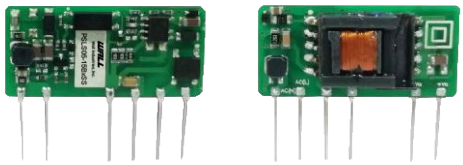


Size: 1.58in x 0.73in x 0.50in
(40mm x 18.5mm x 12.8mm)

FEATURES

- Wide Input Voltage Range: 85~305VAC/100~430VDC
- Ultra-Slim SIP Package
- Industrial Grade
- I/O Isolation Test Voltage Up to 4000VAC
- See PSLSF05 Series for 90 Degree Bent Pin Options
- High Efficiency
- Compact Size
- Over Voltage, Over Current and Short Circuit Protection
- RoHS Compliant
- IEC62368, UL62368, and EN62368 Safety Approvals

DESCRIPTION

The PSLS05 series of AC/DC converters offers up to 5 watts of output power in an ultra slim SIP package. This series consists of single output models with a wide input voltage range of 85~305VAC/100~430VDC. Each model in this series is industrial grade, has high efficiency and has I/O isolation up to 4000VAC. This series also has IEC62368, UL62368, and EN62368 safety approvals and is RoHS compliant.

MODEL SELECTION TABLE

Model Number	Input Voltage Range	Output Voltage	Output Current	Maximum Capacitive Load	Efficiency	Output Power
PSLS05-15B03SS	85-305VAC (100-430VDC)	3.3V	1A	2200µF	67%	3.3W
PSLS05-15B05SS		5V	1A	1500µF	74%	5W
PSLS05-15B09SS		9V	0.56A	680µF	75%	
PSLS05-15B12SS		12V	0.42A	470µF	76%	
PSLS05-15B15SS		15V	0.34A	330µF	77%	
PSLS05-15B24SS		24V	0.21A	100µF	79%	

SPECIFICATIONS

All specifications are based on 25°C, Humidity <75%, Nominal Input Voltage, and Rated 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 Range	Conventional		100		240	VAC
	AC Input		85		305	
	DC Input		100		430	VDC
Input Frequency			47		63	Hz
Input Current	115VAC				0.2	A
	230VAC				0.1	
Inrush Current	115VAC			5		A
	230VAC			10		
Leakage Current	CY0 is 1nF/400VAC				0.25	mA
Hot Plug			Unavailable			
OUTPUT SPECIFICATIONS						
Output Voltage			See Table			
Voltage Accuracy	3.3V Model			±2	±3	%
	All Other Models			±1	±2	
Line Regulation	Full Load			±0.5		%
Load Regulation	10%-100% Load			±1	±1.5	%
Output Power			See Table			
Output Current			See Table			
Maximum Capacitive Load			See Table			
Ripple & Noise[1]	20MHz bandwidth (peak-peak value)			50	150	mV
Temperature Coefficient				±0.02		%/°C
Stand-By Power Consumption					0.5	W
Min Load			0			%
Hold Up Time	115VAC Input		10	15		mS
	230VAC Input		65	75		
PROTECTION						
Short Circuit Protection			Continuous, Self-Recovery			
Over Current Protection			≥150%Io, Self-Recovery			
Over Voltage Protection	Output Voltage Clamp	3.3/5V Output Model		≤7.5		V
		9V Output		≤15		
		12/15V Output		≤20		
		24V Output		≤30		

SPECIFICATIONS

All specifications are based on 25°C, Humidity <75%, Nominal Input Voltage, and Rated Output Current unless otherwise noted.
We reserve the right to change specifications based on technological advances.

SPECIFICATION	TEST CONDITIONS		Min	Typ	Max	Unit
ENVIRONMENTAL SPECIFICATIONS						
Operating Temperature			-40		+85	ºC
Storage Temperature			-40		+105	ºC
Storage Humidity					85	%RH
Soldering Temperature	Wave-Soldering		260±5ºC; time: 5~10s			
	Manual-Welding		360±10ºC; time:3~5s			
Power Derating	-40°C~-25°C		2			%/ºC
	-25ºC~0ºC		0.8			
	+55ºC~+85ºC		1.33			
	85VAC-110VAC		0.8			%/VAC
	240VAC-264VAC		1.67			
	264VAC-305VAC		1			
MTBF	MIL-HDBK-217F @25ºC		300,000			Hours
GENERAL SPECIFICATIONS						
Efficiency	230VAC, % typ.		See Table			
Switching Frequency				100		kHz
Isolation Voltage	Input to Output, Electric Strength Test for 1min., Leakage Current <5mA		4000			VAC
PHYSICAL SPECIFICATIONS						
Weight			0.25oz (7g)			
Dimensions (L x W x H)			1.58in x 0.73in x 0.50in (40mm x 18.5mm x 12.8mm)			
Cooling			Free Air Convection			
SAFETY CHARACTERISTICS						
Safety Approvals & Regulated Certification		IEC62368 EN62368 UL62368[2]				
Safety Class		Class II				
EMI	CE	CISPR22/EN55032[3] CISPR22/EN55032[4]	Class A Class B			
	RE	CISPR22/EN55032[5]	Class B			
ESD	IEC/EN61000-4-2	Contact ±6kV	Perf. Criteria B			
RS	IEC/EN61000-4-3	10V/m	Perf. Criteria A			
EFT	IEC/EN61000-4-4	±2kV[3]	Perf. Criteria B			
	IEC/EN61000-4-4	±4kV[4]	Perf. Criteria B			
Surge	IEC/EN61000-4-5	Line to Line ±1kV[5]	Perf. Criteria B			
	IEC/EN61000-4-5	Line to Line ±1kV/line to ground ±2KV[4]	Perf. Criteria B			
CS	IEC/EN61000-4-6	10Vr.m.s.[4]	Perf. Criteria A			
Voltage Dips, Short Interruptions, Voltage Variations Immunity	IEC/EN61000-4-11	0%-70%	Perf. Criteria B			

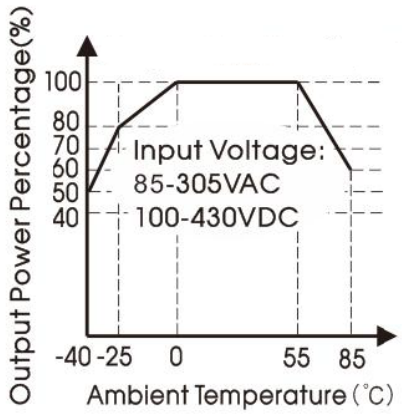
NOTES

1. The “parallel cable” method is used for ripple and noise test. Contact factory for more information.
2. This product is Listed to applicable standards and requirements by UL.
3. See Fig. 1 for typical application circuit.
4. See Fig. 2 for recommended circuit
5. See Fig. 1 for recommended circuit.
6. Module required dispensing fixed after assembled.
7. This part is open frame, at least 6.4mm safety distance between the primary and secondary external components of the module is needed to meet the safety requirements.
8. Customization is available.
9. Our products should be classified according to ISO14001 and related environmental laws and regulations and should be handled by qualified units.

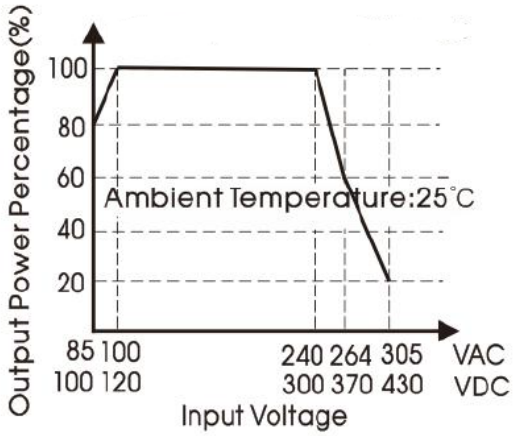
**Due to advances in technology, specifications subject to change without notice.*

CHARACTERISTIC CURVES

Temperature Derating Graph

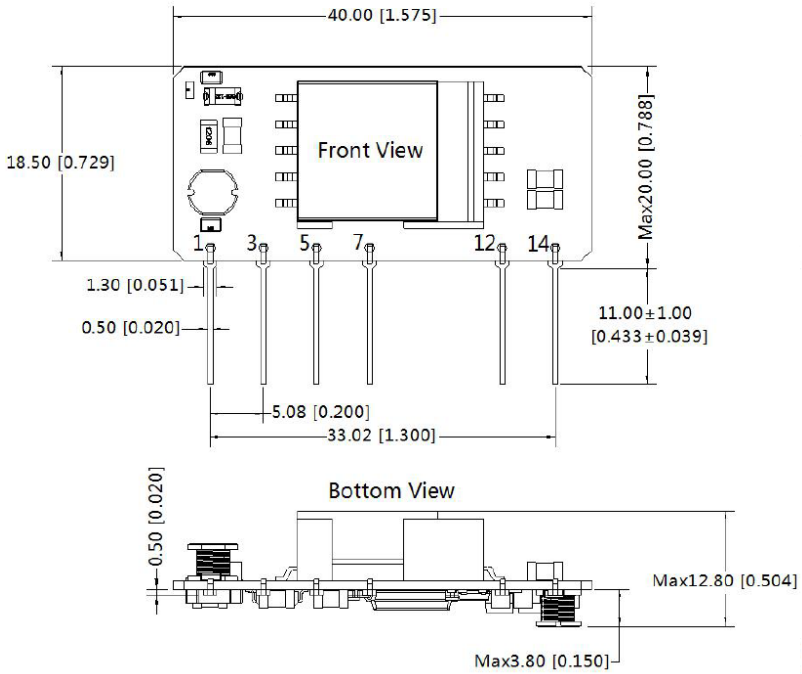


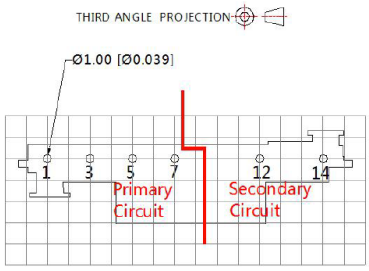
Input Voltage Derating Graph



Note:
1. With AC input between 85-100VAC/240-264VAC/264-305VAC and a DC input between 100-120VDC/340-370VDC/370-430VDC, the output power must be derated as per temperature derating curves.
2. This product is suitable for use in natural cooling environments. If in closed environment, please contact factory.

MECHANICAL DRAWINGS





Note: Grid 2.54*2.54mm

Pin Out

Pin	Function
1	AC(N)
3	AC(L)
5	+V(cap)
7	-V(cap)
12	-Vo
14	+Vo

1. It is necessary to add C1 between pin 5 and pin 7.
2. It is necessary to add circuit to the output, such as the typical application of Fig. 1.
3. It is necessary to have distance ≥6.4mm for safety between external components in primary circuit and secondary circuit.

Note:
Unit: mm [inch]
Pin Section Tolerances: ±0.10 [±0.004]
General Tolerance: ±0.50 [±0.020]
The layout of the device is for reference only, please refer to actual product.

DESIGN REFERENCE

Typical Application

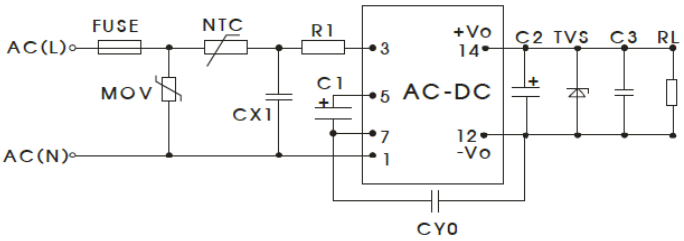


Fig. 1: Typical circuit diagram

Model	C1 (Required)	C2 (Required)	R1	C3	CX1	CY0	NTC	MOV	FUSE (Required)	TVS
PSLS05-15B03SS	10μF/400V (-25~85°C); 22μF/400V (-40~85°C)	220μF/35V (-25~85°C); 470μF/35V (-40~85°C)	12Ω/ 2W	100nF/ 50V	0.1μF/ 310VAC	1nF/ 400VAC	13D-5	14D561K	1A/300V	SMBJ7.0A
PSLS05-15B05SS										
PSLS05-15B09SS										SMBJ12A
PSLS05-15B12SS		150μF/35V (-25~85°C); 470μF/35V (-40~85°C)								SMBJ20A
PSLS05-15B15SS										
PSLS05-15B24SS										SMBJ30

Note:
1. C1 is used as filter capacitor with AC input (must be connected externally) and as EMC filter capacitor with DC input (must be connected). The recommended value of C1 is 10μF/400V (85VAC~264VAC), 10uF/450V (85VAC~305VAC); 10μF/400V (100VDC~370VDC), 10uF/450V (100VDC~370VDC)
2. We recommended using an electrolytic capacitor with high frequency and low ESR rating for C2 (refer to data sheet). Choose a capacitor voltage rating with at least 20% margin (not exceeding 80%). C3 is a ceramic capacitor used for filtering high-frequency noise.

EMC Compliance Recommended Circuit

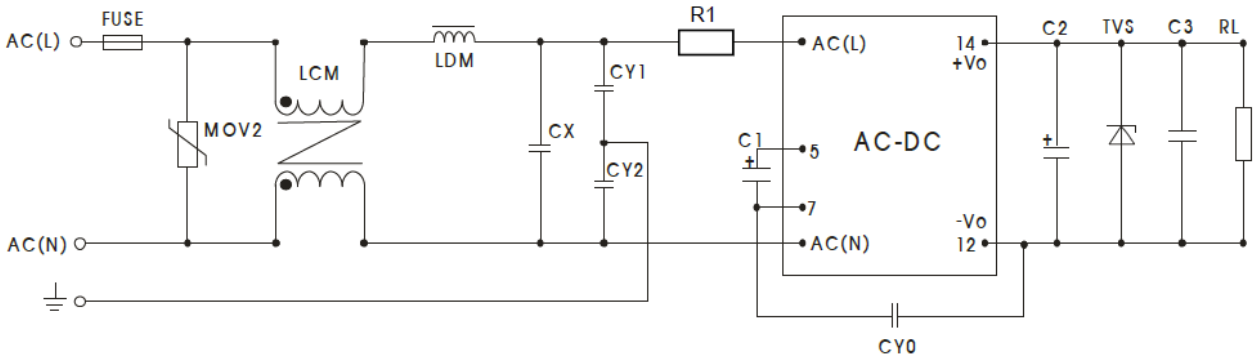


Fig 2: EMC application circuit with higher requirements

Components	Recommend Parameters
MOV2	S14K320
CY1, CY2	1nF/400VAC
CX	0.1μF/310VAC
LCM	3.5mH
LDM	330μH
R1	12Ω/2W
FUSE	1A/300V, slow-blow, required

Note: Recommended value of other components refers to typical application circuit

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.

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