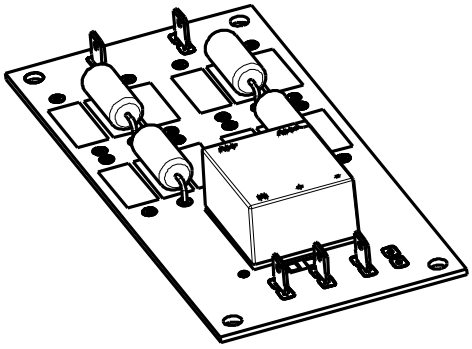
VN2A PB00

Current Sensor

Model Number:

VN2A 800 PB00
VN2A 1100 PB00



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

Features

- Closed loop (compensated) voltage sensor using the Hall Effect
- Insulating plastic case recognized according to UL94-V0
- Small size
- High accuracy
- Very good linearity
- Very low offset drift over temperature
- Standards:
  - EN50178: 1997
  - IEC 61010-1: 2000
  - UL 508: 2010

Applications

- AC variable speed
- Uninterruptible Power Supplies (UPS)
- Static converters for DC motor drives
- Switch Mode Power Supplies (SMPS)
- Power supplies for welding applications

Safety

This sensor must be used according to IEC 61010-1.
This sensor must be used in electric/electronic equipment with respect to applicable standards and safety requirements in accordance with the 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). Ignoring 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	V_C	V	±18

※ 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	T_A	℃	-40		85	
Ambient storge temperature	T_S	℃	-45		100	
Mass	m	g		60		
Standards	EN 50178, UL 508					

Insulation coordination

Parameter	Symbol	Unit	Value	Comment
Rms voltage for AC insulation test @ 50Hz,1min	V_d	kV	4.1	
Plastic case	-	-	UL94-V0	
Comparative traking index	*CTI*	PLC	3	
Application example	-	-	600V CAT Ⅲ PD2	Reinforced insulation,according to EN 50178，IEC 61010-1
Application example	-	-	1500V CAT Ⅲ PD2	Basic insulation,according to EN 50178，IEC 61010-1

Electrical data

VN2A 800 PB00

※ With T_A = 25℃, V_C = ±15V, R_L = 100Ω,unless otherwise noted.

Parameter	Symbol	Unit	Min	Typ	Max	Comment
Primary nominal rms current	I_{PN}	V		±800		
Maximum measuring current	I_{PM}	V	-1400		1400	
Measuring resistance	R_M	Ω	30 30 100 100		210 100 340 180	@±12V, ±800V @±12V, ±1400V @±15V, ±800V @±15V, ±1400V
Output nominal rms current	I_{SN}	mA		25		
Supply voltage	V_C	V	±12	±15		@ ±5%
Primary coil resistance	R_P	kΩ		80		@ 25℃
Secondary coil resistance	R_S	Ω			117	@ 85℃
Conversion ratio	K_N	-		800V:25mA		
Coil turn ratio	N_P/ N_S	-		2500:1000		
Current consumption	I_C	mA		10 + I_S		
Electrial offset current	I_O	mA	-0.15		0.15	
Thermal drift of offset current	I_{OT}	mA	-0.5 -0.8	±0.1 ±0.1	0.5 0.8	@ -25℃~85℃ @ -40℃~85℃
Sensitivity error	ε_G	%	-0.4		0.4	
Linearity error	ε_L	% of I_{PN}	-0.2		0.2	
Accuracy@ I_{PN}	X	% of I_{PN}	-0.6		0.6	
Response time@ 90% of I_{PN}	t_r	μs		25		

Electrical data

VN2A 1100 PB00

※ With T_A = 25℃, V_C = ±15V, R_L = 100Ω,unless otherwise noted.

Parameter	Symbol	Unit	Min	Typ	Max	Comment
Primary nominal rms current	I_{PN}	V		±1100		
Maximum measuring current	I_{PM}	V	-1500		1500	
Measuring resistance	R_M	Ω	30 30 100 100		210 100 340 180	@±12V, ±1100V @±12V, ±1500V @±15V, ±1100V @±15V, ±1500V
Output nominal rms current	I_{SN}	mA		25		
Supply voltage	V_C	V	±12	±15		@ ±5%
Primary coil resistance	R_P	kΩ		110		@ 25℃
Secondary coil resistance	R_S	Ω			117	@ 85℃
Conversion ratio	K_N	-		1100V:25mA		
Coil turn ratio	N_P/ N_S	-		2500:1000		
Current consumption	I_C	mA		10 + I_S		
Electrial offset current	I_O	mA	-0.15		0.15	
Thermal drift of offset current	I_{OT}	mA	-0.5 -0.8	±0.1 ±0.1	0.5 0.8	@ -25℃~85℃ @ -40℃~85℃
Sensitivity error	ε_G	%	-0.4		0.4	
Linearity error	ε_L	% of I_{PN}	-0.2		0.2	
Accuracy@ I_{PN}	X	% of I_{PN}	-0.6		0.6	
Response time@ 90% of I_{PN}	t_r	μs		25		

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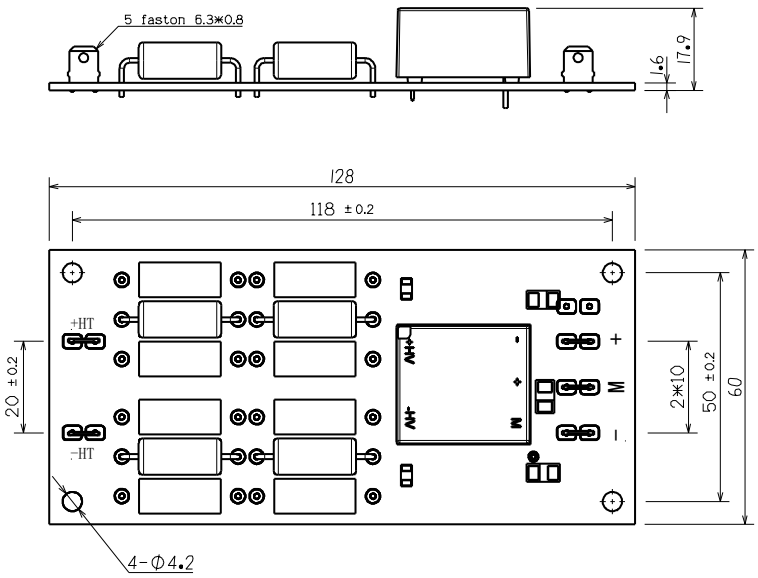
Dimensions(Unit mm)



Mechanical characteristic

✧ General tolerance	±0.3 mm
✧ Sensor	4pc Φ4.2 mm through hole
✧ Primary connection	2pc Faston 6.3×0.8mm
✧ Connection of secondary	3pc Faston 6.3×0.8mm

Remarks

- ✧ I_S is positive when V_P is connected to +HV.
- ✧ The primary side and the voltage under test must be securely connected.

This is a standard model. For different applications(measurement, secondary connections…), please contact CHIPSENSE.