

# 7W AC/DC-DC CONVERTER

SAW07S Series one is SHINHOM to provide customers with a small package form of high-performance module power supply, this series of power supply with AC and DC dual wide voltage input, built-in lightning and surge protection circuit, built-in pulse group attenuator, built-in differential mode, common mode filter, efficiency up to 88% (full series synchronous rectification) and less than 0.1W ultra-low no-load power consumption and other advantages. The power supply adopts vacuum potting package to prevent dust and moisture. This series of power supplies complies with EN55032 Class B Electromagnetic compatibility (EMC) characteristics and Class I isolation levels (safety regulations), and typical circuits can pass certification tests.



## FEATURES:

- Global range of AC/DC input
- High efficiency, high power density
- Stabilized output voltage, low ripple noise
- Small size: 28\*37\*19mm
- Protection type: overload protection/Short circuit protection/overheat protection
- Built-in EMC circuit complies with EN55032 Class B Class II isolation level (safety regulations)
- Standby low power consumption, green environmental protection
- No need for peripheral circuit design, PCB welded plastic shell natural cooling

## APPLICATION:

- Industrial electrical equipment
- Mechanical equipment
- Industrial automation equipment
- Handheld electronic device
- Wireless network
- Telecommunications/data communications
- Instrument and meter
- Intelligent field

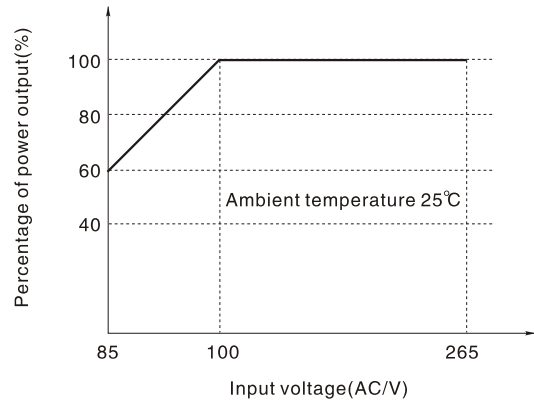
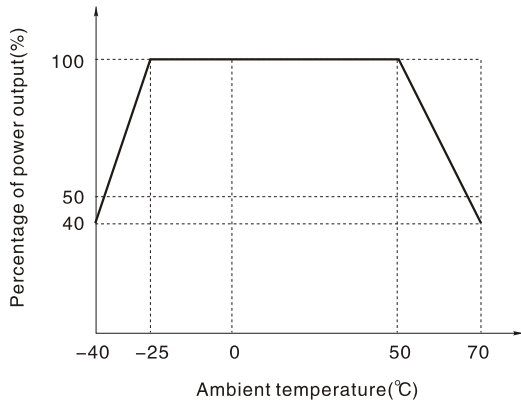
## ELECTRICAL CHARACTERISTICS:

Part No.	Input						Output						Ripple and noise			
	Voltage range	Current @ 110V	Current @ 220V	Power factor	Start-up time	Attenuation rate	DC Volage	Rated current	Rated power	Efficiency (Typ)	Voltage accuracy	load regulation	20M bandwidth/ripple		200M bandwidth/noise	
													Typ	Max	Typ	Max
SAW07S-28S05	85-265Vac 100-375Vdc 50/60Hz	<100mA	<70mA	<0.58	<300ms	1-4KV >30dB	5V	1400mA	7W	82%	± 1%	± 1%	20mV	40mV	40mV	70mV
SAW07S-28S06							6V	1160mA		82%		± 1%	20mV	46mV	40mV	70mV
SAW07S-28S09							9V	780mA		82%		± 1%	20mV	46mV	40mV	70mV
SAW07S-28S12							12V	580mA		84%		± 0.8%	20mV	30mV	45mV	70mV
SAW07S-28S15							15V	460mA		84%		± 0.8%	20mV	30mV	45mV	70mV
SAW07S-28S20							20V	350mA		84%		± 0.8%	40mV	70mV	46mV	85mV
SAW07S-28S24							24V	290mA		84%		± 0.4%	40mV	70mV	46mV	85mV
Notes							1. Unless otherwise specified, all specifications are tested at input voltage 220VAC, full load, and ambient temperature of 25°C 2. The recommended power is 20% to 70% of the rated power of the module (at @25°C)									

## PRODUCT CHARACTERISTICS:

Item	Working condition
Switching frequency	65KHz
Short circuit protection	Long-term short circuit, self-recovery
Overload protection	> Load 150%, recoverable
Overheat protection	The surface temperature of the module is 100 °C (± 4°C), and it is protected from overheating
Hi-Pot	Input-Output 3000VAC / 1min (withstand voltage test is limit damage test, can not be tested multiple times)
Operating temperature	-40~70°C (Refer to temperature & Derating curve for details)
weight	39g (± 2g)
Case Size	28*37*19mm
Case material	High temperature resistant plastic housing
Cooling mode	Natural cooling
Safety level	Class II
Notes	Unless otherwise specified, all specifications are tested at input voltage 220VAC, full load, and ambient temperature of 25°C

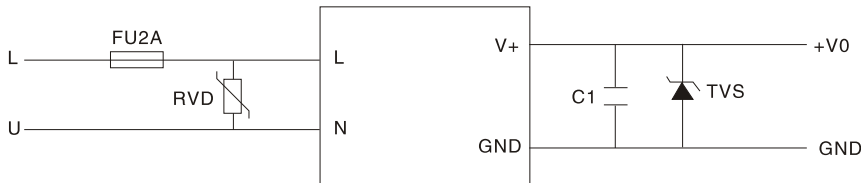
## ELECTRICAL CHARACTERISTICS:



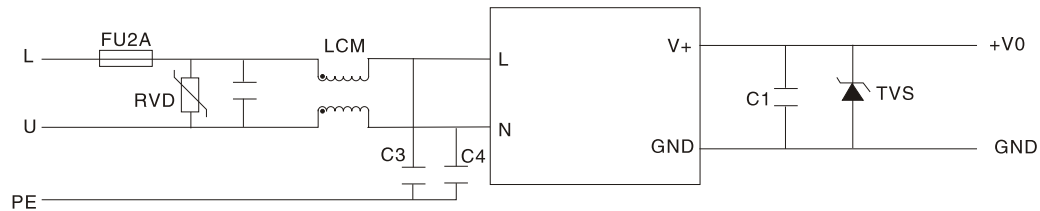
1. When the input voltage ranges from 85V to 100VAC, Converter must be derated
2. Ambient temperature <math>\le -25^{\circ}\text{C}</math>, or ambient temperature >math>\ge 50^{\circ}\text{C}</math>; When the temperature is 50°C, Converter must be derated
3. This product is suitable for use in a natural air-cooled environment. If it is needed in a sealed environment, it is necessary to consider the power usage of the module comprehensively.

## APPLICATION CIRCUIT:

Typical application circuit



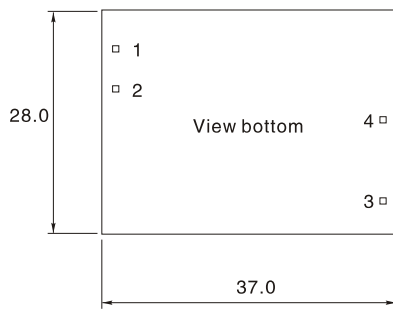
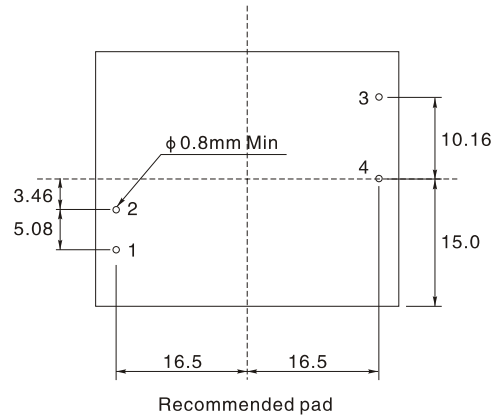
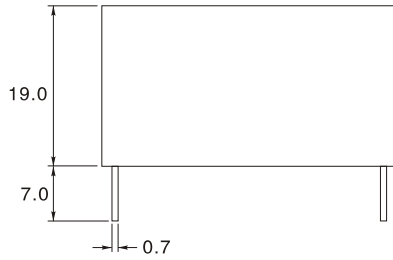
EMC enhanced recommendation circuit



Part No.	FUSE	RVD	C2	LCM	C3,C4	C1	TVS
SAW07S-28S05	1A/250VAC	14D431K	0.33uF 275VAC	UU9.8 60mH	222M 250V	CBB capacitor 104/50V	5V: P6KE6.8A 12V: P6KE15A 24V: P6KE28A
SAW07S-28S06							
SAW07S-28S09							
SAW07S-28S12							
SAW07S-28S15							
SAW07S-28S20							
SAW07S-28S24							

1. SAW07S series module has built-in EMC circuit, can directly pass the certification test. If you need to use in a complex power supply environment, need refer to the technical manual to build a peripheral EMC enhanced circuit, otherwise the product has the risk of damage.
2. FUSE is the input fuse. Select a slow-break fuse that has safety certification. For details, see the recommended value in the technical manual.  
(Note: If the rated current value of the fuse is too large, it can not play a protective role, and if it is too small, it is easy to cause misfuse due to the input capacitor charging when starting.)
3. MOV is a varistor, which protects the surge voltage of the product input. It is recommended to refer to the corresponding technical manual parameters for the selection of varistor specifications.
4. C1 is a CBB capacitor, which removes high-frequency noise, and the recommended value is 104/50V.

**SIZE AND PIN MODE:**



Pin mode	
Pin	
1	AC(V)
2	AC(L)
3	V0+
4	V0-