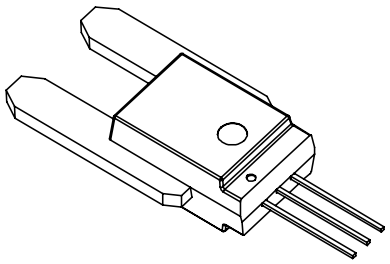
AN1V PB21

Current Sensor

Model Number:

AN1V 50 PB21
AN1V 100 PB21
AN1V 150 PB21
AN1V 200 PB21



For the electronic measurement of current:DC,AC,pulsed...,with galvanic separation between the primary and the secondary circuit.

Features

- Open loop current sensor using the Hall effect.
- ASIC Technology.
- Maintain output proportional to changes in the power supply（include offset and sensitivity）.
- Galvanic separation between primary and secondary.
- Insulating plastic case recognized according to UL 94-V0.
- No insertion losses.
- Small size.
- Standards:
  - IEC 60664-1:2020
  - IEC 61800-5-1:2022
  - IEC 62109-1:2010

Applications

- AC variable speed.
- Uninterruptible Power Supply (UPS).
- Static converters for DC motor drives.
- Switch Mode Power Supplies (SMPS).
- Power supply for welding applications.
- Battery Management.
- Wind energy inverter.

Safety

The sensor must be used according to IEC 61800-5-1.
The sensor must be used in electric/electronic equipment with respect to applicable standards and safety requirements in accordance with the following manufacture's operating instructions.

Caution,risk of electrical shock !

When operating the sensor, certain parts of the module can carry hazardous voltage (e.g., Primary busbar,power supply).
Ignore this warning can lead to injury and/or cause serious damage.
This sensor is a built-in device, whose conducting parts must be inaccessible after installation. A protective housing or additional shield could be used.
Main supply must be able to be disconnected.

Absolute maximum ratings(not operating)

Parameter	Symbol	Unit	Value
Supply voltage	²	²	": '
ESD rating, Human Body Model (HBM)	²8z2	²	' ı ı ı

※ Stresses above these ratings may cause permanent damage.

※ Exposure to absolute maximum ratings for extended periods may degrade reliability.

Environmental and mechanical characteristics

Parameter	Symbol	Unit	Min	Typ	Max	Comment
Ambient operating temperature	¢	℃	ı y ı ı y ı ı y ı ı y ı		ɻ ' ı ɻ ' ı ɻʁ ' ' '	AN1V 50 PB21 AN1V 100 PB21 AN1V 150 PB21 AN1V 200 PB21
Ambient storge temperature	¢z	℃	ı ' '		ɻ ' ı	
Primary resistance value	vs	, Ω		ɻ ı ı		
Mass	ÿ	ç		'		

Insulation coordination

Parameter	Symbol	Unit	Value	Comment
Rms voltage for AC insulation test, @50Hz,1min	²0	÷²	y : '	Accordingto Ⅷ8 - " ı "" y ı ɻ
Plastic case	ı	ı	¦Z ' y ı 2 ı	
Comparative traking index	- ¢///	sZ -	ʁ	
Application example	ı	ı	y ‘ ' ²v_z	Reinforced insulation,according to Ⅷ8 - "ɻ ' ı ı ' ı ɻ ` Ⅷ8 - "ʁɻı ' ı ɻ - ¢Ⅲ, PD2
Application example	ı	ı	' " ı ²v_z	Basic insulation,according to Ⅷ8 - "ɻ ' ı ı ' ı ɻ ` Ⅷ8 - "ʁɻı ' ı ɻ - ¢Ⅲ, PD2

Electrical data

AN1V 50 PB21

※ With T_A = 25℃, V_C = 5V, R_L = 10kΩ,unless otherwise noted.

Parameter	Symbol	Unit	Min	Typ	Max	Comment
Electrical data						
Primary nominal rms current						
Supply voltage						
Output voltage						
Electrical offset voltage						
Theoretical sensitivity						
Current consumption						
Load resistance						
Load capacitor						
Power filter capacitor						
Performance data						
Sensitivity error						
Temperature of G						
Electrical offset current						
Electrical offset error of temperature drift						
Hysteresis offset voltage						
Linearity error						Exclusive of
Accuracy						
Response time						
Frequency bandwidth(-3dB)						
Output noise						

Electrical data

AN1V 100 PB21

※ With T_A = 25℃, V_C = 5V, R_L = 10kΩ,unless otherwise noted.

Parameter	Symbol	Unit	Min	Typ	Max	Comment
Electrical data						
Primary nominal rms current						
Supply voltage						
Output voltage						
Electrical offset voltage						
Theoretical sensitivity						
Current consumption						
Load resistance						
Load capacitor						
Power filter capacitor						
Performance data						
Sensitivity error						
Temperature of G						
Electrical offset current						
Electrical offset error of temperature drift						
Hysteresis offset voltage						
Linearity error						Exclusive of
Accuracy						
Response time						
Frequency bandwidth						
Output noise						

Electrical data

AN1V 150 PB21

※ With T_A = 25℃, V_C = 5V, R_L = 10kΩ,unless otherwise noted.

Parameter	Symbol	Unit	Min	Typ	Max	Comment
Electrical data						
Primary nominal rms current						
Supply voltage						
Output voltage						
Electrical offset voltage						
Theoretical sensitivity						
Current consumption						
Load resistance						
Load capacitor						
Power filter capacitor						
Performance data						
Sensitivity error						
Temperature of G						
Electrical offset current						
Electrical offset error of temperature drift						
Hysteresis offset voltage						
Linearity error						Exclusive of
Accuracy						
Response time						
Frequency bandwidth(-3dB)						
Output noise						

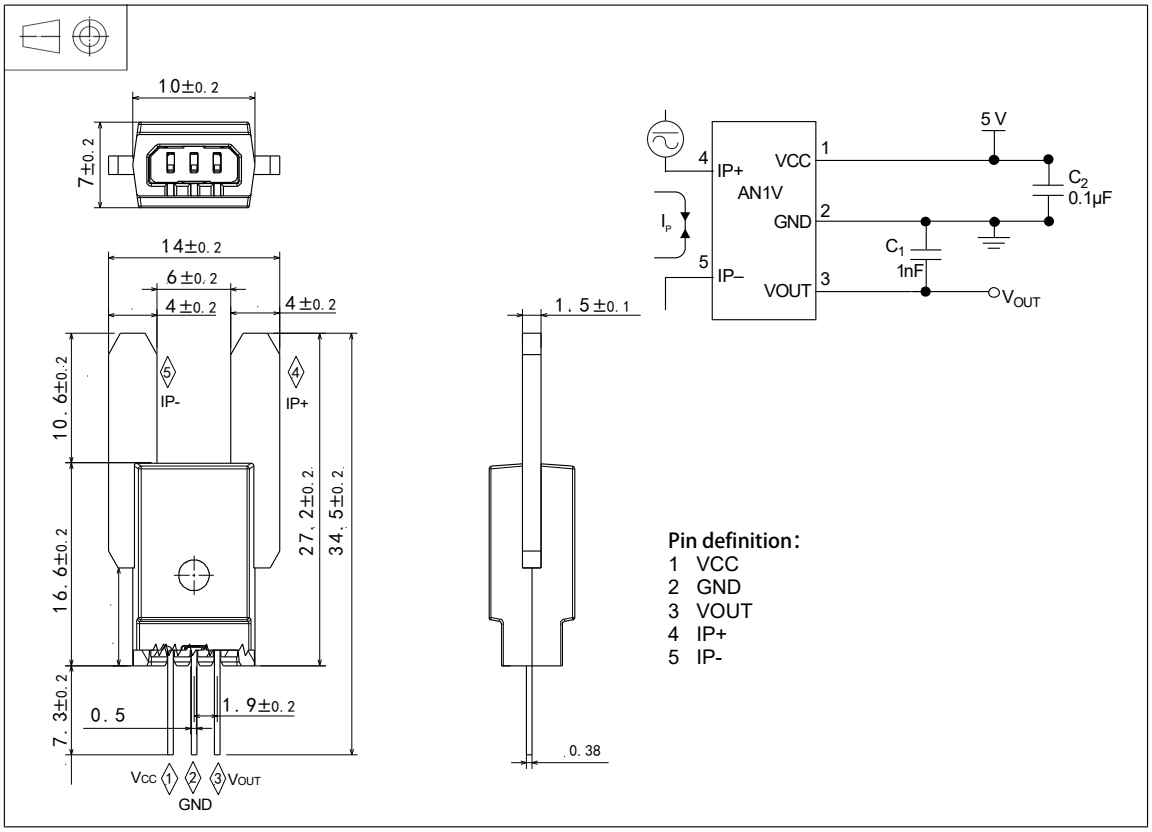
Electrical data

AN1V 200 PB21

※ With T_A = 25℃, V_C = 5V, R_L = 10kΩ,unless otherwise noted.

Parameter	Symbol	Unit	Min	Typ	Max	Comment
Electrical data						
Primary nominal rms current						
Supply voltage						
Output voltage						
Electrical offset voltage						
Theoretical sensitivity						
Current consumption						
Load resistance						
Load capacitor						
Power filter capacitor						
Performance data						
Sensitivity error						
Temperature of G						
Electrical offset current						
Electrical offset error of temperature drift						
Hysteresis offset voltage						
Linearity error						Exclusive of
Accuracy						
Response time@ 90% of						
Frequency bandwidth(-3dB)						
Output noise						

Dimensions(Unit mm)



Mechanical characteristics

✧ General tolerance	±0.3 mm
✧ Conductor and pin material	Red copper with tin plating

Remarks

✧ When I_P flows in the direction of pin4 to pin5，V_{out} increase.