

### ■ Product characteristics:

- Universal AC/DC input
- High efficiency
- Low ripple noise
- Compact size: 34\*24\*16.5mm
- Overload protection/Short circuit protection/Overheat protection
- Built in EMC circuit
- Class II Isolation level
- Low power consumption
- No need for peripheral circuit design
- Full load low temperature rise (@25°C)
- 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
AP3.3N03-Zero	85V~265VAC 100V~370VDC 50/60Hz	<80mA	<40mA	<0.58	<300ms
AP05N03-Zero					
AP06N03-Zero					
AP09N03-Zero					
AP12N03-Zero					
AP15N03-Zero					
AP24N03-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
AP3.3N03-Zero	3.3V	900mA	3W	75%	±1%
AP05N03-Zero	5V	600mA		75%	
AP06N03-Zero	6V	500mA		75%	
AP09N03-Zero	9V	330mA		76%	
AP12N03-Zero	12V	250mA		78%	
AP15N03-Zero	15V	200mA		78%	
AP24N03-Zero	24V	125mA		80%	
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)		200M Bandwidth / ripple noise (Peak to peak value)	
	Typ	Max	Typ	Max
AP3.3N03-Zero	20mV	40mV	40mV	70mV
AP05N03-Zero	20mV	46mV	40mV	70mV
AP06N03-Zero	20mV	46mV	40mV	70mV
AP09N03-Zero	20mV	30mV	45mV	70mV
AP12N03-Zero	20mV	30mV	45mV	70mV
AP15N03-Zero	40mV	70mV	46mV	85mV
AP24N03-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:

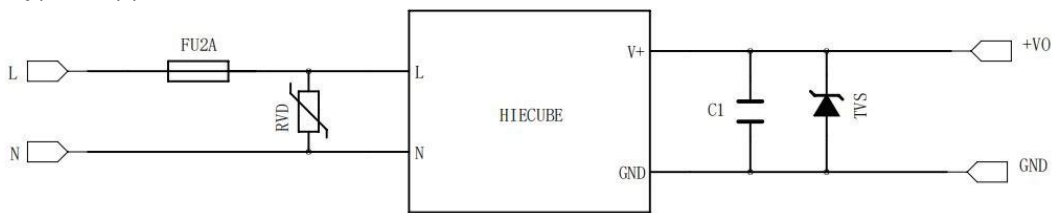
EMC chara	Test items	Testing standard
EMI	Conducted disturbance (CE)	EN 55032: 2015 CLASSB
	Radiation disturbance (RE)	EN 55032: 2015 CLASSB
	fluctuation & flicker	EN 61000-3-3:2013
EMS	Electrostatic discharge	EN 61000-4-2:2009 Contact ±4KV Air ±8KV
	Radiated immunity	EN 61000-4-3:2006 +A1: 2008+A2:2010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

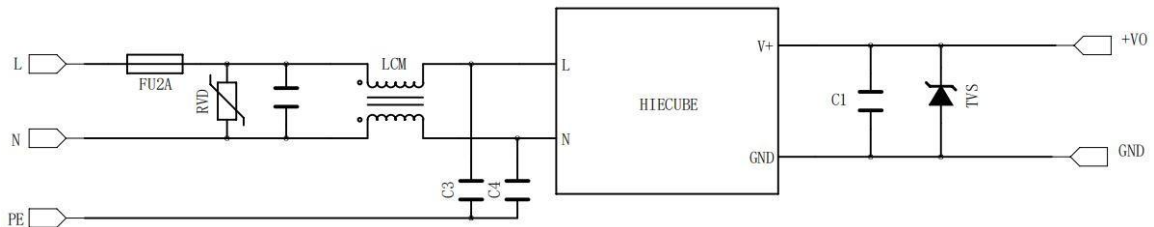
Item	Working Conditions @ Conclusion
Fre	65KHz
Short circuit protection	Long-term short circuit, self-recovery
Overload protection	> Load150%, self-recovery
Overheat protection	Surface temperature > 90°C (±4°C)
withstand voltage test	Input-Output 3000VAC /1min
Working temperature	-40~70°C
Weight	19g (±1g)
Size	34*24*16.5mm
Shell material	High Temperature Resistant Plastic Shell
Cooling mode	Natural cooling
Safety grade	CLASS II

■ Design reference circuit:

1. Typical application circuit:



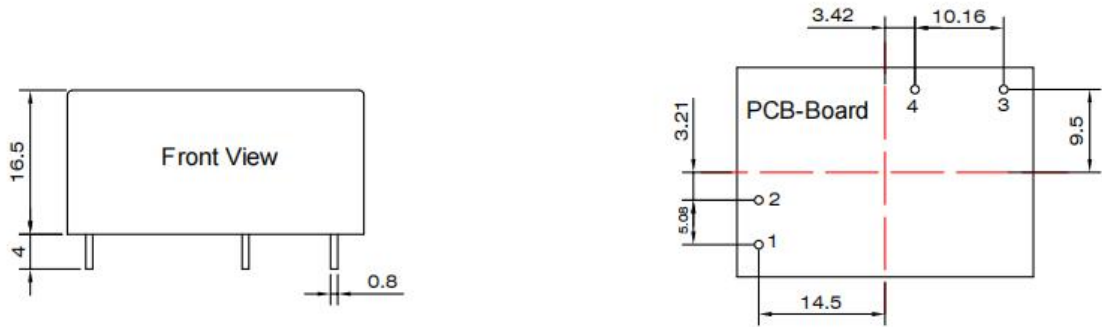
2. EMC enhanced recommendation circuit:



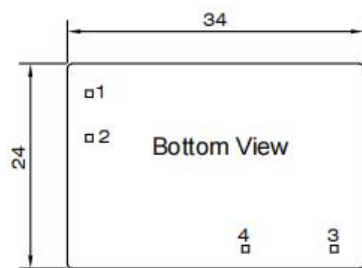
Peripheral component parameters

Model Number	FUSE	RVD	C2	LCM	C3, C4	C1	TVS
AP3.3N03-Zero	1A/250VAC SLOW BLOW	14D431K	0.33uF 275VAC	UU9.8 60mH	222M 250V	CBB CAP 104/50V	5V: P6KE6.8A 12V: P6KE15A 24V: P6KE28A
AP05N03-Zero							
AP06N03-Zero							
AP09N03-Zero							
AP12N03-Zero							
AP15N03-Zero							
AP24N03-Zero							

■ Pin wiring diagram & appearance dimension



Note:Welding pad hole greater than 0.8mm



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

Unit: mm

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Thank you for choosing HIECUBE power module. Information can be obtained through the official website: [http://www.hiecube.com/application\\_file.php](http://www.hiecube.com/application_file.php)