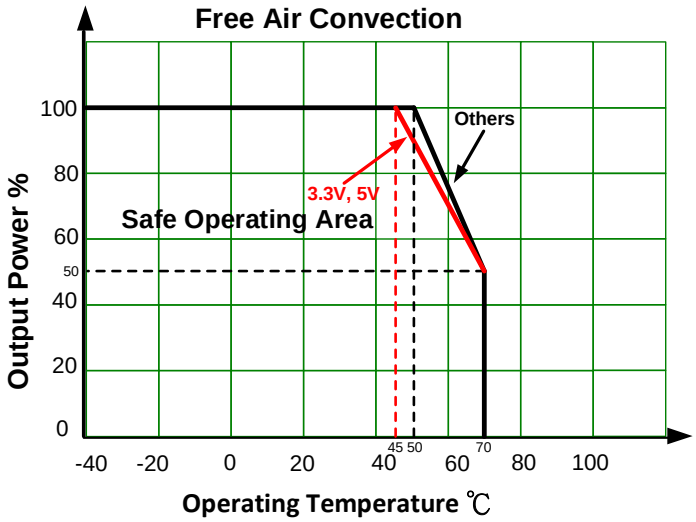
Parameters	Conditions	Typical	Maximum	Units
Overvoltage category	OVC III			
Over current protection	Hiccup, Auto recovery	≥ 115	190	% of Iout
Over voltage protection	3.3Vout, shut off o/p voltage, clamping by Zener diode		4.95	VDC
	5Vout, shut off o/p voltage, clamping by Zener diode		6.75	VDC
	12Vout, shut off o/p voltage, clamping by Zener diode		16.2	VDC
	15Vout, shut off o/p voltage, clamping by Zener diode		20.25	VDC
	24Vout, shut off o/p voltage, clamping by Zener diode		32.4	VDC
Short circuit protection	Hiccup, Continuous, Auto recovery			
Operating temperature	See derating graph	-30 to +70		°C
Storage temperature		-40 to +85		°C
No-load power consumption		0.1		W
Power Derating	+45 °C to +70 °C, 3.3/5Vout	2		%/°C
	+50 °C to +70 °C, 12/15/24Vout	2.5		%/°C
	85VAC to 100VAC	1.33		%/VAC
Temperature coefficient	(0~50°C)	±0.03		%/°C
Cooling	Free air convection			
Humidity	Non-condensing	10	95	% RH
	Non-condensing, Operating	20	90	% RH
Vibration	10 ~ 500Hz, 5G 10min. /1cycle, period for 60min. each along X,Y,Z axes			
Weight		65		g
Dimensions (L x W x H)		2.07 x 1.08 x 0.91 inches (52.50 x 27.40 x 23.00 mm)		
MTBF	> 1 500 000 hrs (MIL-HDBK -217F, t=+25°C)			

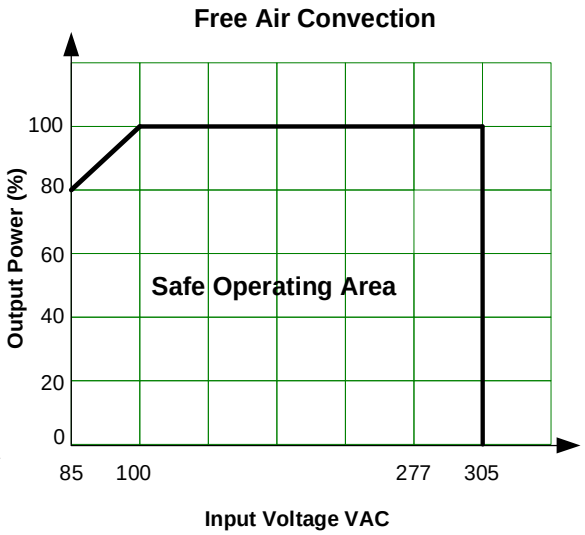
NOTE: All specifications in this datasheet are measured at an ambient temperature of 25°C, humidity<75%, nominal input voltage and at rated output load unless otherwise specified.

Safety Specifications

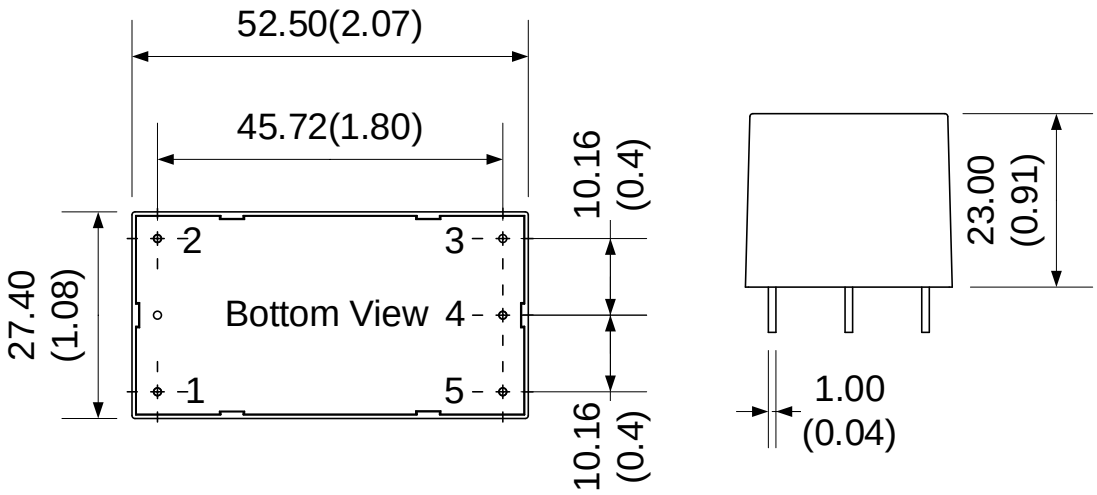
Parameters		
Standards	Information technology Equipment	Design to meet IEC62368-1, UL62368-1, TUV BS EN/EN62368-1, IEC/EN60335-1
	EMC Emission	EN55032 (CISPR32) CNS13438 Class B, EN61000-3-2 Class A, EN61000-3-3
	EMC Immunity	BS EN/EN61000-4-2,3,4,5,6 Level 3, criteria A;BS EN/EN61000-4-8 Level 4, criteria A;BS EN/EN61000-4-11

Derating





Dimensions



Note:
Unit: mm(inch)
General tolerance: ±0.5 (±0.02)
Pin diameter tolerance: ±0.25 (±0.01)

Pin Output Specifications	
Pin	Function
1	AC Input (N)
2	AC Input (L)
3	No Pin
4	-V Output
5	+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 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.