



Size: 1.65in x 0.98in x 0.43in (42mm x 25mm x 11mm)

FEATURES

- AC/DC Input Range of 85~264V
- High Efficiency
- RoHS Compliant
- Low Loss, Green Power
- Ultra-Miniature Package
- Optional 90 Degree Corner Package (-F)
- Over Current, Over Voltage, and Short Circuit Protection
- Coated Package
- UL60950/EN60950 Standards

DESCRIPTION

The PSL05C series of AC/DC converters offers up to 5 watts of output power in an ultra-compact 1.65" x 0.98" x 0.43" package. This series consists of coated single output models with a wide AC/DC input of 85~264V (100~400V). Each model in this series is RoHS compliant, has over current, over voltage, and short circuit protection, and has high efficiency. This series meets UL60950/EN60950 standards.

MODEL SELECTION TABLE

Model Number ⁽¹⁾	Input Voltage Range	Output Voltage	Output Current	Ripple & Noise	Standby Power	Output Power	Maximum Capacitive Load	Efficiency
PSLS05C-15B03S	AC: 85~264V DC: 100~400V	3.3V	1000mA	150mV	0.5W Max.	3.3W	220µF	65%
PSLS05C-15B05S		5V	1000mA	120mV		5W	220µF	70%
PSLS05C-15B09S		9V	560mA	120mV		5W	100µF	72%
PSLS05C-15B12S		12V	420mA	120mV		5W	100µF	74%
PSLS05C-15B15S		15V	340mA	120mV		5W	100µF	75%
PSLS05C-15B24S		24V	210mA	150mV		5W	100µF	75%

SPECIFICATIONS

All specifications are based on 25°C, 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	TEST CONDITIONS			Unit
		Min	Typ	Max	
INPUT SPECIFICATIONS					
Input Voltage Range	AC Input	85		264	V
	DC Input	100		400	
Input Frequency		47		440	Hz
Input Current	115VAC			0.2	A
	230VAC			0.1	
Inrush Current	115VAC		20		A
	230VAC		30		
Leakage Current	CY0 is 1nF/400VAC			0.25	A
OUTPUT SPECIFICATIONS					
Output Voltage		See Table			
Voltage Accuracy	3.3V Model		±2.0	±3.0	%
	Other Models		±1.0	±2.0	
Line Regulation	Full Load		±0.1	±0.5	%
Load Regulation	10% to 100%		±1.0	±0.5	%
Output Power		See Table			
Output Current		See Table			
Minimum Load		10			%
Maximum Capacitive Load		See Table			
Ripple & Noise ⁽³⁾	(20MHz bandwidth)		50	120	mVp-p
Hold Up Time	115VAC	20			mS
	230VAC	80			
Temperature Coefficient			±0.02		%/°C
PROTECTION					
Short Circuit Protection		Continuous, Automatic Recovery			
Over Current Protection		≥110%Io, Automatic Recovery			
Over Voltage Protection		Zener Diode Clamp			
ENVIRONMENTAL SPECIFICATIONS					
Operating Temperature		-25		+85	°C
Storage Temperature		-40		+105	°C
Surface Temperature				+100	°C
Storage Humidity				85	%RH
Power Derating	-25°C~0°C	0.8			%/°C
	+55°C+85°C	1.33			
Welding Temperature	Wave Soldering	260±5°C; time:5~10s			
	Manual Welding	360±10°C; time:3~5s			
MTBF	@25°C	300,000			Hours

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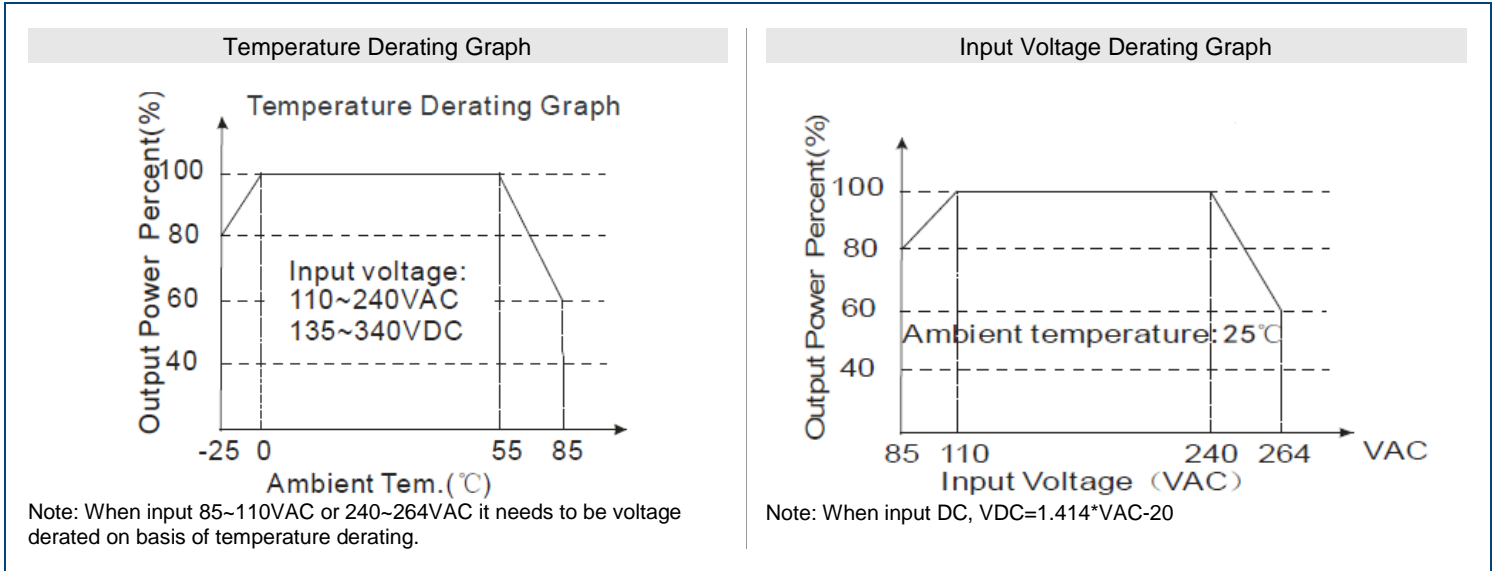
SPECIFICATION	TEST CONDITIONS		Min	Typ	Max	Unit
GENERAL SPECIFICATIONS						
Efficiency	@230VAC,Typ.		See Table			
Switching Frequency				100		kHz
Isolation Voltage	Input to Output, Tested for 1 minute (Leakage Current setting Value: 5mA)		3000			VAC
Isolation Resistance			100			MΩ
PHYSICAL SPECIFICATIONS						
Weight			0.35oz (10g)			
Dimensions (L x W x H)			1.65in x 0.98in x 0.43in (42mm x 25mm x 11mm)			
Hot Swap			Forbid			
Installation			PCB			
Cooling			Free Air Convection			
SAFETY CHARACTERISTICS						
Safety Approvals			UL60950/EN60950 UL/CE ⁽⁵⁾			
Safety Class			Class II			
EMI	CE	CISPR22/EN55022	Class A ⁽⁶⁾			
		CISPR22/EN55022	Class B ⁽⁷⁾			
ESD	IEC/EN61000-4-2	Contact ±4KV	Perf. Criteria B			
		RS	IEC/EN61000-4-3	10V/m	Perf. Criteria A	
EFT	IEC/EN61000-4-4	±2KV ⁽⁶⁾	Perf. Criteria B			
		±4KV ⁽⁷⁾	Perf. Criteria B			
Surge	IEC/EN61000-4-5	±1KV/±2KV ⁽⁷⁾	Perf. Criteria B			
CS	IEC/EN61000-4-6	3 Vr.m.s ⁽⁷⁾	Perf. Criteria A			
PFM	IEC/EN61000-4-8	10A/m	Perf. Criteria A			
Voltage dips, short and interruptions immunity	IEC/EN61000-4-11	0%-70%	Perf. Criteria B			

NOTES

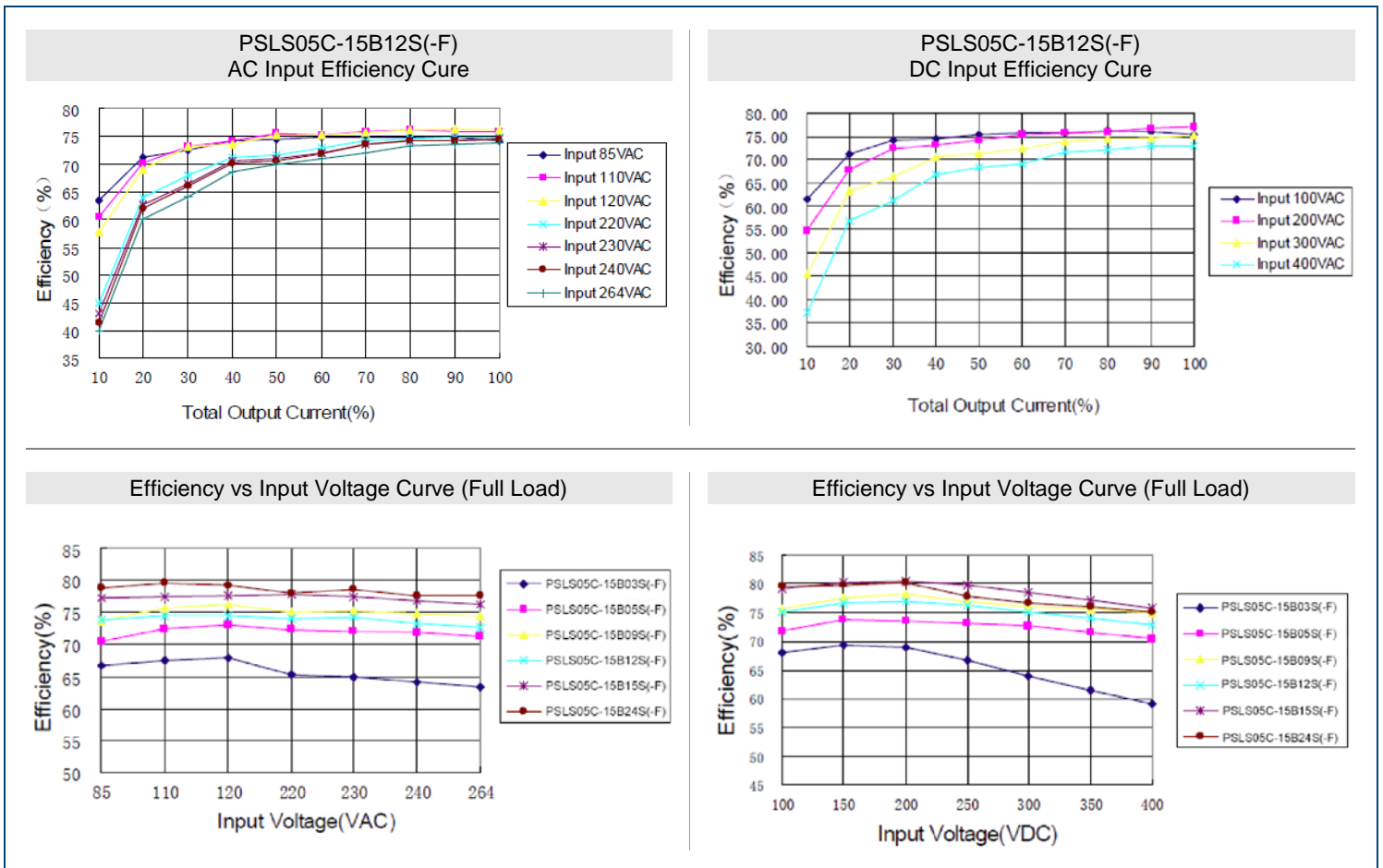
1. Add "-F" to end of model number to indicate 90 degree package.
2. External electrolytic capacitors are required to modules, refer to typical applications for more details.
3. Ripple and Noise refers to "Ripple and Noise Measure Figure"
4. Module requires dispensing fixed after assembled.
5. -F models do not meet these approvals.
6. Typical Application Circuit Refer to Figure 1.
7. Recommended Circuit Refer to Figure 3.

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

DERATING CURVES

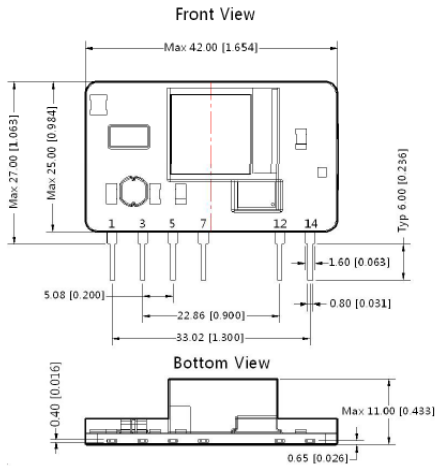


EFFICIENCY GRAPHS



MECHANICAL DRAWINGS

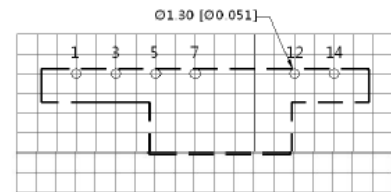
Standard Case



PIN CONNECTION

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

Recommended Footprint Details



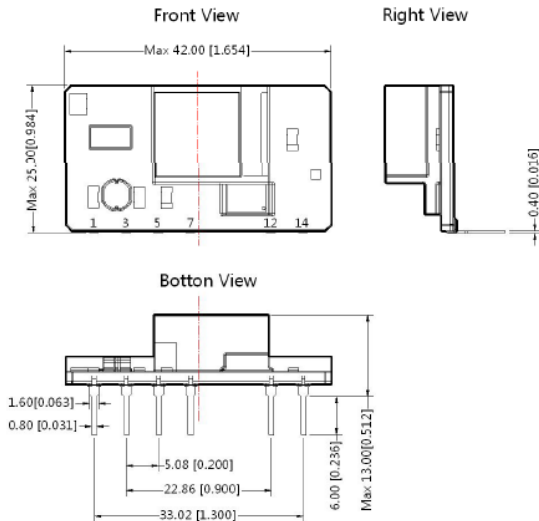
Note : Grid 2.54*2.54mm

Notes:

1. It is necessary to add C1 between pin5 and pin7.
2. It is necessary to add Pi filter circuit to the output, such as the typical application of Figure 1.
3. Unit: mm[inch]
4. Pin section tolerances: $\pm 0.1[\pm 0.004]$
5. General tolerances: $\pm 0.50[\pm 0.020]$



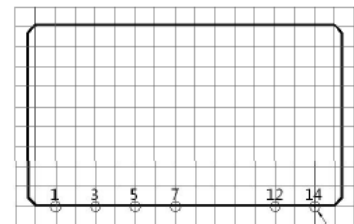
90 Degree Case



PIN CONNECTION

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

Recommended Footprint Details



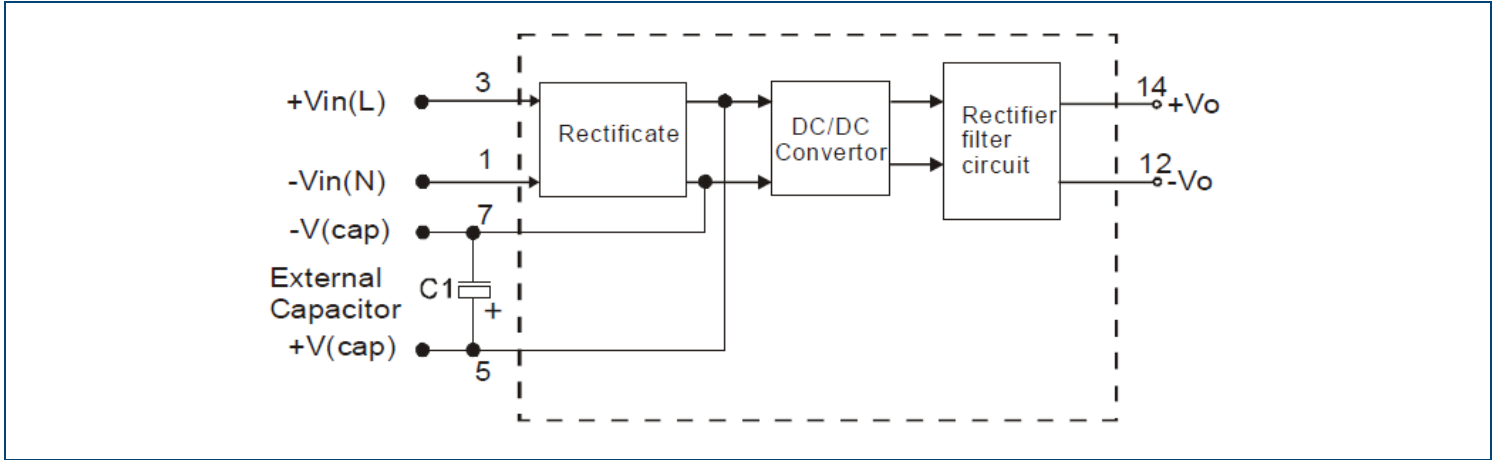
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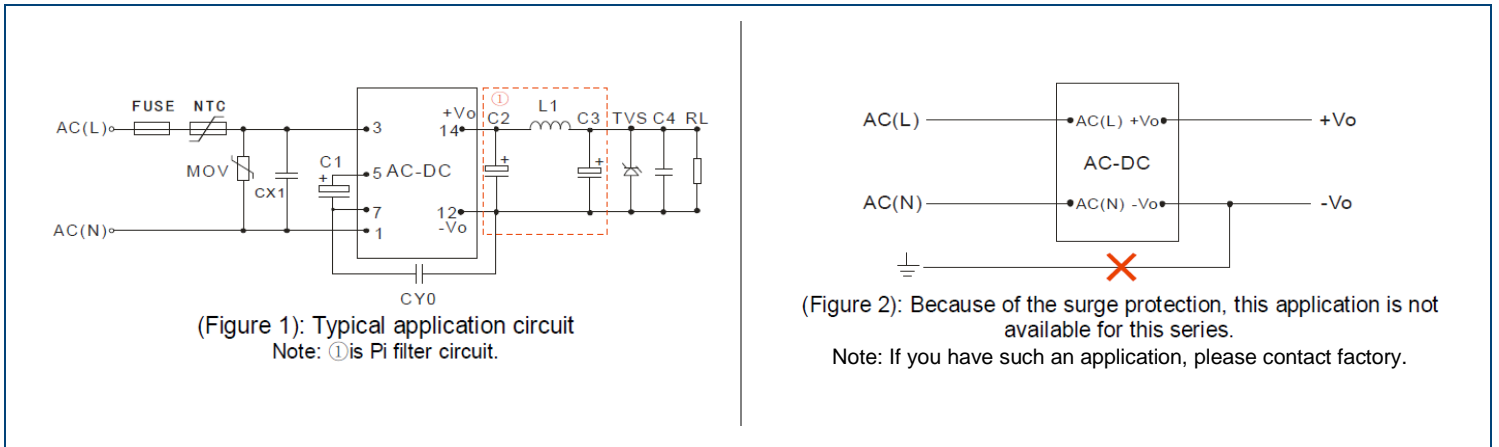
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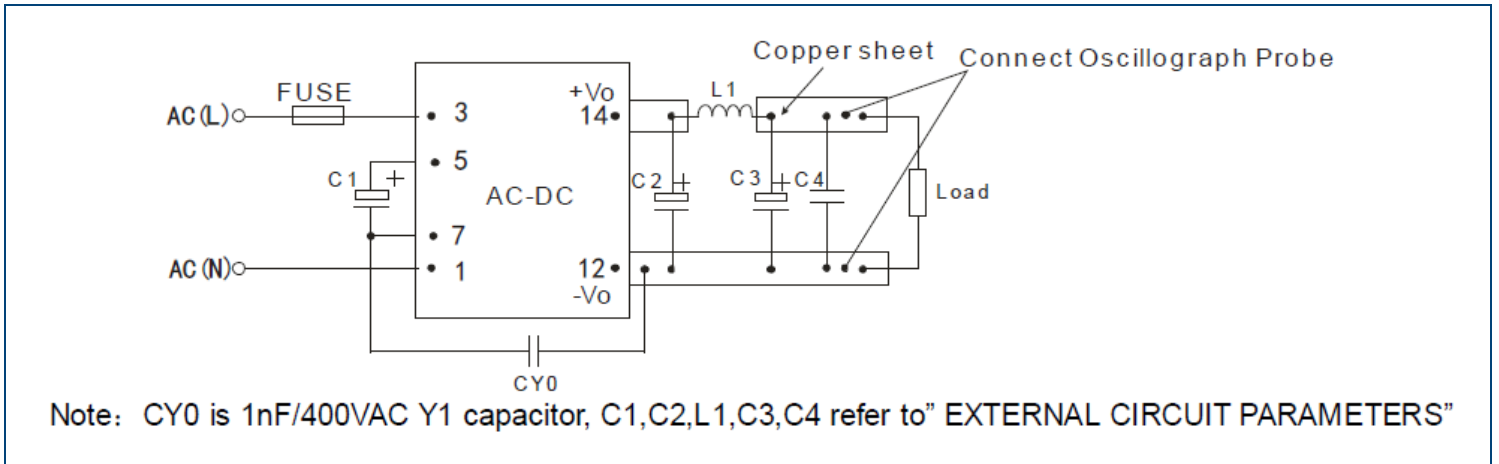
STRUCTURE FIGURE



TYPICAL APPLICATIONS



RIPPLE AND NOISE MEASURE FIGURE RIPPLE



EMC RECOMMENDED CIRCUIT

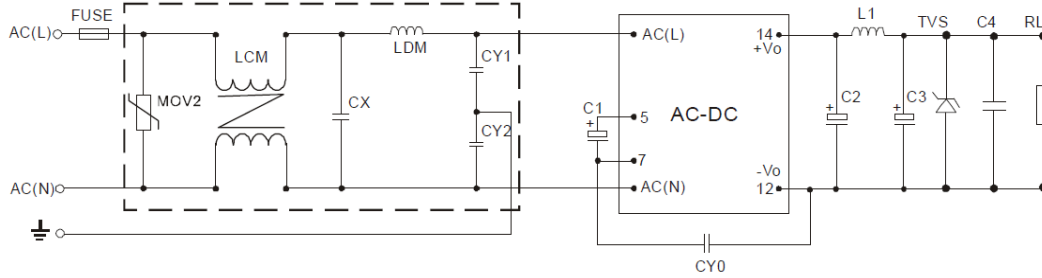


Figure 3: Recommended circuit for applications which require higher EMC standard.

EMC RECOMMENDED CIRCUIT PCB LAYOUT

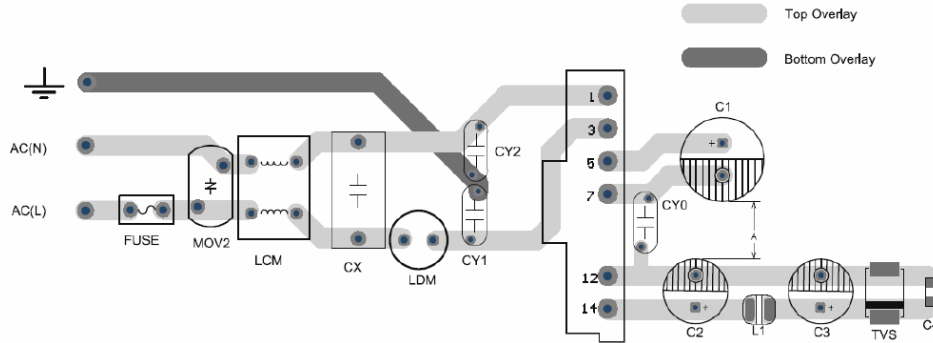


Figure 4: EMC application circuit PCB layout

Safety and Recommended Wiring: linewidth $\geq 3\text{mm}$, line-line distance $\geq 6\text{mm}$, line-ground distance $\geq 6\text{mm}$, $A \geq 6.4\text{mm}$

EXTERNAL CIRCUIT PARAMETERS

Model	C1 (Required)	C2 (Required)	L1 (Required)	C3 (Required)	CX1	C4	CY0	FUSE (Required)	TVS
PSLS05C-15B03S(-F)	22 μF /400V	470 μF /10V	0.47 μH	150 μF /35V	0.1 μF /275VAC	100nF/50V	1nF/400 VAC	1A/250V	SMBJ7.0A
PSLS05C-15B05S(-F)		470 μF /16V							SMBJ12A
PSLS05C-15B09S(-F)		300 μF /25V	1 μH	SMBJ20A					
PSLS05C-15B12S(-F)			4.7 μH	47 μF					SMBJ30A
PSLS05C-15B15S(-F)									
PSLS05C-15B24S(-F)	100 μF /35V								

- Notes:
- C1, C2, and C3 are electrolytic capacitors. They are required for both AC input and DC input. When AC input, C1 is used as filter capacitor, the value of C1 is recommended to be 22 μF /400V. When DC input, C1 is used as EMC filter capacitor, the value of C1 is recommended to be 10 μF /400V (when the input voltage is above 370VDC, the recommended value of C1 is 10 μF /450V). C2 and C3 are output filter capacitors, they are recommended to be high frequency and low impedance electrolytic capacitors. Capacitance and rated ripple current of capacitors refer to the datasheets provided. Voltage derating of capacitors should be 80% or above. C4 is a ceramic capacitor, which is used to filter high frequency noise. C2, C3 and L1 form a pi-type filter circuit. Current of L1 refer to the datasheets provided by the manufacturers, current derating should be 80% or above. To protect post-circuits (if converter fails), TVS is recommended. External NTC thermistor is recommended to be 5D-9. External input MOV is recommended to use S14K350.
 - For Standard EMC requirement, please refer to figure 1. If higher EMC requirement, please refer to figure 3, recommended parameters are shown in table below.

Recommended Parameter for Higher EMC Standard Circuit

Components	Recommend Parameter
MOV2	S10K300
CY1, CY2	1nF/400VAC
CX	0.1 μF /275VAC
LCM	3.5mH
LDM	5mH
FC-L01DV1	1KV/2KV Surge Protector
FUSE	1A/250V, slow blow, it must be connected to FUSE

PACKING INFORMATION

Standard Packaging	90 Degree Packaging
	
<p>Note: Unit :mm[inch] Inner carton dimensions: L*W*H=355*192*93 Packaging quantity:70 pcs Outer carton dimensions: L*W*H=405*380*305 Packaging quantity:420 pcs</p>	<p>Note: Unit :mm[inch] Inner carton dimensions: L*W*H=365*350*105 Packaging quantity : 280pcs Outer carton dimensions : L*W*H=390*360*245 Packaging quantity: 560pcs</p>

MODEL NUMBER SETUP

PSLS	05	C	-	1	5	B	15	S	-	F
Series Name	Output Power	Covered		Isolation Voltage	Input Voltage	Output Style	Output Voltage	Special Mark		Package Type
	05: 5 Watt			1: 3000VAC			03: 3.3V 05: 5V 09: 9V 12: 12V 15: 15V 24: 24V			Blank: Standard F: 90 Degree

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:

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