AMEOF225-HAMJZ

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Open Frame/ Enclosed

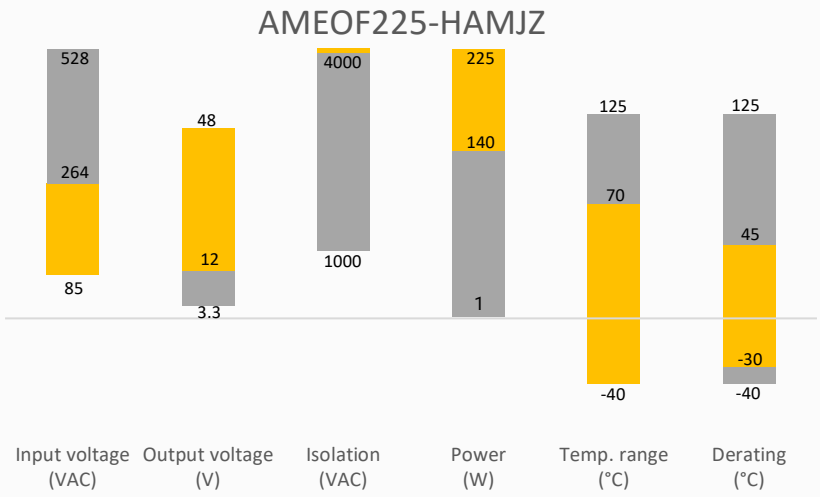
The AMEOF225-HAMJZ series is one of Aimtec's compact (2"x4"x1") 225W AC/DC converter with active PFC and is suitable for medical equipment. It features a universal AC input, which also accepts a DC input voltage, is cost-effective, has a high efficiency and high reliability and comes with double or reinforced isolation.

These converters offer excellent EMC and safety performance, which with UL62368-1, ES60601-1 approvals and meets IEC/EN62368-1, GB4943, EN60335-1, IEC/EN61558-1, IEC/EN60601-1 standards and can be widely used in industrial, LED, street light control, security, telecommunications, smart home and medical applications.

Features

- Universal Input: 85 - 264VAC/120 - 370VDC
- Active power factor correction
- Low leakage current: 0.1mA max.
- High isolation voltage: 4000VAC
- Output short circuit, over-current, over-voltage, over temperature protection
- Low no-load power consumption of 0.3W
- Suitable for Type BF application
- Approvals UL62368-1, ES60601-1; EN62368-1
- Designed to meet IEC62368-1, EN60335-1, IEC/EN61558-1, IEC/EN60601-1

Summary



Training

Product Training Video (click to open)

Press Release

Coming Soon!

Application Notes

Applications

Power Grid

Industrial

Telecom

Medical

Models & Specifications

Single Output									
Model	Input Voltage (VAC/Hz)	Input Voltage (VDC)	Cooling method	Max Output wattage (W)	Output Voltage (V)	Output Voltage Adjustable Range (V)	Max Output Current (A)	Maximum capacitive load (μF)	Efficiency @230VAC Typ. (%)
AMEOF225-12SHAMJZ	85-264/ 47-63	120-370	Free air	140	12	11.8-12.6	11.67	6000	93
			13CFM	225			18.75		
AMEOF225-15SHAMJZ	85-264/ 47-63	120-370	Free air	140	15	14.7-15.8	9.33	5000	93
			13CFM	225			15		
AMEOF225-24SHAMJZ	85-264/ 47-63	120-370	Free air	140	24	23.5-25.2	5.83	3200	94
			13CFM	225			9.4		
AMEOF225-27SHAMJZ	85-264/ 47-63	120-370	Free air	130	27	26.5-28.4	4.81	2400	94
			13CFM	225			8.35		
AMEOF225-36SHAMJZ	85-264/ 47-63	120-370	Free air	140	36	35.28-37.8	3.88	2000	94
			13CFM	225			6.25		
AMEOF225-48SHAMJZ	85-264/ 47-63	120-370	Free air	140	48	47.1-50.4	2.91	1600	94
			13CFM	225			4.7		
AMEOF225-54SHAMJZ ※	85-264/ 47-63	120-370	Free air	140	54	52.5-55.5	2.59	1000	94
			13CFM	225			4.17		
Add suffix -F for enclosed package. (ex. AMEOF225-12SHAMJZ-F is enclosed package version)									

Input Specifications				
Parameters	Conditions	Typical	Maximum	Units
Input current	115VAC		3	A
	230VAC		2	A
Inrush current	115VAC, cold start	40		A
	230VAC, cold start	75		A
Leakage	240VAC, normal condition		0.1	mA
	240VAC, single fault condition		0.5	mA
Power factor	115VAC, 100% load	≥0.99		
	230VAC, 100% load	≥0.95		

Output Specifications				
Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy		±1		%
Line regulation	Full load	±0.5		%
Load regulation	0-100% load	±0.5		%
Ripple & Noise*	12V, 15-100% load		60	mV p-p
	15, 24, 27, 36, 48V, 15-100% load		100	mV p-p
	54V, 15-100% load		200	mV p-p
	12V, 0-15% load		120	mV p-p
	15, 24, 27, 36, 48V, 0-15% load		200	mV p-p
	54V, 0-15% load		400	mV p-p
Hold up time	230VAC, Free air convection	≥16		ms
	230VAC, 13CFM	≥12		ms

* Ripple and Noise are measured at 20MHz bandwidth. Open frame models are measured with a 10µF electrolytic capacitor and a 0.1µF ceramic capacitor. Enclosed models are measured 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, leakage ≤ 10mA	≥4000		VAC
Tested I, O/PE voltage	60 sec, leakage ≤ 10mA	≥1500		VAC
Resistance I/O*	500VDC	>50		MΩ
Resistance I, O/PE*	500VDC	>50		MΩ
MOP I/O		2xMOPP		
MOP I, O/PE		1xMOPP		

* Tested under 25±5°C ambient temperature with relative humidity <95% and no condensation.

General Specifications

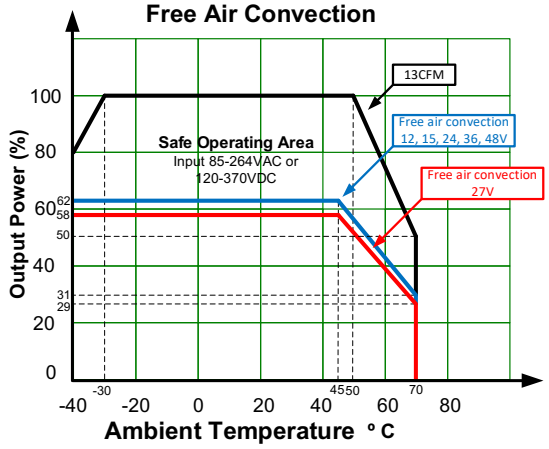
Parameters	Conditions	Typical	Maximum	Units
Protection class	Class II without protective earth connection, Class I with protective earth connection			
Over current protection	Auto recovery, hiccup	≥ 110		% of Iout
Over voltage protection	12Vout, shut down, manual recovery		16	VDC
	15Vout, shut down, manual recovery		20	VDC
	24Vout, shut down, manual recovery		32	VDC
	27Vout, shut down, manual recovery		35	VDC
	36Vout, shut down, manual recovery		50	VDC
	48, 54Vout, shut down, manual recovery		60	VDC
Short circuit protection	Hiccup, Continuous, Auto recovery time < 3S			
Over temperature protection	Shut down, manual recovery after the temperature drops below the threshold			
Fan power	15V	24V/0.25A, Voltage accuracy ±15%		
	12, 24, 27, 36, 48, 54V	12V/0.5A, Voltage accuracy ±15%		
No-load power consumption		0.5		W
Operating temperature	See derating graph	-40 to +70		°C
Storage temperature		-40 to +85		°C
Power Derating	-40 °C to -30 °C, forced air convection 13CFM	2.0		%/°C
	+50 °C to +70 °C, forced air convection 13CFM	2.5		%/°C
	+45 °C to +70 °C, free air convection, open frame	2.0		%/°C
	+40 °C to +70 °C, free air convection, enclosed	2.0		%/°C
	85VAC to 115VAC	1.0		%/VAC
Temperature coefficient		±0.03		%/°C
Cooling	Free air convection, forced air convection 13CFM			
Humidity	Non-condensing, storage	>10	95	% RH
	Non-condensing, operating	>20	90	% RH
Case material	Enclosed package	Metal (1100 Aluminum, SUS304)		
Weight	Open frame	175		g
	Enclosed	260		g
Dimensions (L x W x H)	Open frame	4.00 x 2.00 x 1.00 inches (101.6 x 50.8 x 25.4 mm)		
	Enclosed	4.07 x 2.44 x 1.46 inches (103.4 x 62.0 x 37.0 mm)		
MTBF	> 300 000 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.

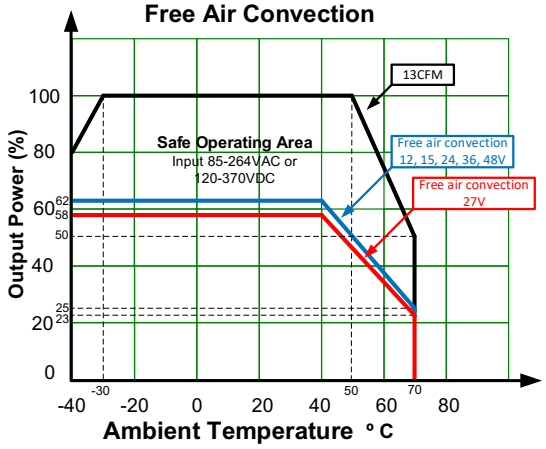
Safety Specifications		
Parameters		
Agency approvals	CE EN62368-1 cULus UL 62368-1; UL60601-1(AMSI/AAMI ES60601-1 V3.1)(※ With exception of 54Vout model)	
Standards	Design to meet IEC62368-1, EN60335-1, IEC/EN61558-1, IEC/EN60601-1, CAN/CSA-C22.2 No.60601-1:14 Ed3, EN60601-1-2 Ed4, GB4943-1	
	EMC - Conducted and radiated emission*	CISPR32 / EN55032, conducted class B CISPR32 / EN55032, radiated class B with protective earth connection CISPR32 / EN55032, radiated class A without protective earth connection
	EMC - Harmonic current emissions*	IEC 61000-3-2 class D
	Electrostatic Discharge Immunity	IEC 61000-4-2 Contact ±8KV, Air ±15KV, Criteria A
	RF, Electromagnetic Field Immunity	IEC 61000-4-3 10V/m, Criteria A
	Electrical Fast Transient/Burst Immunity	IEC 61000-4-4 ±4KV, Criteria A
	Surge Immunity	IEC 61000-4-5 L-L ±2KV L-G ±4KV, Criteria A
	RF, Conducted Disturbance Immunity	IEC 61000-4-6 10Vr.m.s, Criteria A
	Voltage dips, Short Interruptions Immunity	IEC 61000-4-11 0%, 70%, Criteria B
* The power supply is considered as a component and will be installed in an end-product. All the EMC tests are performed with the power supply mounted on a 1mm thick 360mm x 360mm metal plate. The EMC compliance of the end-product must be reconfirmed.		

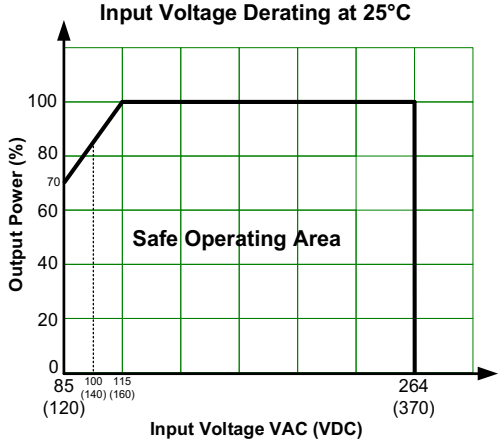
Derating

Open frame model



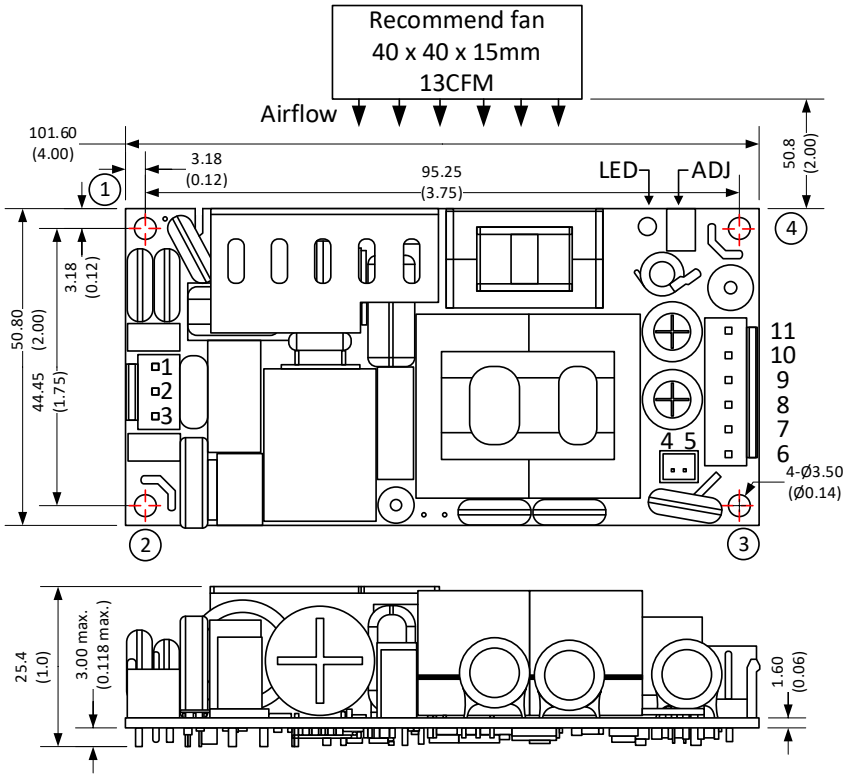
Enclosed model

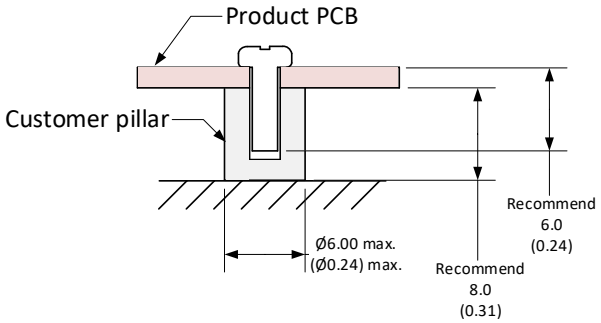




Dimensions

Open frame model



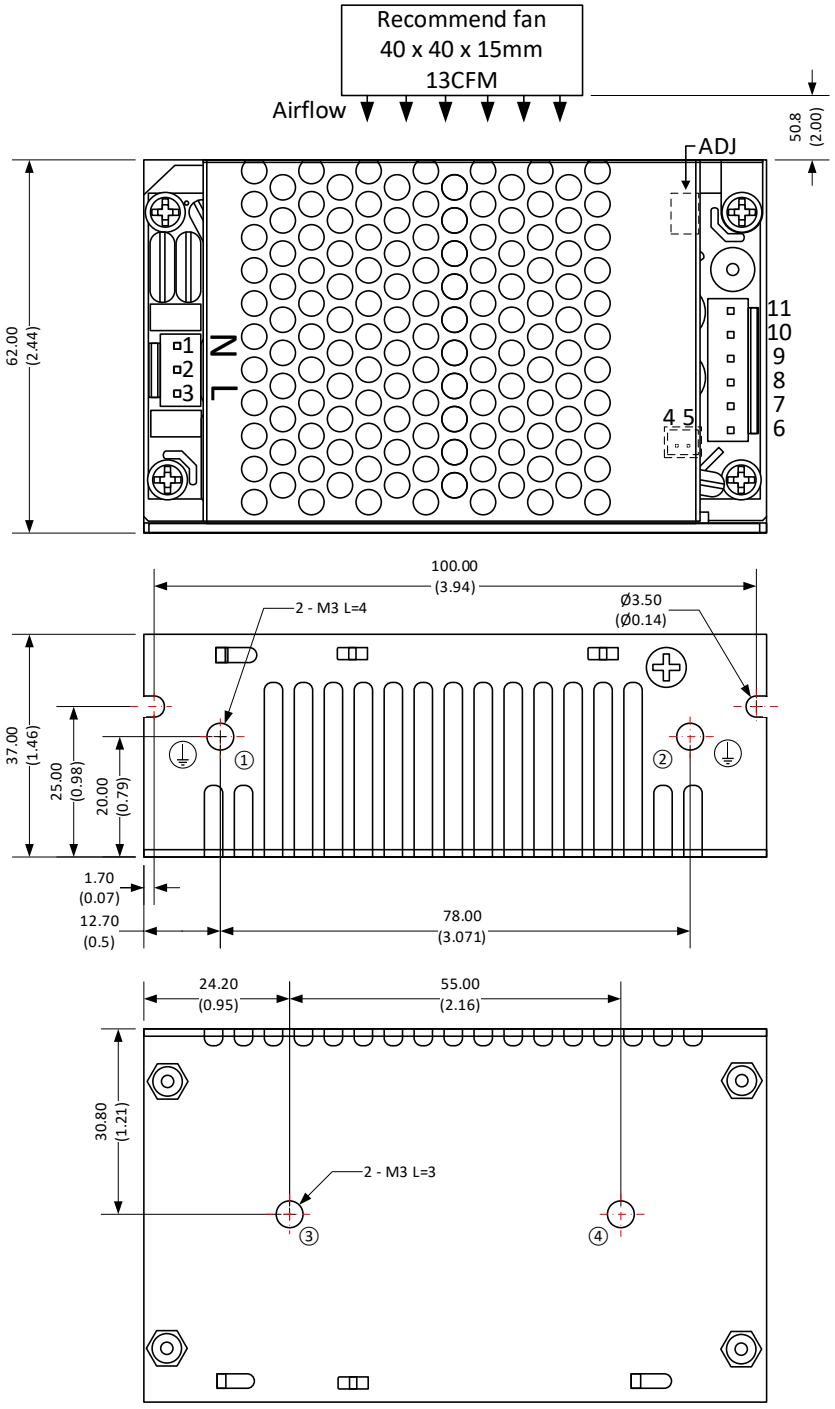


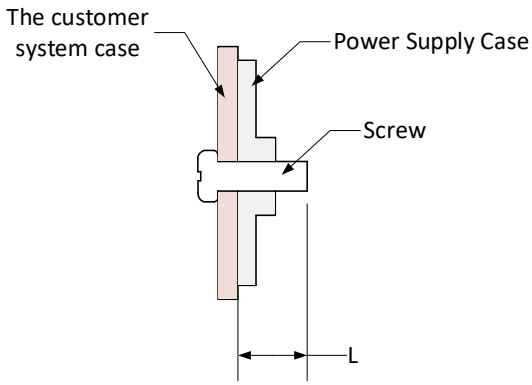
Note:
Unit: mm [inch]
General tolerance: ±1.00 (±0.04)
Mounting screw: M3
Mounting screw tightening torque: 0.4N max.

Note:
1. It is needed to have ≥ 10mm distance between the product and external components for safety.
2. Connect mounting point 1 and 3 to protective earth for Class I system.
3. Connect mounting point 1 and 3 together for Class II system.

Pin Output Specifications			
Pin	Function	Connector	Recommended connector
1	AC Input (N)/ -V Input	JST B3P-VH or equivalent	JST VHR, JST SVH-21PT-P1.1 or equivalent
2	NC		
3	AC Input (L)/ +V Input		
4	- Fan Output	JST B2B-PH-K-S or equivalent	JST PHR, JST SPH-002T-P0.5S or equivalent
5	+ Fan Output		
6	-V Output	JST B6P-VH or equivalent	JST VHR, JST SVH-21PT-P1.1 or equivalent
7	-V Output		
8	-V Output		
9	+V Output		
10	+V Output		
11	+V Output		

Enclosed model





Note:
Unit: mm [inch]
General tolerance: ±1.00 (±0.04)
Mounting screw: M3
Mounting screw tightening torque: 0.4N max.
Case must be connected to PE