

## FEATURES

- I/O Isolation 3000VAC
- Single & Dual Outputs
- MTBF > 330,000 Hours
- High Efficiency up to 78%
- EMC Complies with EN61000
- IEC61140 Safety Class II Approved
- 85~265VAC, 47~440Hz Universal Input Range
- IEC / EN / UL 60950-1 Safety Standards Approved
- Operating Temperature 71°C (Refer to Derating Curve)
- EMI Complies with EN55022 Class B and FCC part 15, level B

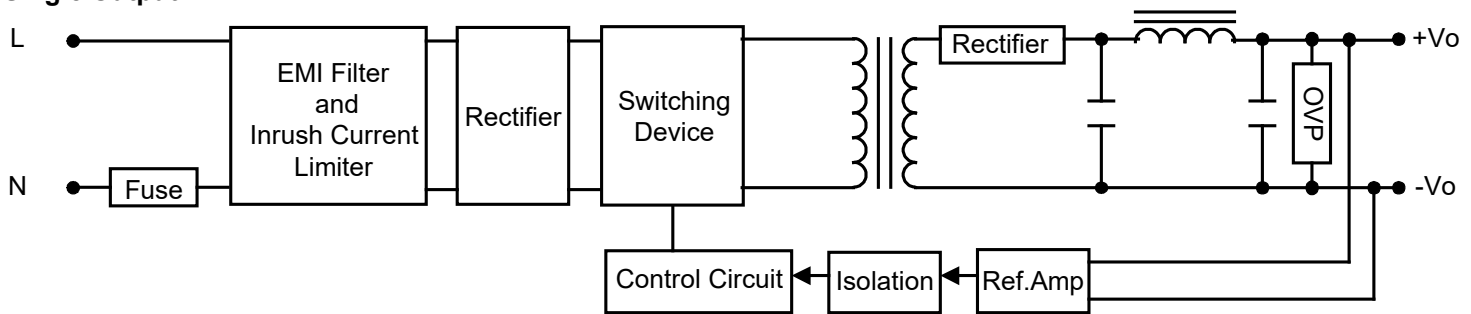


## DESCRIPTION

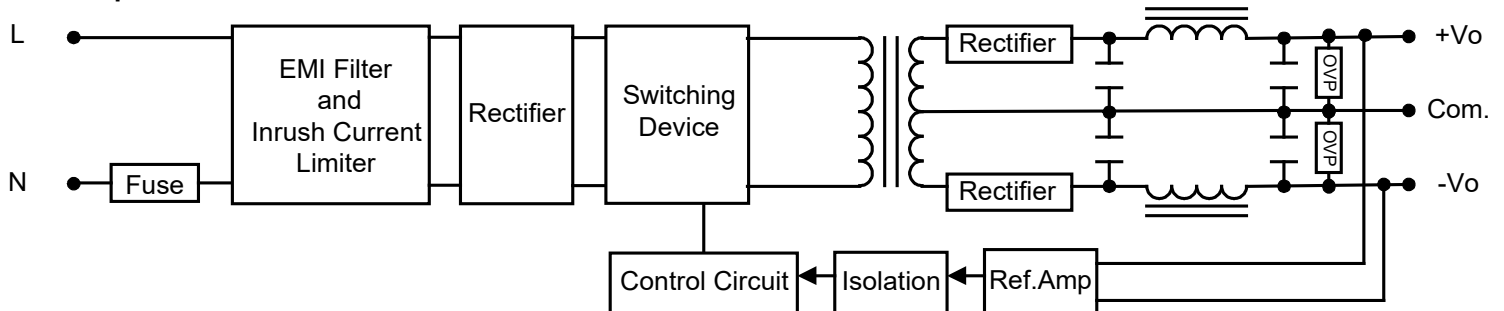
The PSAHF series of AC/DC power supplies offers 10 Watts of output power in an encapsulated design. This series has single and dual output models with a universal input range of 85 ~265VAC. Other features include continuous short circuit protection, over voltage protection, and output current limiting. These units are also EMC EN61000-4 (-2,-3,-4) and EMI EN55022 level B approved. The compliance to these EMI specifications minimizes system design time, cost, and eliminates the need for external filter components. The PSAHF series has IEC/EN/UL 60950-1 safety approvals, which qualifies this product for worldwide markets. This series also has a wide variety of applications including both commercial and industrial with a MTBF of 300,000 hours.

## BLOCK DIAGRAMS

### Single Output



### Dual Output



SPECIFICATIONS: PSAHF Series						
All specifications are based on 25°C, Nominal Input Voltage, and Maximum Output Current unless otherwise noted. We reserve the right to change specifications based on technological advances.						
SPECIFICATIONS	TEST CONDITIONS		Min	Typ	Max	Unit
<b>INPUT (V<sub>in</sub>)</b>						
Operating Voltage Range			85		265	VAC
Input Frequency			47		440	Hz
Inrush Current	cold start at 25°C	115VAC			10	A
		230VAC			20	A
Built-in Fuse			2A / 250VAC			
External Input Fuse (Recommended)			1.5A Slow – Blow Type			
<b>OUTPUT (V<sub>o</sub>)</b>						
Output Voltage			See Table			
Output Voltage Accuracy				±1.0	±2.0	%
Load Regulation	I <sub>o</sub> = min. to max.	Single Output Models		±0.5	±1.0	%
		Dual Output Models		±2.5	±5.0	
Line Regulation	V <sub>in</sub> = min. to max.			±0.5	±1.0	%
Overshoot					5.0	%
Output Power					10	W
Output Current			See Table			
Ripple & Noise (V <sub>p-p</sub> )	20MHz bandwidth	3.3VDC & 5.0VDC Outputs		1.5	1.8	% of V <sub>o</sub>
		Other Outputs		0.8	1.0	% of V <sub>o</sub>
Hold-up Time	115VAC, 60Hz			20		ms
<b>PROTECTION</b>						
Over Voltage Protection	Zener diode clamp			120		% of V <sub>o</sub>
Current Limitation	85VAC, Hiccup technique, automatic recovery		105			%
Short Circuit Protection			Hiccup mode, indefinite (auto-recovery)			
<b>GENERAL</b>						
Efficiency			See Table			
Switching Frequency				100		KHz
Isolation Voltage	Input to output, 60 seconds		3000			VAC
Isolation Test Voltage	Input to output, flash tested for 1 second		4700			VDC
Isolation Resistance	Test Voltage = 500VDC		100			MΩ
<b>ENVIRONMENTAL</b>						
Operating Temperature	Ambient		-25		+71	°C
Storage Temperature			-40		+85	°C
Humidity					95	%
Cooling			free air convection			
Temperature Coefficient	All Outputs			±0.01	±0.02	%/°C
MTBF	MIL-HDBK-217F @ 25°C, Ground Benign		300,000 hours			
<b>PHYSICAL</b>						
Weight			Approximately 3.25oz (92g)			
Dimensions			2.52(L) x 1.77(W) x 0.75(H) inches			
Flammability			UL94V-0			
Case Material			Plastic resin and Fiberglass			
<b>SAFETY</b>						
Safety Approvals			IEC/ EN / UL 60950-1 <sup>(6)</sup>			
Conducted EMI			EN55022 Class B			
Conducted EMC		Standard	Specification Requirement	Performance Criteria		
		EN61000-4-2	Air ±8KV Cont. ±4KV	B		
		EN61000-4-3	80 ~ 1000MHz 10V/m 80% AM 1KHz modulation	A		
		EN61000-4-4	AC port ±2KV DC, SL, TL±2KV Not less than 1 min.	B		
		EN61000-4-5	1.2/50µs (8/20µs) AC dif. ±1KV DC ±0.5KV	B		
		EN61000-4-6	0.15 ~ 80MHz 10Vrms (functional earth ports included) 80% AM 1KHz modulation	B		
		EN61000-4-11	30% 10ms 60% 100ms 95% 5000ms	B C C		

**MODEL SELECTION GUIDES**

**SINGLE OUTPUT MODELS**

Model Number	Output Voltage	Output Current		Input Current (115VAC, 60Hz)		Output Power	Efficiency (typ)	Capacitive Load (max)
		Min	Max	Nom	Max			
PSAHF-10S03	3.3 VDC	200mA	2000mA	15mA	137mA	6.6W	70%	3900µF
PSAHF-10S05	5 VDC	200mA	2000mA	15mA	199mA	10W	73%	3300µF
PSAHF-10S12	12 VDC	83mA	833mA	15mA	191mA	10W	76%	2200µF
PSAHF-10S15	15 VDC	66mA	666mA	15mA	191mA	10W	76%	2200µF
PSAHF-10S24	24 VDC	42mA	416mA	15mA	190mA	10W	76%	1000µF

**DUAL OUTPUT MODELS**

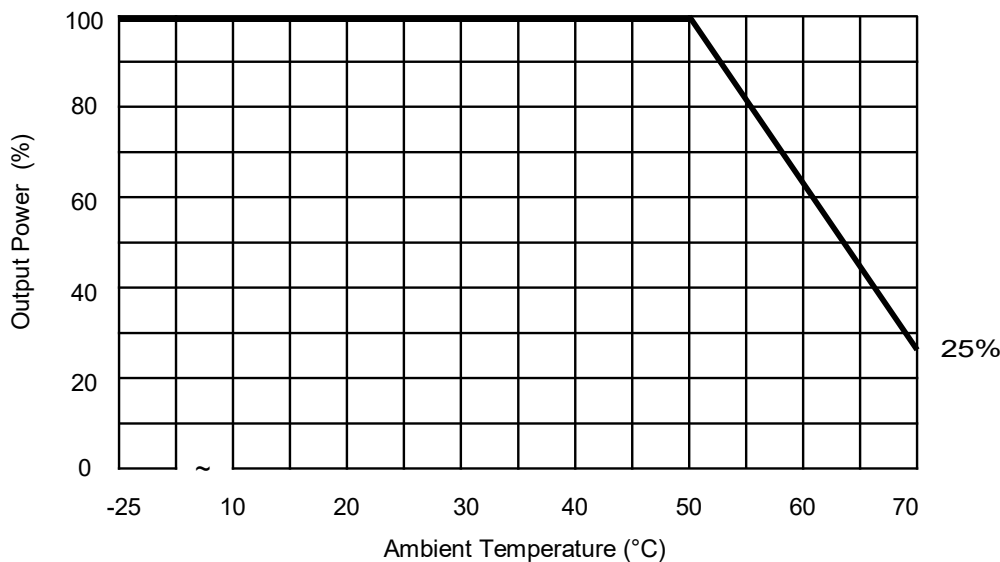
Model Number	Output Voltage	Output Current		Input Current (115VAC, 60Hz)		Output Power	Efficiency (typ)	Capacitive Load (max)
		Min	Max	Nom	Max			
PSAHF-10D12	+12VDC	+38mA	+380mA	15mA	172mA	9.12W	77%	1000µF
	-12VDC	-38mA	-380mA					1000µF
PSAHF-10D15	+15 VDC	+30mA	+300mA	15mA	169mA	9W	77%	1000µF
	-15VDC	-30mA	-300mA					1000µF

**NOTES**

1. Ripple & Noise measurement bandwidth is 0~20 MHz.
2. These power modules require a minimum output loading to maintain specified regulation.
3. Operation under no-load conditions will not damage these devices; however they may not meet all listed specifications.
4. All AC/DC modules should be externally fused at the front end for protection.
5. Other input and output voltage may be available, please contact factory.
6. This product is Listed to applicable standards and requirements by UL.

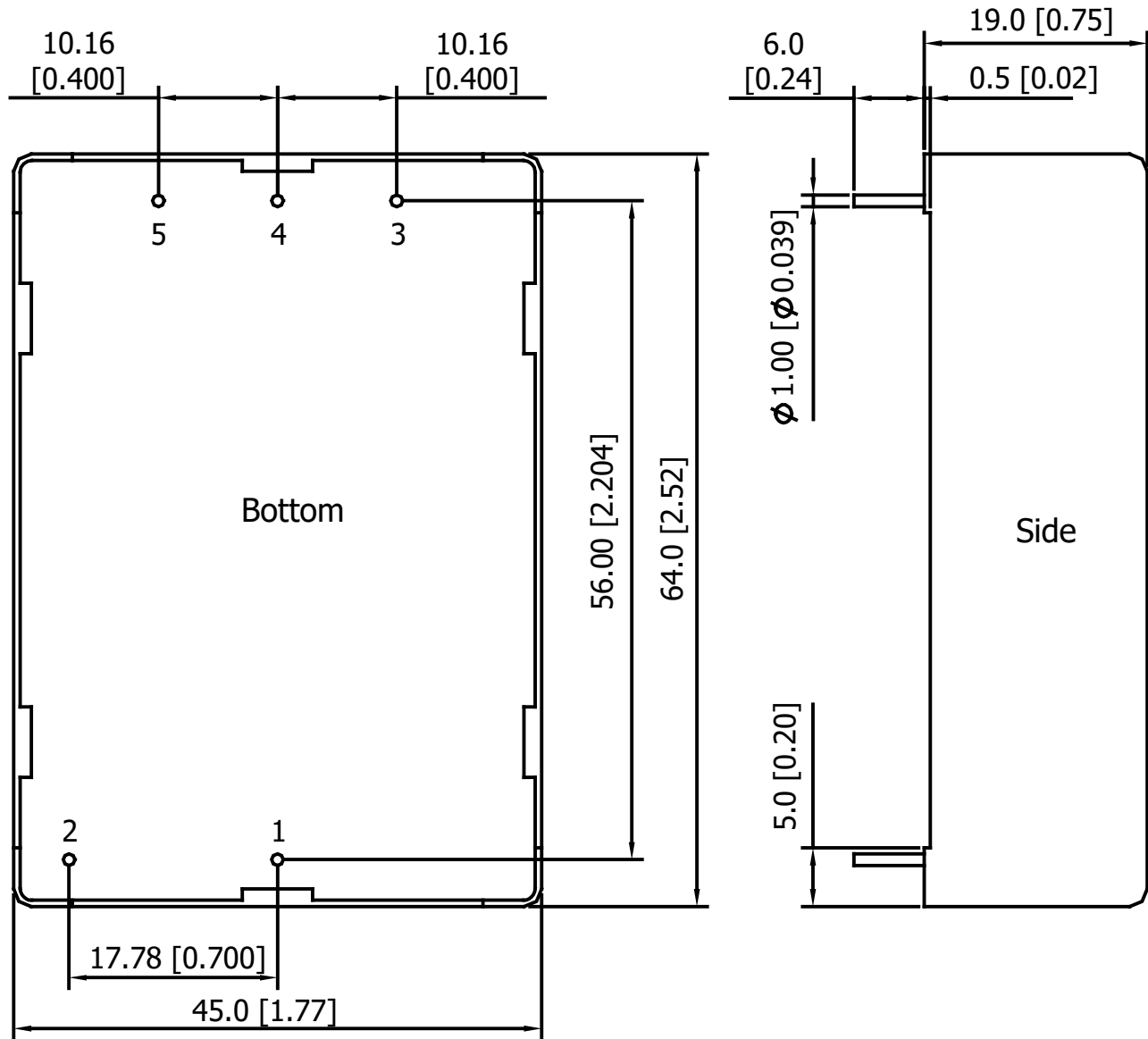
\*Due to advances in technology, specifications subject to change without notice.

**DERATING CURVE**



## MECHANICAL DRAWING

Unit: mm [inches]



Tolerance	Millimeters	Inches
	X.X±0.5	X.XX±0.02
	X.XX±0.25	X.XXX±0.01
Pin	±0.1	±0.004

PIN CONNECTIONS		
Pin	Single	Dual Output
1	AC (N) - AC Neutral	AC (N) - AC Neutral
2	AC (L) - AC Line	AC (L) - AC Line
3	-Vout	-Vout
4	NC	Common
5	+Vout	+Vout

NC: No Connection

## COMPANY INFORMATION

Wall Industries, Inc. has created custom and modified units for over 50 years. Our in-house research and development engineers will provide a solution that exceeds your performance requirements on-time and on budget. Our ISO9001: 2015 certification is just one example of our commitment to producing a high quality, well-documented product for our customers.

Our past projects demonstrate our commitment to you, our customer. Wall Industries, Inc. has a reputation for working closely with its customers to ensure each solution meets or exceeds form, fit and function requirements. We will continue to provide ongoing support for your project above and beyond the design and production phases. Give us a call today to discuss your future projects.

Contact **Wall Industries** for further information:

Phone: ☎ (603)778-2300  
Toll Free: ☎ (888)597-9255  
Fax: ☎ (603)778-9797  
E-mail: [sales@wallindustries.com](mailto:sales@wallindustries.com)  
Web: [www.wallindustries.com](http://www.wallindustries.com)  
Address: 37 Industrial Drive  
Exeter, NH 03833

©2019 Wall Industries, Inc. Specifications subject to change without notice. Wall Industries is not responsible for typographical errors. The information contained herein is for informational purposes only. This information is provided by Wall Industries and we make no representations or warranties of any kind, express or implied, about the completeness, accuracy, reliability, suitability or availability with respect to the information contained in this document for any purpose. All product and manufacturer names are trademarks or registered trademarks of their respective companies.