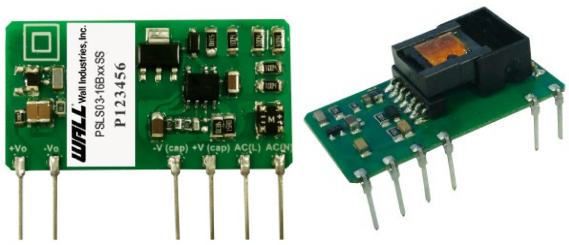


Size: 1.75in x 0.94in x 0.51in (44.50mm x 24mm x 13mm)

FEATURES

- Ultra Wide Input Voltage Range: 90~528VAC/100~745VDC
- Compact Size
- High Power Density
- Isolation Voltage: 4K VAC
- AC and DC Dual Use (Input from same Terminal)
- Cooling by Free Air Convection
- Short Circuit and Over Current Protection
- Useful in Electrical and Instrumentation Industries
- UL60950, EN60950, and FCC Part 15 Standards

DESCRIPTION

The PSLS03-16 series of AC/DC converters offers 3 watts of output power in a compact 1.75” x 0.94” x 0.51” package. This series consists of single output models with an ultra-wide input voltage range of 90~528VAC/100~745VDC. Each model in this series high power density, AC and DC dual use, and short circuit and over current protection. This series meets UL60950, EN60950, and FCC Part 15 safety standards.

MODEL SELECTION TABLE

Model Number(1)	Input Voltage Range	Output Voltage	Output Current	Line Regulation	Ripple & Noise	Output Power	Maximum Capacitive Load	Efficiency
PSLS03-16B03SS	90-528VAC (100-745VDC)	3.3V	500mA	±2.5%	180mV	1.65W	2200µF	63%
PSLS03-16B05SS		5V	500mA	±1.5%	180mV	2.5W	1100µF	67%
PSLS03-16B09SS		9V	333mA	±1.5%	180mV	3W	680µF	70%
PSLS03-16B12SS		12V	250mA	±1.5%	180mV	3W	680µF	76%
PSLS03-16B15SS		15V	200mA	±1.5%	180mV	3W	560µF	76%
PSLS03-16B24SS		24V	125mA	±1.5%	180mV	3W	470µF	76%

SPECIFICATIONS

All specifications are based on 25°C, Typical Application Circuit, Humidity <75%, Nominal Input Voltage and Rated Output 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 Range	AC Input	90		528	VAC
	DC Input	100		745	VDC
Input Frequency		47		63	Hz
Input Current	115VAC			0.12	A
	230VAC			0.06	
	480VAC			0.04	
Inrush Current	115VAC		9		A
	230VAC		15		
	480VAC		27		
Leakage Current		0.25mA RMS typ. 230VAC/50Hz			
Recommended External Input Fuse		2.0A, Slow Fusing, Necessary			
Hot Plug		Unavailable			
OUTPUT SPECIFICATIONS					
Output Voltage		See Table			
Voltage Accuracy	3.3V Output		±6		%
	Others		±5		%
Line Regulation	@Full Load	See Table			
Load Regulation	10%-100% Load		±2.5		%
Output Power		See Table			
Output Current		See Table			
Minimum Load		10			%
Maximum Capacitive Load		See Table			
Ripple & Noise(2)	20MHz bandwidth, Peak to Peak Value			180	mV
Stand-By Power Consumption	230VAC Input		0.3		W
	528VAC Input		0.5		
Hold-Up Time	230VAC Input		40		mS
Temperature Coefficient			±0.15		%/ºC

SPECIFICATIONS

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

SPECIFICATION	TEST CONDITIONS		Min	Typ	Max	Unit
PROTECTION						
Short Circuit Protection			Hiccup, Continuous, Self-Recovery			
Over Current Protection	Self-Recovery		150		300	%Io
ENVIRONMENTAL SPECIFICATIONS						
Operating Temperature	Work in power drop curve range		-40		+85	ºC
Storage Temperature			-40		+105	ºC
Storage Humidity					85	%RH
Welding Temperature	Wave-Soldering		260±5ºC, Time:5~10s			
	Manual-Welding		360±10ºC, Time: 3~5s			
Power Derating	+55ºC to +85ºC		2.0			%/ºC
	-40ºC to -20ºC		3.0			
MTBF	MIL-HDBK-217F @25ºC			≥300,000		Hours
GENERAL SPECIFICATIONS						
Typ. Efficiency	@230VAC		See Table			
Isolation Voltage	Input-Output, Test Time: 1 Minute		4000			VAC
Switching Frequency				70		kHz
PHYSICAL SPECIFICATIONS						
Weight			0.28oz (8.0g) Typ.			
Dimensions (L x W x H)			1.75in x 0.94in x 0.51in (44.50mm x 24mm x 13mm)			
Cooling Method			Free Air Convection			
SAFETY CHARACTERISTICS						
Safety Standards	IEC60950, EN60950, UL60950(11)					
Safety Certifications	IEC60950, EN60950, UL60950(11)					
Safety Class						Class II
EMI(4)	CE	CISPR22/EN55022/FCC Part 15				Class A(3)
		CISPR22/EN55022/FCC Part 15				Class B(4)
	RE	CISPR22/EN55022/FCC Part 15				Class A(3)
		CISPR22/EN55022/FCC Part 15				Class B(4)
ESD	IEC/EN 61000-4-2	Contact ±4kV				Perf. Criteria B
RS	IEC/EN61000-4-3	10V/m(4)				Perf. Criteria A
EFT	IEC/EN61000-4-4	±2kV(3)				Perf. Criteria B
		±4KV(4)				Perf. Criteria B
Surge	IEC/EN61000-4-5	Line to Line ±1kV(3)				Perf. Criteria B
		Line to Line ±2kV/Line to Ground ±4kV(4)				Perf. Criteria B
CS	IEC/EN61000-4-6	3Vr.m.s(4)				Perf. Criteria A
Voltage Dips, Short Interruptions, Voltage Variations Immunity	IEC/EN61000-4-11	0%, 70%(4)				Perf. Criteria B

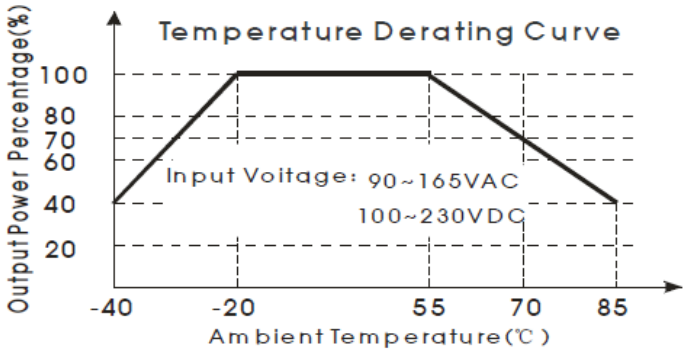
NOTES

1. 90 degree pins are available for this series. Add “-F” to end of model number to indicate 90 degree pin package.
2. Parallel line test method is adopted to test the ripple and noise. Contact factory for more details.
3. See Fig. 1 for typical application circuit.
4. See Fig. 2 for typical application circuit.
5. This device compiles with part 15 of the FCC rules. Operation is subject to the following two conditions:
   -This device may not cause harmful interference
   -This device must accept any interference received, including interference that may cause undesired operation.
6. If product is not operated within the required load range, the product performance cannot be guaranteed to comply with all parameters in the datasheet.
7. This is an open frame part. At least 10mm safety distance between primary and secondary external components of the module is needed to meet the safety requirement.
8. In order to increase the conversion efficiency of the input with light load in the design, the product will have audio noise when it is operating, but it does not affect the product’s reliability and performance.
9. Module requires dispensing fixed after assembled.
10. Customization services available
11. This product is Listed to applicable standards and requirements by UL.

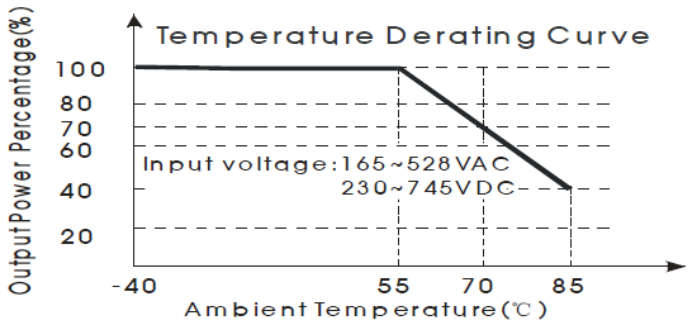
**Due to advances in technology, specifications subject to change without notice.*

CHARACTERISTIC CURVES

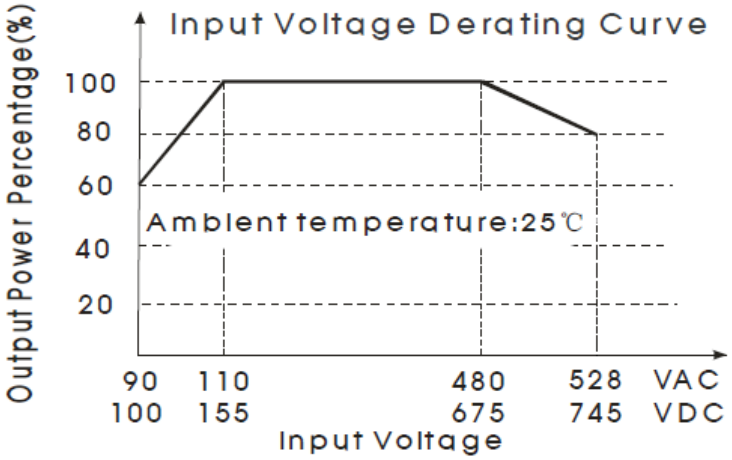
Temperature Derating Curve



Temperature Derating Curve



Input Voltage Derating Curve



Note:
1. When input 90~110VAC/480~528VAC/100~155VDC/675~745VDC, it needs to be voltage derated on basis of temperature derating Refer to typical application circuit.
2. If the product is working at full load at ambient temperature of -40ºC to -20ºC. See Fig. 2 for typical application circuit.
3. This product is suitable for use in natural air cooling environments. If in a closed environment, please contact factory.

APPLICATION CIRCUITS

1. Typical Application Circuit

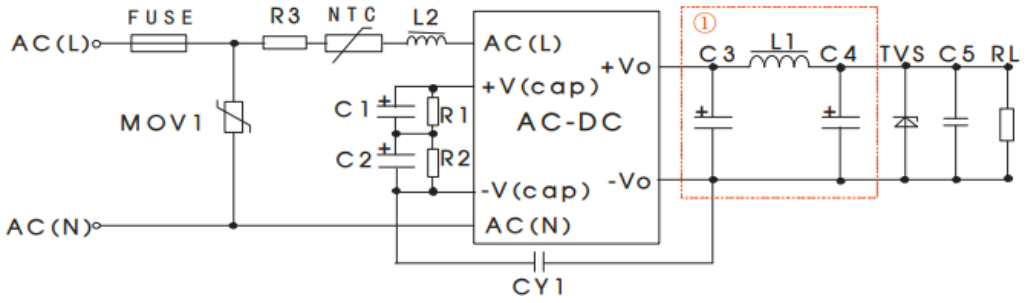


Fig. 1
Note:① is Pi filter circuit

Part No.	MOV1	C1/C2*	L2	R1/R2*	C3*	L1*	C4*	C5	CY1	FUSE*	NTC*	R3*	TVS
PSLS03-16B03SS	S14K550	22μF/450V	1.2mH	3MΩ	270μF/16V (Solid Capacitor)	4.7μH	100μF/ 35V	0.1μF/ 50V	470pF/ 500VAC	2.0A	5D-9	7.5Ω/ 1W	SMBJ7.0A
PSLS03-16B05SS													SMBJ7.0A
PSLS03-16B09SS													SMBJ12A
PSLS03-16B12SS													SMBJ20A
PSLS03-16B15SS					470μF/35V								SMBJ20A
PSLS03-16B24SS													SMBJ30A

***Necessary**

Note:
1. C1/C2: filtering electrolytic capacitor (which is required), recommended the same brand, the same model, the same batch of electrolytic capacitors; Such as the use of -25 C to +85 C environment, can use the recommended value of 10uF/450V capacitor;
2. R1/R2: max operation voltage of R1/R2 should be above 450V. While using chip resistors, it is recommended to use several chip resistors in series to meet operation voltage;
3. R3(which is required): winding resistance;
4. C3 and C4 are output filer capacitors (which is required), they are recommended to be high frequency and low impedance electrolytic capacitors. Capacitance and rated ripple current of capacitors refer to the datasheets provided by the manufactures. Capacitor voltage reduced to at least 80%. C5 is a ceramic capacitor, which is used to filter high frequency noise. C3, C4 and L1 form a pi-type filter circuit. Current of L1 and L2 refer to the datasheets provided by the manufactures, current derating to at least 80%. TVS is a recommended component to protect post-circuits (If converter fails);
5. When working at full load at ambient temperature of -40℃ to -20℃, following circuit parameters values are recommended: C1/C2 (necessary): 33μF/450V; R1/R2 (necessary): 1 MΩ; R3(necessary): 12Ω/2W; NTC(necessary): 10D-10.

3. EMC Solution-Recommended Circuit

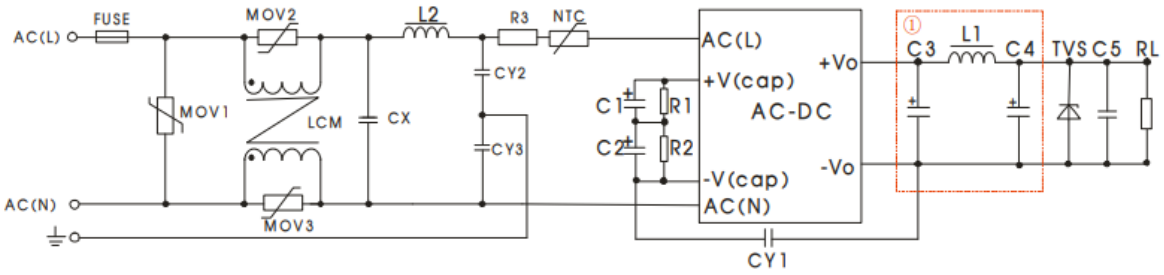


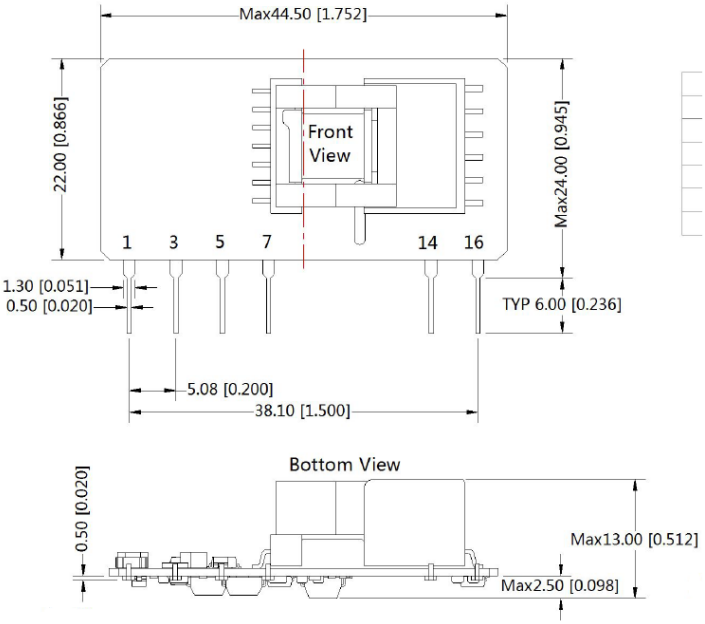
Fig. 2

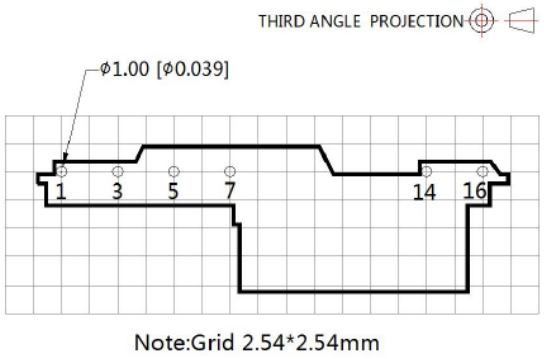
Element Model	Recommended Value
MOV1	S14K550
MOV2, MOV3	S07K300
CY2, CY3	470pF/500VAC
CX	0.1μF/530VAC
LCM	4.5mH
L2	1.2mH
NTC	10D-10
R3	12Ω/3W
FUSE	2.0A, Slow Fusing, Necessary

*Note: the recommended value of other components refers to typ. application circuit

MECHANICAL DRAWINGS

Standard



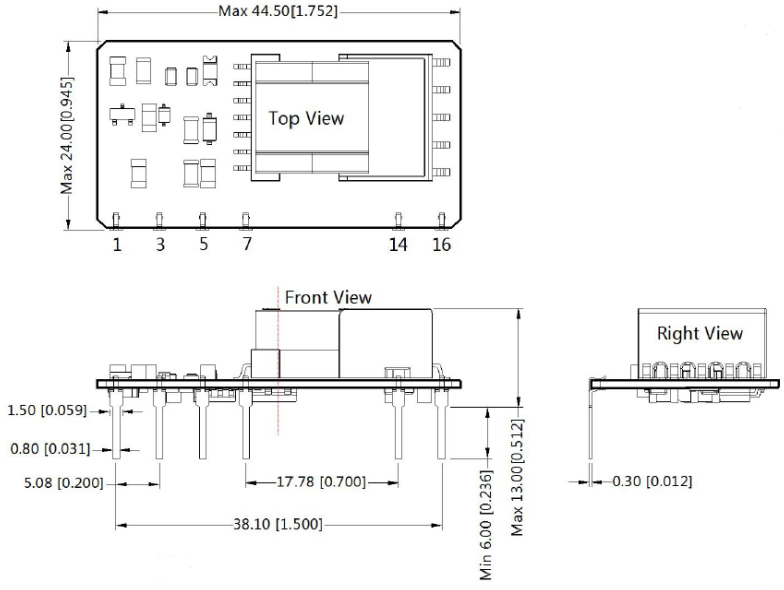


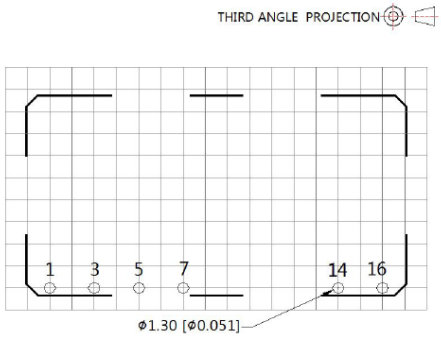
Pin-Out	
Pin	Function
1	AC(N)
3	AC(L)
5	+V(cap)
7	-V(cap)
14	-Vo
16	+Vo

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

1. It is necessary to add C1, C2, and R1, R2 between pin 5 and pin 7
2. It is necessary to ad pi-type filter circuit to the output, such as the typical application of Figure 1.

90 Degree Pins (“-F” Suffix)





Note: Grid 2.54*2.54mm

Pin Out

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

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

1. It is necessary to add C1, C2, and R1, R2 between pin5 and pin 7
2. It is necessary to add pi-type filter circuit to the output, such as the typical application circuit in Figure 1.

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:

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