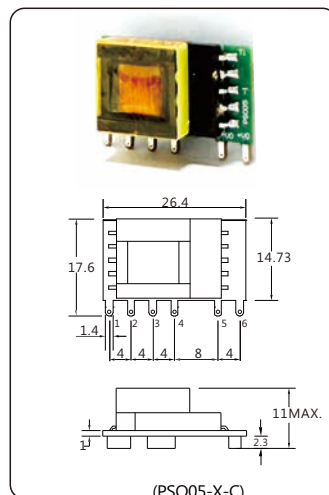
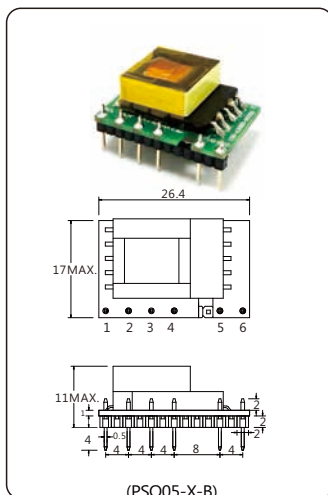
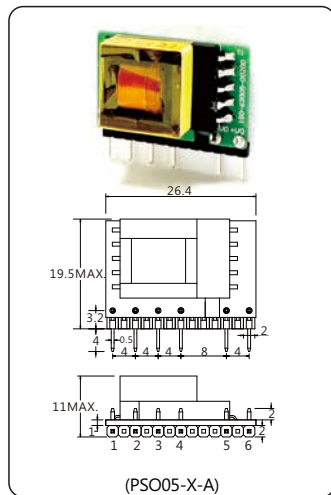




■ Plug Assignment

PIN CONNECTIONS	
PIN	Function
1	AC(L)
2	AC(N)
3	+V(cap)
4	-V(cap)
5	-Vo
6	+Vo

■ INPUT

parameter	conditions/description	min	typ	max	units
voltage	AC input	85		305	Vac
	DC input	100		430	Vdc
frequency		47		63	Hz
current	at 115 Vac			0.2	A
	at 230 Vac			0.1	A
inrush current	at 115 Vac		20		A
	at 230 Vac		40		A
no load power consumption	at 230 Vac			0.15	W

■ OUTPUT

parameter	Conditions/description	min	typ	max	units
capacitive load	3.3 Vdc output models			2,200	μF
	5 Vdc output models			1,500	μF
	9 Vdc output models			680	μF
	12 Vdc output models			470	μF
	15 Vdc output models			330	μF
	24 Vdc output models			100	μF
initial set point accuracy	10% ~ 100% load		±5		%
line regulation	at rated load		±1.5		%
load regulation	10% ~ 100% load		±3		%
temperature coefficient			±0.15		%/°C

■ PROTECTIONS

parameter	conditions/description	min	typ	max	units
over current protection	auto recovery	110			%
short circuit protection	continuous, auto recovery, hiccup				

■ Safety agency approvals:



■ SAFETY & COMPLIANCE

parameter	conditions/description	min	typ	max	units
isolation voltage	input to output for 1 minute, leakage current <5mA	3,000			Vac
safety approvals	certified to LVD 62368: IEC, EN designed to meet 61558: IEC, EN designed to meet 60335: IEC, EN				
safety class	class II				
EMI/EMC	CISPR32/EN55032 CLASS A (Recommended circuit 1, 4) CISPR32/EN55032 CLASS B (Recommended circuit 2, 3)				
ESD	IEC/EN 61000-4-2 Contact ±6KV perf. Criteria B				
radiated immunity	IEC/EN61000-4-3 10V/m perf. Criteria A				
EFT/burst	IEC/EN61000-4-4 ±2KV (Recommended circuit 1, 2) perf. Criteria B IEC/EN61000-4-4 ±4KV (Recommended circuit 3, 4) perf. Criteria B				
surge	IEC/EN61000-4-5 line to line ±1KV (Recommended circuit 1, 2) perf. Criteria B IEC/EN61000-4-5 line to line±2KV (Recommended circuit 3, 4) perf. Criteria B				
conducted immunity	IEC/EN61000-4-6 10Vr.m.s perf. Criteria A				
voltage dips and interruptions	IEC/EN61000-4-11 0%, 70% perf. Criteria B				
MTBF	as per MIL-HDBK-217F at 25 °C	1,000,000			hours
RoHS	yes				

Model name ¹	OutputVoltage(VDC)	Output min.(A)	Current(A) max.(A)	Output powermax.(W)	Ripple and noise ² typ(mVp-p)	Efficiency ³ typ(%)
PSO05-0-X	3.3	0.1	1.0	3.3	150	69.0
PSO05-1-X	5.0	0.1	1.0	5.0	150	76.0
PSO05-2-X	9.0	0.056	0.56	5.0	150	77.0
PSO05-3-X	12.0	0.042	0.42	5.0	150	79.0
PSO05-4-X	15.0	0.034	0.34	5.0	150	79.0
PSO05-6-X	24.0	0.021	0.21	5.0	150	81.0

Note: 1.X: Mounting style=**A**: Straight pin ; **B**: Bent pin ; **C**: Golden finger PCB type

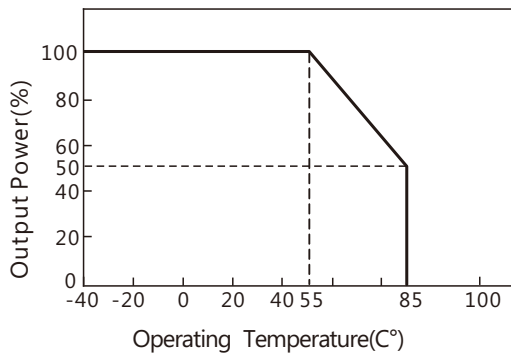
2.At full load, nominal input, 20 MHz bandwidth oscilloscope, see Application Circuit 10% - 100% load.

3.At 230 Vac input.

4.Weight: 5.45g/PC, 660g/TRAY.

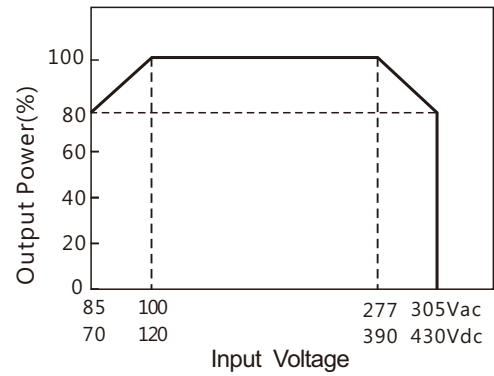
● DERATING CURVES

TEMPERATURE DERATING CURVE



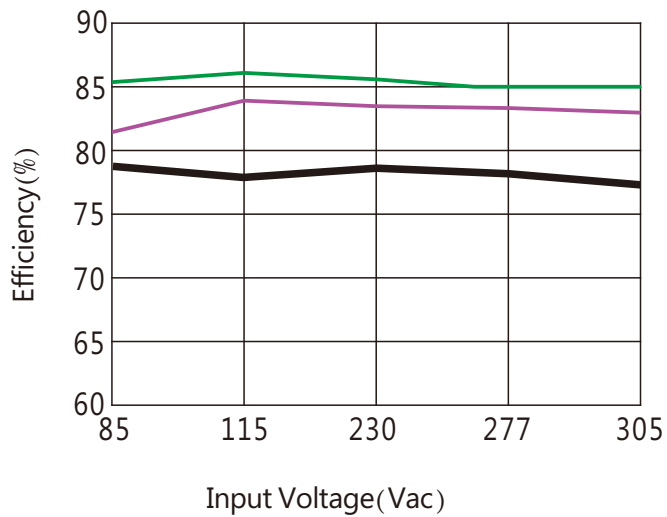
Key
 Input Voltage:
 85-305 Vac
 70-430 Vdc

INPUT VOLTAGE DERATING CURVE(25°C)



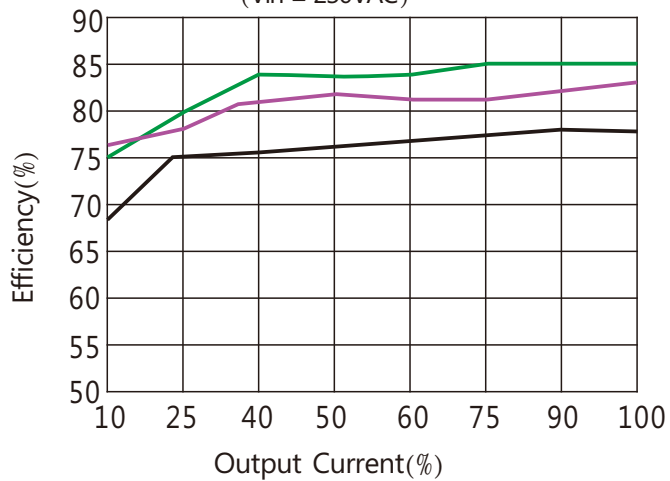
● EFFICIENCY CURVES

TEMPERATURE DERATING CURVE



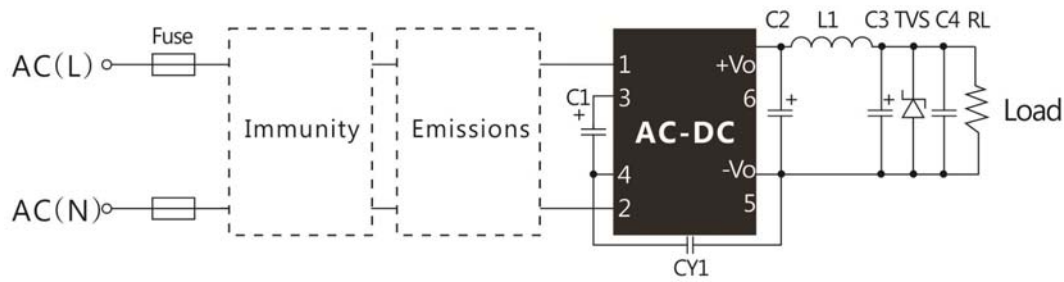
Key
 PSO05-6
 PSO05-3
 PSO05-1

EFFICIENCY VS OUTPUT LOAD
 (Vin = 230VAC)



Key
 PSO05-6
 PSO05-3
 PSO05-1

● APPLICATION DESIGN REFERENCE



PSO-05 Series additional component selection guide (no EMC devices)

Part no.	C1 ² (required)	C2 (required)	L1 (required)	C3 ³ (required)	C4	CY1 (required)	TVS ⁴
PSO05-0-X ¹	22uF/450V (-40°C to 85°C with 85-305 Vac input)	820uF/6.3V (Polymer capacitor)	4.7uH Max,60mΩ/ 2.2A	100uF/ 35V	0.1uF/ 50V (ceramic capacitor)	1.0nF/ 400Vac	SMBJ7.0A
PSO05-1-X ¹	10uF/450V (-25°C to 85°C with 85-305 Vac input, or -40°C to 85°C with 165-305 Vac input)	470uF/16V (Polymer capacitor)		47uF/ 35V			SMBJ7.0A
PSO05-2-X ¹		270uF/16V (Polymer capacitor)					SMBJ12A
PSO05-3-X ¹		220uF/35V					SMBJ20A
PSO05-4-X ¹							SMBJ20A
PSO05-6-X ¹							SMBJ30A

Note:

1. X: Mounting style= A: Straight pin ; B: Bent pin ; C: Golden finger PCB type ; D: PCB board
2. Recommended to use a capacitor with ripple current>200 mA at 100 KHz.
3. Recommended to use a polymer capacitor (at -40°C) with at least 20% margin on voltage rating
4. A suppressor diode (TVS) is recommended to protect the downstream application in case of converter failure and should be rated for a minimum of 1.2 times the converter's output voltage.

PSO-05 Series Environmental and EMC selection guide

Recommended circuit	Application environmental	Typical industry	Input voltage range	Environment temperature	Emissions	Immunity
1.	Basic application	None	85~305Vac	-40°C to 85°C	Class A	Class III
2	Indoor civil environment	Smart home/Home appliances(2 Y-caps)		-25°C to 55°C	Class B	Class III
	Indoor general environment	Intelligent building/ Intelligent agriculture				
3	Indoor industrial environment	Manufacturing workshop		-25°C to 55°C	Class B	Class IV
4	Outdoor general environment	ITS/Video monitoring/ Charging point/ Communication/Security and protection		-40°C to 85°C	Class A	Class IV

Immunity design circuits reference		Emissions design circuits reference	
Class III	Class IV	Class A	Class B

● **APPLICATION DESIGN REFERENCE (CONTINUED)**

Circuit 1

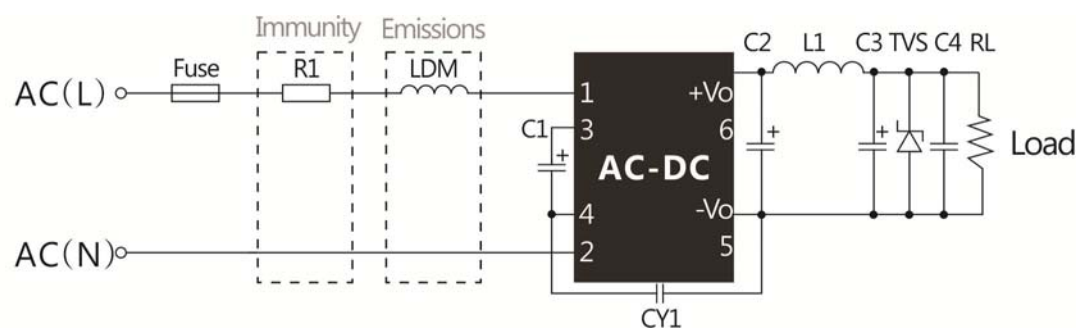


Table 1

Application environmental	Ambient temperature range	Immunity Class	Emissions Class
Basic application	-40°C~85°C	Class III	Class A

Component	Recommended value
FUSE(required)	1A/300V,slow blow
R1 (wire-wound resistor, required)	12Ω/3W
LDM	4.7mH/15Ω max/0.2A min

Note: R1 must be a wire-wound resistor; do not use a chip or carbon film resistor.

Circuit 2

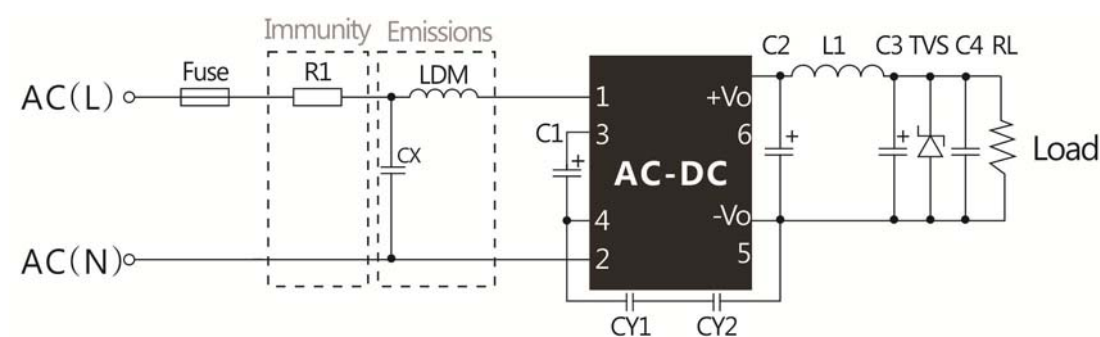


Table 2

Application environmental	Ambient temperature range	Immunity Class	Emissions Class
Indoor civil / general	-25°C~55°C	Class III	Class B

Component	Recommended value
R1(wire-wound resistor, required)	12Ω/3W
LDM	1.2mH/ 4Ω/0.2A
CX	0.1uF/310Vac
FUSE (required)	1A/300V, slow-blow

- Note: 1. For Smart Home and Home Appliance applications two Y-capacitors are required in series (2.2nF/250Vac each)
2. Many safety standards require a bleeder resistor no greater than 3.8MΩ in parallel with the X-capacitor.
3. R1 must be a wire-wound resistor; do not use a chip or carbon film resistor.

● **APPLICATION DESIGN REFERENCE (CONTINUED)**

Circuit 3

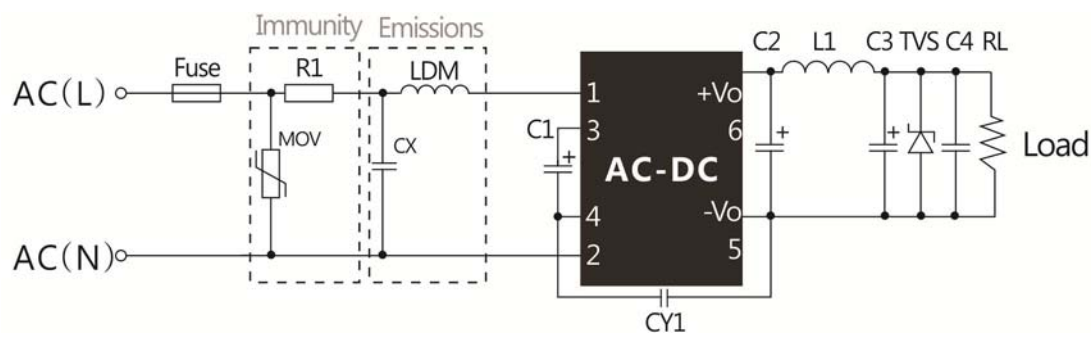


Table 3

Application environmental	Ambient temperature range	Immunity Class	Emissions Class
Indoor industrial	-25°C~55°C	Class IV	Class B

Component	Recommended value
MOV	S14K350
CX	0.1uF/310Vac
LDM	1.2mH/4Ω/0.2A
R1(wire –wound resistor, required)	12Ω/3W
FUSE (required)	2A/300V, slow-blow

Note: 1. Many safety standards require a bleeder resistor no greater than 3.8MΩ in parallel with the X-capacitor.

2. R1 must be a wire-wound resistor; do not use a chip or carbon film resistor.

Circuit 4

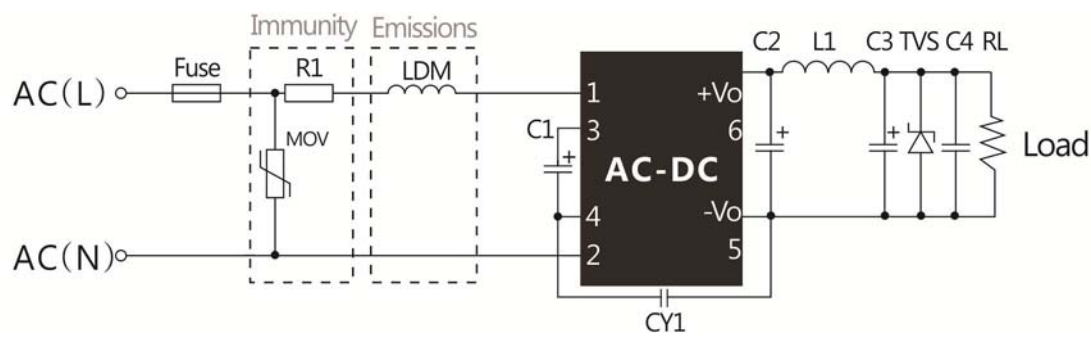


Table 4

Application environmental	Ambient temperature range	Immunity Class	Emissions Class
Outdoor general environment	-40°C~85°C	Class IV	Class A

Component	Recommended value
MOV	S14K350
LDM	4.7mH/ 15Ω/0.2A
R1 (wire-wound resistor, required)	12Ω/2W
FUSE (required)	2A/300V, slow-blow

Note: R1 must be a wire-wound resistor; do not use a chip or carbon film resistor.

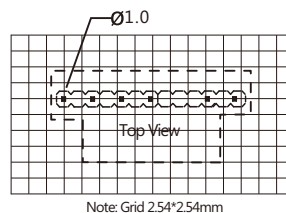
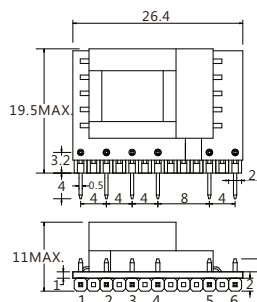
● MECHANICAL DRAWING

Straight-pin configuration

Units: mm

Pin section tolerance: ± 0.30

General tolerance: ± 1.0



Note: Grid 2.54*2.54mm

PIN CONNECTIONS	
PIN	Function
1	AC(L)
2	AC(N)
3	+V(cap)
4	-V(cap)
5	-Vo
6	+Vo

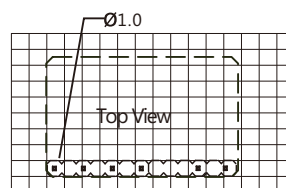
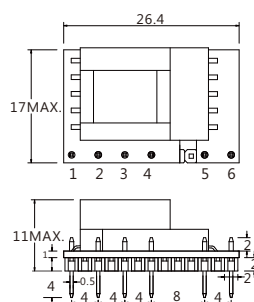
(PSO05-X¹-A²)

Bent-pin configuration

Units: mm

Pin section tolerance: ± 0.30

General tolerance: ± 1.0



Note: Grid 2.54*2.54mm

PIN CONNECTIONS	
PIN	Function
1	AC(L)
2	AC(N)
3	+V(cap)
4	-V(cap)
5	-Vo
6	+Vo

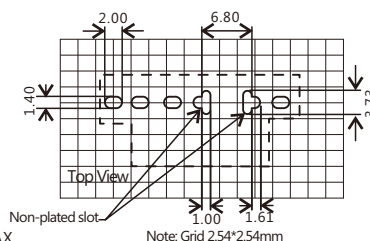
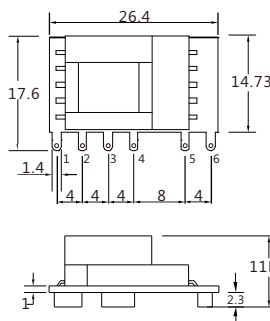
(PSO05-X¹-B²)

Golden finger PCB configuration

Units: mm

Pin section tolerance: ± 0.30

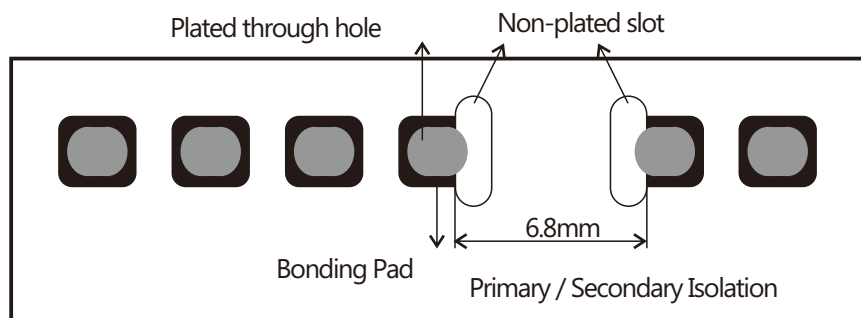
General tolerance: ± 1.0



Note: Grid 2.54*2.54mm

PIN CONNECTIONS	
PIN	Function
1	AC(L)
2	AC(N)
3	+V(cap)
4	-V(cap)
5	-Vo
6	+Vo

(PSO05-X¹-C²)



Note:

1. There are two, non-metallic / non-plated, slots located between pins 4 and 5 that are required to maintain proper creepage distance and isolation between primary and secondary circuits
2. Solderability: 250°C $\pm 5\%$, for 4-6 seconds