■ Product characteristics:

- Universal AC/DC input
- High efficiency
- Low ripple noise
- Compact size: 49*36*22.5mm
- Overload protection/Short circuit protection/Overheat protection
- Built in EMC circuit
- Built in EFT attenuator
- Class Ⅱ Isolation level
- Low power consumption,
- No need for peripheral circuit design
- Full load low temperature rise (@25℃)
- Natural cooling of plastic shell
- Three years warranty

■ Product application:

- Industrial electrical equipment
- Mechanical equipment
- Industrial automation equipment
- handheld electronic devices
- Wireless network
- Telecommunications/data Communications
- Instruments and meters
- Intelligent field
- Charging pile

■ Input electrical specification:

Model Number	Vol range / Fre	Input cur@110V	Input cur@220V	PF	Startup time
AP05N15-Zero	85V~265VAC 100V~370VDC 50/60Hz	< 500mA	<180mA	<0.5	<200ms
AP06N15-Zero					
AP09N24-Zero					
AP12N24-Zero					
AP15N24-Zero					
AP20N24-Zero					
AP24N24-Zero					
Remarks	If not specified, all specifications are tested at input voltage of 220 VAC, full load and ambient temperature of 25 C.				

■ Output electrical specifications:

Model Number	Voltage	Current	Rated power	Effic (Typ)	Vol accuracy
AP05N15-Zero	5V	3000mA	15W	80%	±1%
AP06N15-Zero	6V	2600mA		82%	
AP09N24-Zero	9V	2700mA	24W	84%	
AP12N24-Zero	12V	2000mA		87%	
AP15N24-Zero	15V	1600mA		88%	
AP20N24-Zero	20V	1200mA		88%	
AP24N24-Zero	24V	1000mA		89%	
Remarks	If not specified, all specifications are tested at input voltage of 220 VAC, full load and ambient temperature of 25 C.				

■ Ripple and Noise Characteristics:

Model Number	20M Bandwidth / ripple noise (Peak to peak value)		200MBandwidth / ripple noise (Peak to peak value)	
	Typ	Max	Typ	Max
AP05N15-Zero	20mV	40mV	40mV	70mV
AP06N15-Zero	20mV	46mV	40mV	70mV
AP09N24-Zero	20mV	46mV	40mV	70mV
AP12N24-Zero	20mV	30mV	45mV	70mV
AP15N24-Zero	20mV	30mV	45mV	70mV
AP20N24-Zero	40mV	70mV	46mV	85mV
AP24N24-Zero	40mV	70mV	46mV	85mV
Remarks	1. If not specified, all specifications are tested at input voltage of 220 VAC, full load and ambient temperature of 25 C. 2. The oscilloscope for testing: <Tektronix-TDS2022C>。			

■ EMC characteristic:

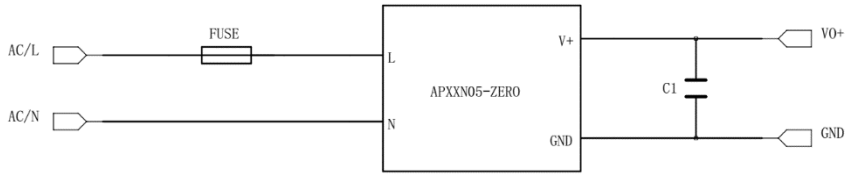
EMC chara	Test items	Testing standard
EMI	Conducted disturbance (CE)	EN 55032: 2015 CLASSB
	Radiation disturbance (RE)	EN 55032: 2015 CLASSB
	fluctuation & flicker	EN 61000-3-3:2013
EMS	Electrostatic discharge	EN 61000-4-2:2009 Contact ±4KV Air ±8KV
	Radiated immunity	EN 61000-4-3:2006 +A1: 2008+A2:2010
	Pulse group immunity	EN 61000-4-4:2012
	Surge immunity	EN 61000-4-5:2014
	CE immunity	EN 61000-4-6: 2014
	Voltage sags	EN 61000-4-11: 2017

■ General characteristics:

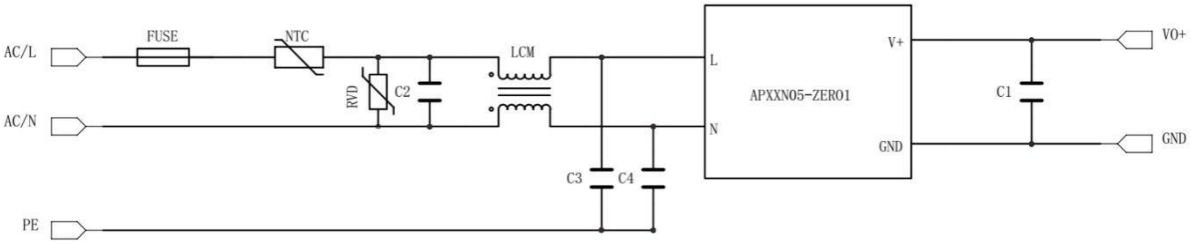
Item	Working Conditions @ Conclusion
Fre	65KHz
Short circuit protection	Long-term short circuit, self-recovery
Overload protection	> Load150%, self-recovery
Overheat protection	Surface temperature > 90℃（±4℃）
withstand voltage test	Input-Output 3000VAC /1min
Working temperature	-40~70℃
Weight	76g(±2g)
Size	49*36*22.5mm
Shell material	High Temperature Resistant Plastic Shell
Cooling mode	Natural cooling
Safety grade	CLASS Ⅱ

■ Design reference circuit:

1. Typical application circuit:

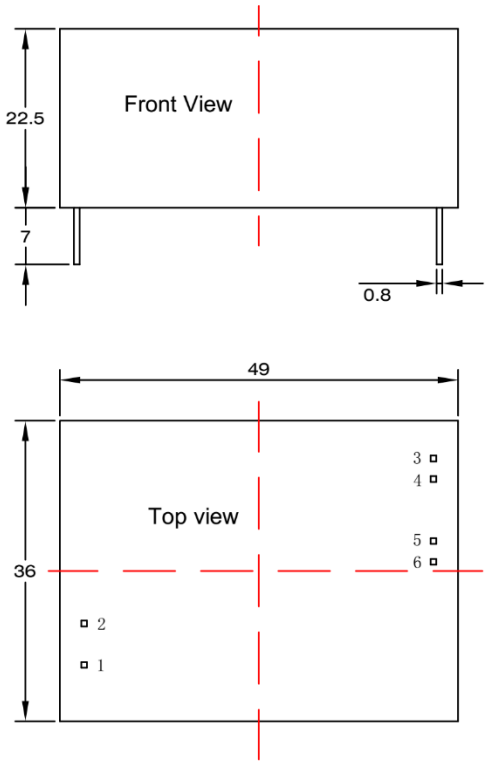


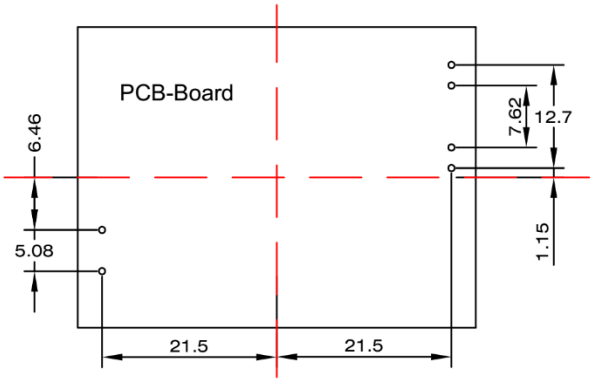
2. EMC enhanced recommendation circuit:



Model Number	FUSE	NTC	C2	RVD	LCM	C3，C4	C1
AP05N10-Zero	2A/250VAC	10D-11	0.2uF 275VAC	14D471K	UU9.8 60mH	222M 250V	CBB 电容 104/50V
AP06N10-Zero							
AP09N12-Zero							
AP12N12-Zero							
AP15N12-Zero							
AP20N12-Zero							
AP24N12-Zero							

■ Pin wiring diagram & appearance dimension





Note:Welding pad hole greater than 0.8mm

Pin Function	
1	AC(N)
2	AC(L)
3、4	Vo+
5、6	Vo-

Unit：mm

Guangzhou Gaoya Information Technology Co., Ltd.

Address: Building A8, Longdong Third Industrial Zone, Tianhe District, Guangzhou City, Guangdong Province

Tel：400-778-0583/+86-020-29019513

E-mail: hiecube@foxmail.com

Thank you for choosing HIECUBE power module. Information can be obtained through the official website：http://www.hiecube.com/application_file.php