

## 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

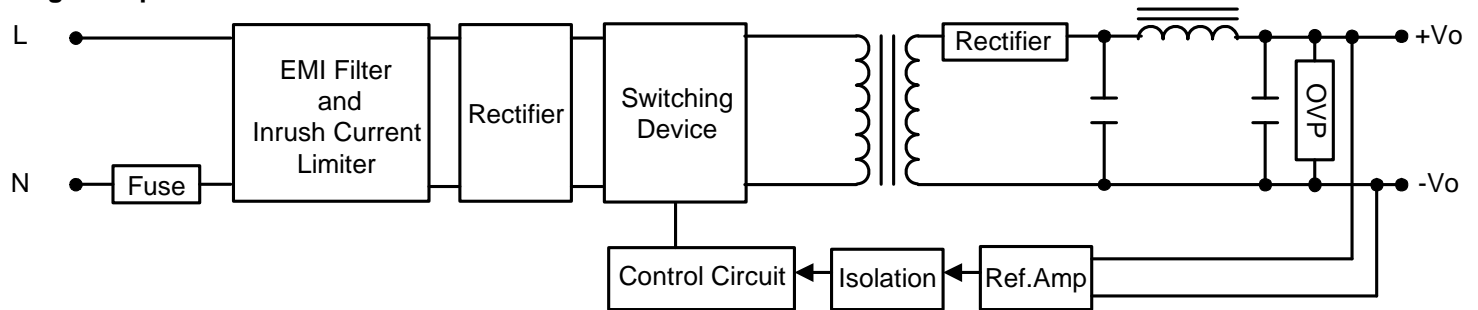


## DESCRIPTION

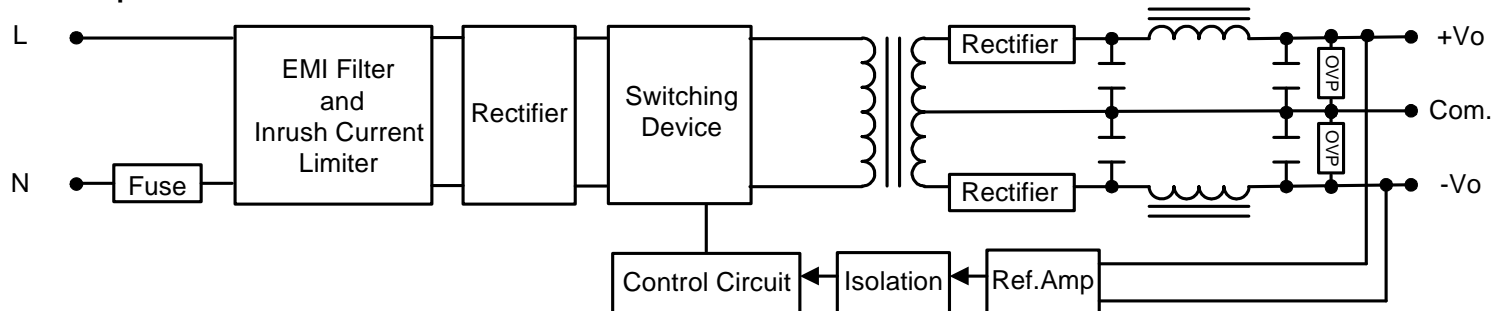
The PSAHF series of AC/DC power supplies offers 10 Watts of output power in an encapsulated design. This series has single and dual output models with a universal input range of 85 ~265VAC. Other features include continuous short circuit protection, over voltage protection, and output current limiting. 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			
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**

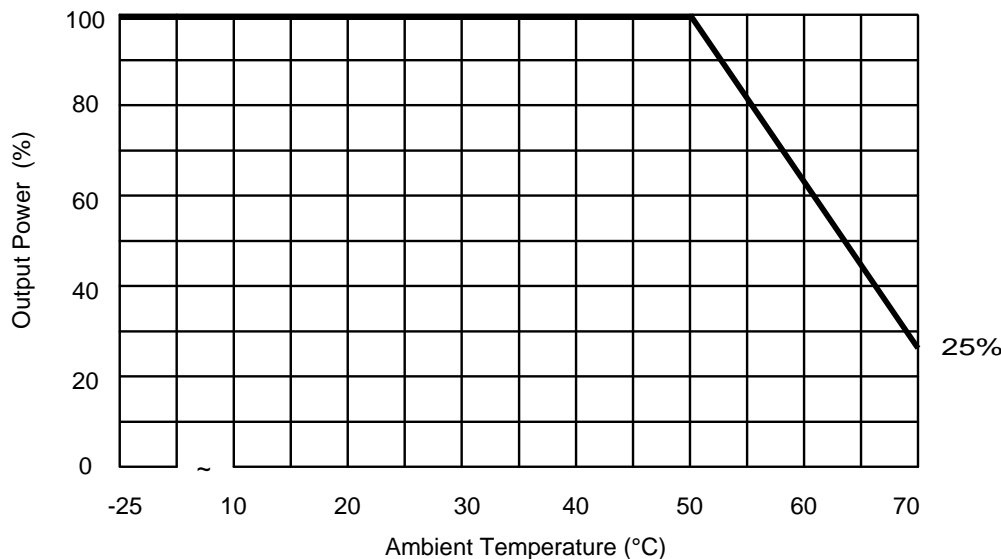
SINGLE OUTPUT MODELS								
Model Number	Output Voltage	Output Current		Input Current (115VAC, 60Hz)		Output Power	Efficiency (typ)	Capacitive Load (max)
		Min	Max	Nom	Max			
PSAHF-10S03	3.3 VDC	200mA	2000mA	15mA	137mA	6.6W	70%	3900µF
PSAHF-10S05	5 VDC	200mA	2000mA	15mA	199mA	10W	73%	3300µF
PSAHF-10S12	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**

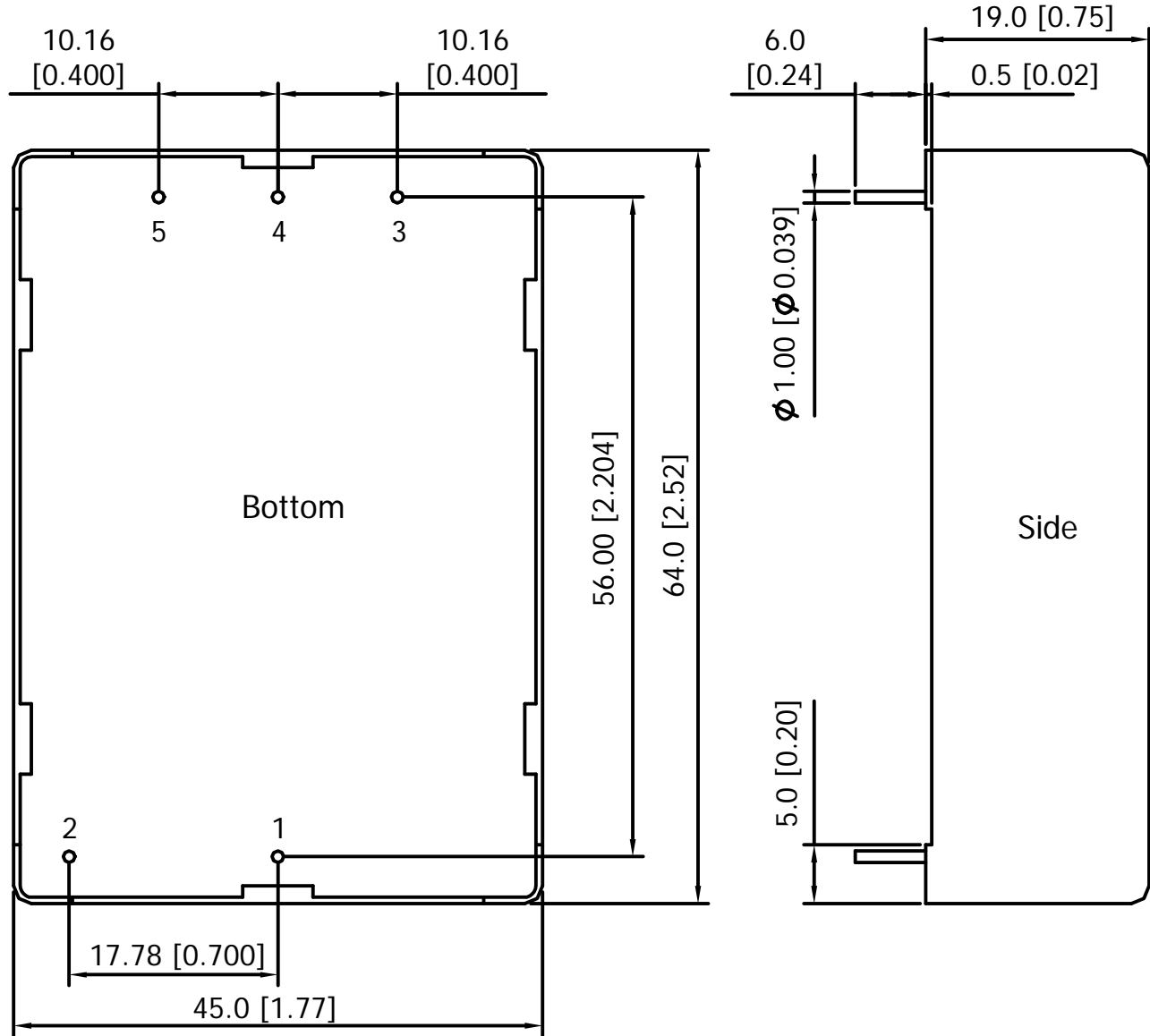
1. Ripple & Noise measurement bandwidth is 0~20 MHz.
2. These power modules require a minimum output loading to maintain specified regulation.
3. Operation under no-load conditions will not damage these devices; however they may not meet all listed specifications.
4. All AC/DC modules should be externally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

**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