E199779 LEVEL 3

Size:
1.48 x 1.10 x 1.08 inches
37.5 x 28.0 x 27.4 mm

FEATURES

- RoHS Compliant
- Isolation Class II
- Up to 9 Watts Output Power
- Low Ripple and Noise
- Single and Dual Outputs
- UL/cUL & CE Safety Approvals
- PCB Mountable Switching Power Supply
- Fully Encapsulated Plastic Case
- -40°C to +70°C Operating Temperature Range
- < 0.3W No Load Power Consumption
- Universal Input Voltage Range: 90-305VAC (120-430VDC)
- Short Circuit, Over Power, and Over Voltage Protection

DESCRIPTION

The PSALC series of AC/DC switching power supplies provides up to 9 watts of output power in a 1.48" x 1.10" x 1.08" 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 +70°C operating temperature range, and over power, over voltage, and short circuit protection. All models are RoHS compliant and have UL/cUL and CE safety approvals.

MODEL SELECTION TABLE

SINGLE OUTPUT MODELS

Model Number	Input Voltage	Output Voltage	Output Current Min Load	Output Current Max Load	Voltage Accuracy	Line Regulation	Load Regulation (0% - 100%)	Output Power	Efficiency	Maximum Capacitive Load
PSALC-3.3S	90~305 VAC (120~430 VDC)	3.3 VDC	0%	2000mA	±2%	±0.2%	±3%	6.6W	69%	17,000µF
PSALC-5S		5 VDC	0%	1600mA	±2%	±0.2%	±2%	8W	75%	22,000µF
PSALC-8S		8 VDC	0%	1000mA	±2%	±0.2%	±0.5%	8W	78%	6000µF
PSALC-9S		9 VDC	0%	888mA	±2%	±0.2%	±0.5%	8W	79%	6000µF
PSALC-12S		12 VDC	0%	666mA	±2%	±0.2%	±0.5%	8W	79%	3200µF
PSALC-14S		14 VDC	0%	571mA	±2%	±0.2%	±0.5%	8W	80%	1880µF
PSALC-15S		15 VDC	0%	533mA	±2%	±0.2%	±0.5%	8W	80%	1880µF
PSALC-24S		24 VDC	0%	335mA	±2%	±0.2%	±0.5%	8W	81%	1760µF

DUAL OUTPUT MODELS

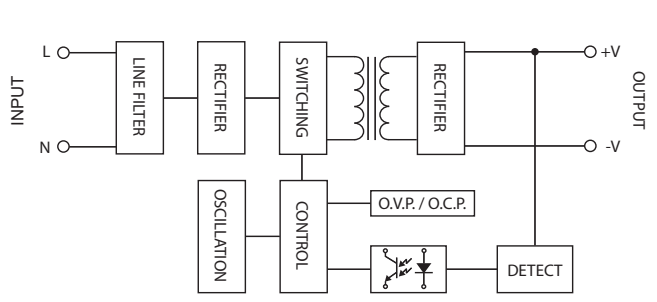
Model Number		Input Voltage	Output Voltage	Output Current Min Load[1]	Output Current Max Load	Voltage Accuracy	Line Regulation	Load Regulation (10% - 100%)	Output Power	Efficiency	Maximum Capacitive Load
PSALC-5S3.3S	Vo	90~305 VAC (120~430 VDC)	5 VDC	25%	1600mA	±2%	±0.2%	±0.5%	9W	73%	4500µF
	Vr		3.3 VDC		310mA	±15%	±3%	±5%			3800µF
PSALC-8S5S	Vo		8 VDC	25%	1000mA	±2%	±0.2%	±0.5%	8.5W	78%	800µF
	Vr		5 VDC		100mA	±10%	±3%	±5%			3800µF
PSALC-12S5S	Vo		12 VDC	25%	666mA	±2%	±0.2%	±0.5%	8.5W	79%	260µF
	Vr		5 VDC		100mA	±10%	±3%	±5%			3800µF

NOTES

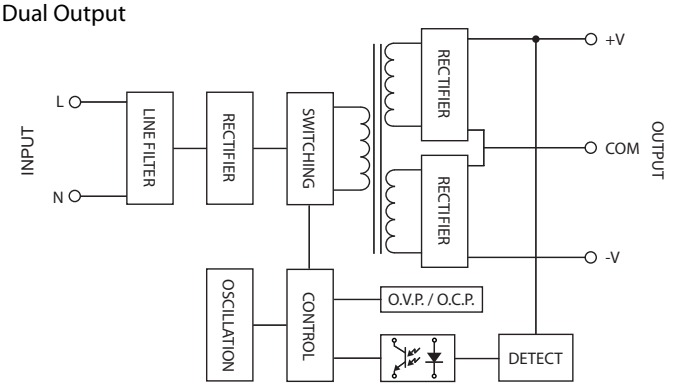
1. Dual output models require a minimum loading on the output to maintain specified regulations. Operation under no-load conditions will not damage these devices; however, they may not meet all listed specifications.

BLOCK DIAGRAMS

Single Output



Dual Output



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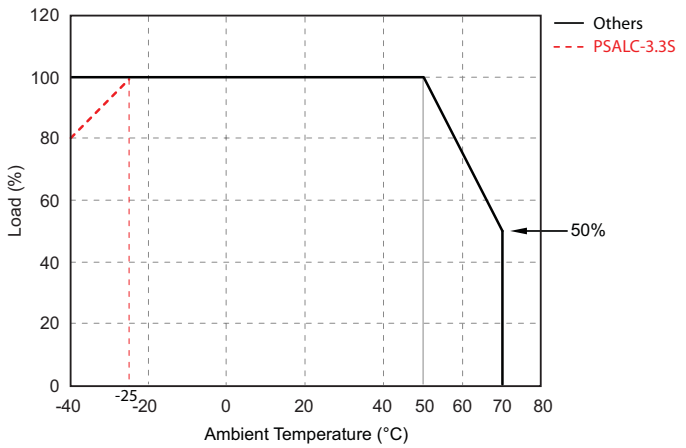
SPECIFICATIONS: PSALC SERIES

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.

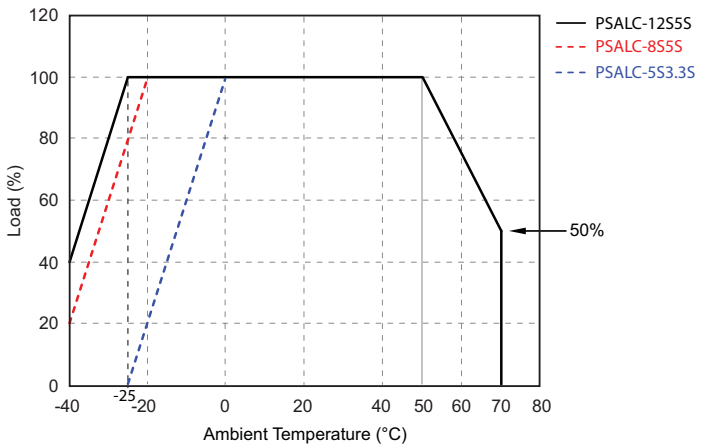
SPECIFICATION		TEST CONDITIONS	Min	Typ	Max	Unit
INPUT SPECIFICATIONS						
Input Voltage		AC input voltage range	90		305	VAC
		DC input voltage range	120		430	VDC
Input Frequency			47		440	Hz
Input Current		At 115VAC and full load			190	mA
		At 230VAC and full load			120	
Inrush Current (<500µs)		At 115VAC			25	A
		At 230VAC			45	
No Load Power Consumption					0.3	W
External Fuse (recommended)			2A slow blow type			
OUTPUT SPECIFICATIONS						
Output Voltage			See Table			
Voltage Accuracy			See Table			
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	3.3~15VDC Output Models	Measured at 20MHz BW with 0.1µF and 47µF capacitors in parallel			100	mVp-p
	24VDC Output Model				150	
	Dual Output Models				100	
Noise	3.3~15VDC Output Models	Measured at 20MHz BW with 0.1µF and 47µF capacitors in parallel			150	mVp-p
	24VDC Output Model				200	
	Dual Output Models				150	
Max Capacitive Load			See Table			
Hold-Up Time			10			ms
Temperature Coefficient			-0.02		+0.02	%/°C
PROTECTION						
Short Circuit Protection			Hiccup mode, indefinite (auto-recovery)			
Over Voltage Protection			Zener diode clamp			
Over Power Protection			Hiccup mode, auto-recovery			
GENERAL SPECIFICATIONS						
Efficiency			See Table			
Switching Frequency			124	132	140	KHz
Isolation Voltage (Input to Output)			3000			VAC
Leakage Current					0.25	mA
ENVIRONMENTAL SPECIFICATIONS						
Operating Temperature		With derating (see derating curve)	-40		+70	°C
Storage Temperature			-40		+85	°C
Humidity					95	% RH
Cooling			Free air convection			
MTBF		25°C (MIL-HDBK-217F)	350,000			hours
PHYSICAL SPECIFICATIONS						
Weight			1.6oz (45g)			
Case Material			Plastic resin with fiberglass (Flammability to UL 94V-0)			
Dimensions (L x W x H)			1.48 x 1.10 x 1.08 inches (37.5 x 28.0 x 27.4 mm)			
SAFETY & EMC						
Safety Approvals			UL/cUL, CE			
EMC		EMI (Conducted and Radiated Emissions)	EN 55022 Class B			
		EMS (Noise Immunity)	EN 55024			

DERATING CURVES

Single Output Models

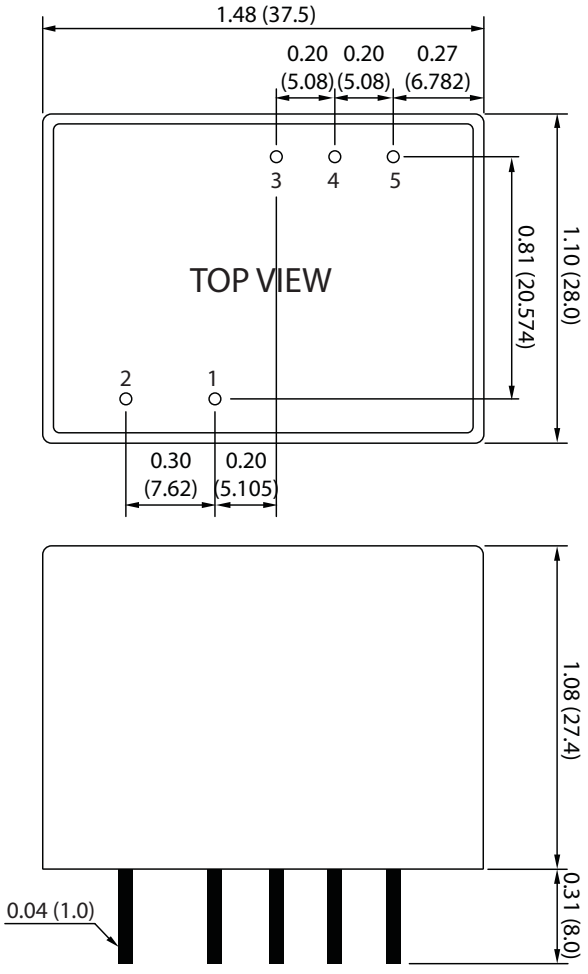


Dual Output Models



MECHANICAL DRAWING

Unit: inches (mm)



PIN CONNECTIONS		
PIN	SINGLE	DUAL
1	N	N
2	L	L
3	NC	+Vr
4	+Vo	+Vo
5	GND	GND

NOTES
1. Tolerance: ±0.02 (±0.5)
2. Weight: 1.6oz (45g)
3. Case Material: Plastic resin with fiberglass (flammability to UL 94V-0)
4. All dimensions are for reference only

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 ISO9001-2008 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:

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