LEVEL 3

Size:
1.46 x 1.08 x 0.69 inches
37 x 27.5 x 17.5 mm

Weight:
0.92oz (26g)

FEATURES

- Isolation Class II
- Up to 4 Watts Output Power
- Low Ripple and Noise
- Single and Dual Outputs
- CE Approvals (UL pending)
- Fully Encapsulated Plastic Case
- PCB Mountable Switching Power Supply
- -40°C to +80°C Ambient Temperature Range
- Universal Input Voltage Range: 90-305VAC (120-430VDC)
- Short Circuit and Over Power Protection
- < 0.3W No Load Input Power

DESCRIPTION

The PSAOCH series of AC/DC switching power supplies provides up to 4 watts of output power in a 1.46” x 1.08” x 0.69” encapsulated PCB mountable package. This series consists of single and dual output models with a universal input range of 90-305VAC (120-430VDC). Some features include low ripple and noise, -40°C to +80°C ambient temperature range, as well as over power and short circuit protection. All models have CE safety approvals and UL approval is pending.

MODEL SELECTION TABLE

SINGLE OUTPUT MODELS

Model Number	Input Voltage	Output Voltage	Output Current		Ripple & Noise (2)	Line Regulation	Load Regulation (0% - 100%)	Output Power	Efficiency	Maximum Capacitive Load
			Min Load	Max Load						
PSAOCH-3.3S	90~305 VAC (120~430 VDC)	3.3 VDC	0mA	1200mA	<250mVp-p	±0.5%	±1.5%	3.96W	68%	5000µF
PSAOCH-5S		5 VDC	0mA	800mA	<250mVp-p	±0.5%	±1.5%	4W	72%	4200µF
PSAOCH-8S		8 VDC	0mA	500mA	<200mVp-p	±0.5%	±1.5%	4W	74%	1470µF
PSAOCH-9S		9 VDC	0mA	444mA	<200mVp-p	±0.5%	±1.5%	4W	75%	1330µF
PSAOCH-12S		12 VDC	0mA	333mA	<150mVp-p	±0.2%	±0.5%	4W	76%	680µF
PSAOCH-14S		14 VDC	0mA	286mA	<150mVp-p	±0.2%	±0.5%	4W	76%	470µF
PSAOCH-15S		15 VDC	0mA	267mA	<100mVp-p	±0.2%	±0.5%	4W	76%	330µF
PSAOCH-24S		24 VDC	0mA	167mA	<100mVp-p	±0.2%	±0.5%	4W	77%	120µF

DUAL OUTPUT MODELS

Model Number		Input Voltage	Output Voltage	Output Current		Ripple & Noise (2)	Line Regulation	Load Regulation (25% - 100%)	Output Power	Efficiency	Maximum Capacitive Load
				Min Load(1)	Max Load						
PSAOCH-5S3.3S	Vo	90~305 VAC (120~430 VDC)	5 VDC	150mA	600mA	<200mVp-p	±0.2%	±0.5%	3.5W	72%	2500µF
	Vr		3.3 VDC	37.5mA	150mA		±3%	±5%			1800µF
PSAOCH-8S5S	Vo		8 VDC	93.8mA	375mA	<150mVp-p	±0.2%	±0.5%	3.6W	74%	470µF
	Vr		5 VDC	30mA	120mA		±3%	±5%			1800µF
PSAOCH-12S5S	Vo		12 VDC	62.5mA	250mA	<100mVp-p	±0.2%	±0.5%	3.6W	75%	180µF
	Vr		5 VDC	30mA	120mA		±3%	±5%			1800µF

SPECIFICATIONS: PSAOCH SERIES

All specifications are based on 25°C after Warm-Up, Normal Input Voltage, and Full Load unless otherwise noted.
We reserve the right to change specifications based on technological advances.

SPECIFICATION	TEST CONDITIONS		Min	Typ	Max	Unit
INPUT SPECIFICATIONS						
Input Voltage	AC input voltage range		90		305	VAC
	DC input voltage range		120		430	VDC
Input Frequency			47		440	Hz
Input Current	At 115VAC and full load				110	mA
	At 230VAC and full load				70	
Inrush Current (<500µs)	At 115VAC				15	A
	At 230VAC				25	
External Fuse (recommended)				3.15A slow blow type		
OUTPUT SPECIFICATIONS						
Output Voltage				See Table		
Voltage Accuracy	Single Output Models		-2		+2	%
	Dual Output Models	Vo:	-2		+2	%
		Vr:	-5		+5	
Line Regulation	Low Line to High Line			See Table		
Load Regulation				See Table		
Output Power				See Table		
Output Current				See Table		
Minimum Load	Single Output Models		0			%
	Dual Output Models		25			
Ripple & Noise	Measured at 20MHz BW with 0.1µF and 47µF capacitors in parallel			See Table		
Max Capacitive Load				See Table		
Hold-Up Time			15			ms
Temperature Coefficient				±0.02		%/°C
PROTECTION						
Short Circuit Protection				Hiccup mode, indefinite (auto-recovery)		
Over Power Protection				Hiccup mode, auto-recovery		
GENERAL SPECIFICATIONS						
Efficiency				See Table		
Isolation Voltage (Input to Output)			3000			VAC
Leakage Current					0.25	mA
ENVIRONMENTAL SPECIFICATIONS						
Ambient Temperature	With derating (see derating curve)		-40		+80	°C
Storage Temperature			-40		+85	°C
Humidity					95	% RH
Cooling				Free air convection		
MTBF	25°C (MIL-HDBK-217F)		450,000			hours
PHYSICAL SPECIFICATIONS						
Weight				0.92oz (26g)		
Case Material				Plastic resin (Flammability to UL 94V-0)		
Dimensions (L x W x H)	1.46 x 1.08 x 0.69 inches (37.0 x 27.5 x 17.5 mm) Tolerance ±0.5mm					
SAFETY & EMC						
Safety Approvals				CE, UL, cUL[5]		
EMC	EMI (Conducted and Radiated Emissions)			EN 55022 Class B		
	EMS (Noise Immunity)			EN 55024		

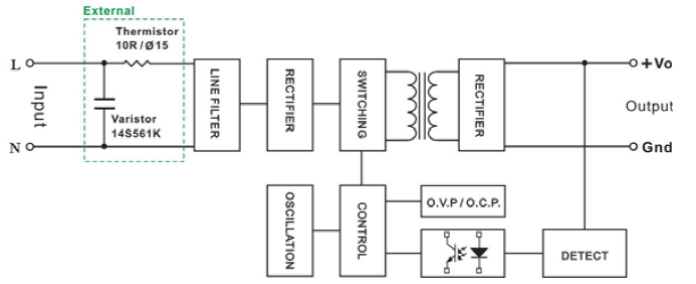
NOTES

1. Dual output models require a minimum loading on the output to maintain specified regulations. Operation under no-load conditions will not damage these devices; however, they may not meet all listed specifications.
2. Ripple & Noise is measured 20MHz limited bandwidth and with 0.1µF and 47µF capacitors in parallel across the output.
3. Varistor 14S561K necessary at L/N input side in parallel
4. 10R/15φ thermistor at L input side in series connection
5. This product is Listed to applicable standards and requirements by UL.

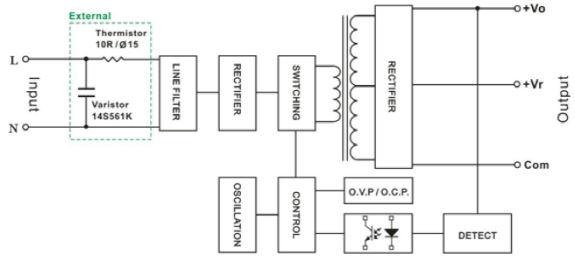
**Due to advances in technology, specifications are subject to change without notice.*

BLOCK DIAGRAMS

Single Output

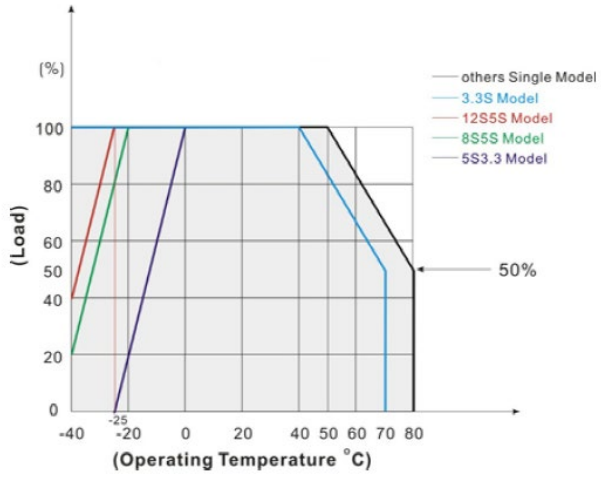


Dual Output

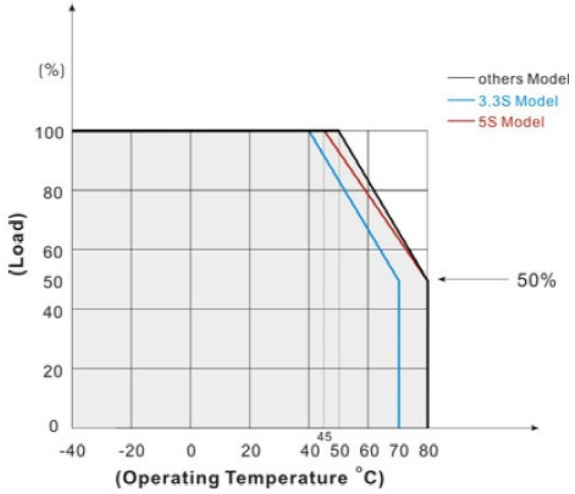


DERATING CURVES

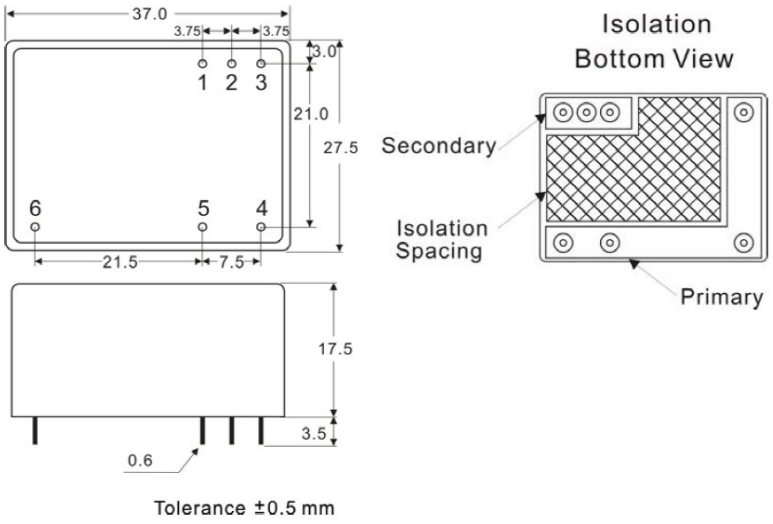
Power Derating Curve Vin at 90~280VAC



Power Derating Curve Vin at 305VAC



MECHANICAL DRAWING



PIN CONNECTIONS

PIN#	Single	Dual
1	+Vo	+Vo
2	GND	COM
3	NC	+Vr
4	AC IN (L)	AC IN (L)
5	AC IN (N)	AC IN (N)
6	NC	NC

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
Web: www.wallindustries.com
Address: 37 Industrial Drive
Exeter, NH 03833