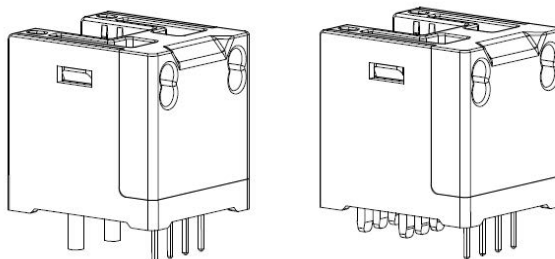


# AN5V PB00 SERIES

## Current Sensor

### Model Number:

AN5V 1 PB00  
 AN5V 2 PB00  
 AN5V 4 PB00  
 AN5V 5 PB00  
 AN5V 10 PB00  
 AN5V 15 PB00  
 AN5V 20 PB00  
 AN5V 25 PB00  
 AN5V 30 PB00  
 AN5V 50 PB00  
 AN5V 80 PB00



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.
- ✧ Galvanic separation between primary and secondary.
- ✧ Insulating plastic case recognized according to UL 94-V0.
- ✧ No insertion loss.
- ✧ Small size.
- ✧ Standards:
  - EN50178: 1997
  - IEC 61010-1: 2000
  - UL 508: 2010

### Applications

- ✧ AC variable speed.
- ✧ Static converters for DC motor drives.
- ✧ Uninterruptible Power Supply (UPS).
- ✧ Photovoltaic inverter
- ✧ Module power supply.
- ✧ Switch Mode Power Supplies (SMPS).
- ✧ Battery Management.

## Safety

The sensor must be used according to IEC 61010-1.

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.

# AN5V PB00 SERIES

## Absolute maximum ratings

Parameter	Symbol	Unit	Value
Supply voltage	$V_C$	V	$\pm 16$
Primary conductor temperature	$T_B$	$^{\circ}\text{C}$	100

- ✘ 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	$T_A$	$^{\circ}\text{C}$	-40		85	
Ambient storage temperature	$T_S$	$^{\circ}\text{C}$	-40		90	
Mass	$m$	g		8		
Standards	EN 50178, IEC 61010-1, UL 508C					

## Insulation coordination

Parameter	Symbol	Unit	Value	Comment
Rms voltage for AC insulation test, 50 Hz, 1 min	$V_d$	kV	3.0	
Impulse withstand voltage 1.2/50 $\mu\text{s}$	$V_w$	kV	6.0	
Clearance (pri.- sec.)	$d_{CI}$	mm	5.5	
Creepage distance (pri.- sec.)	$d_{CP}$	mm	5.5	
Plastic case	-	-	UL94-V0	
Application example	-	-	300V CAT III PD2	Reinforced insulation, according to EN 50178, EN 61010-1
Application example	-	-	600V CAT III PD2	Basic insulation, according to EN 50178, EN 61010-1

# AN5V PB00 SERIES

## Electrical data

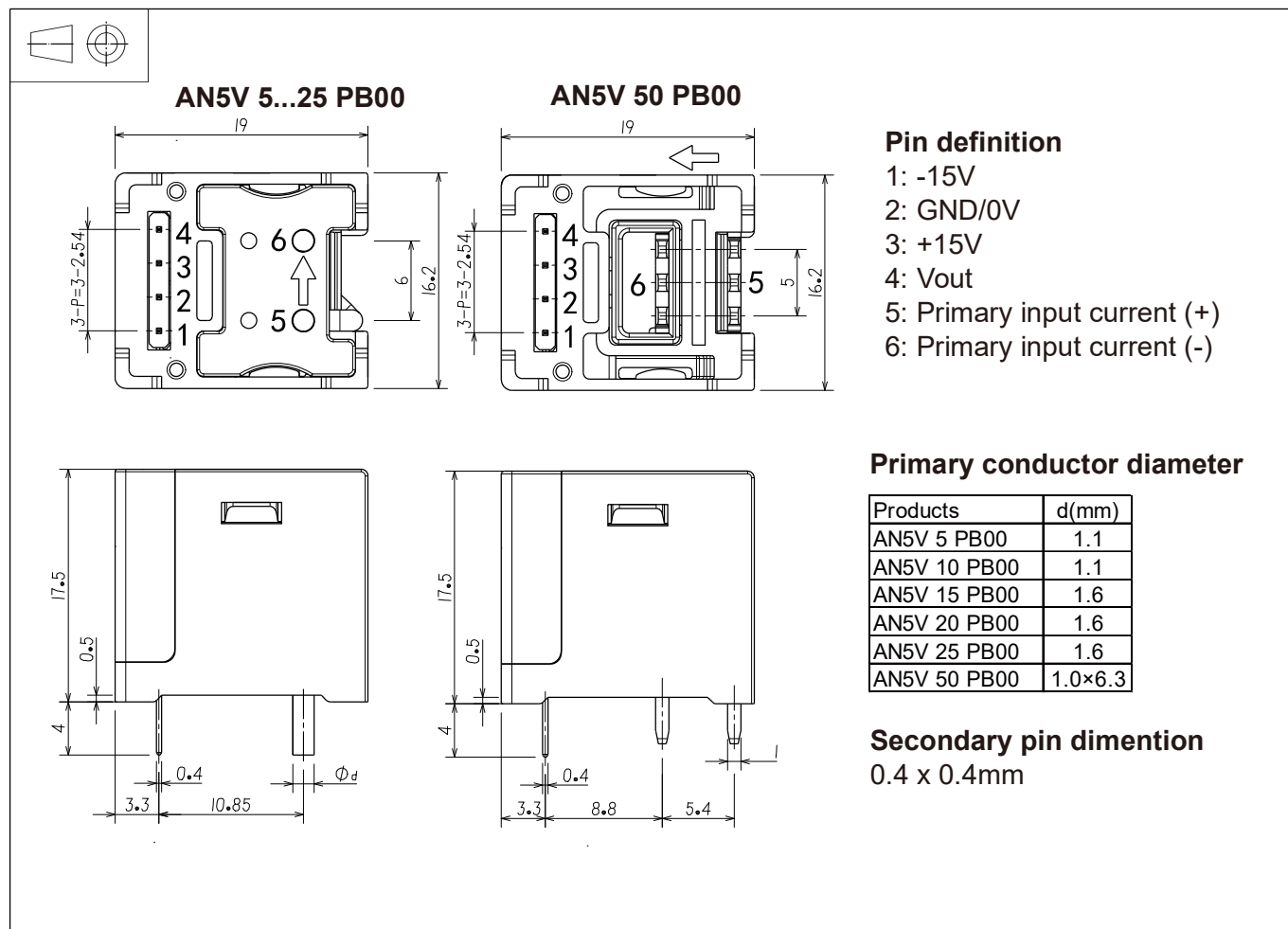
※ With  $T_A = 25^\circ\text{C}$ ,  $V_C = \pm 15\text{V}$ ,  $R_L = 10\text{k}\Omega$ , unless otherwise noted.

Parameter	Symbol	Unit	Min	Typ	Max	Comment
Primary nominal current rms	$I_{PN}$	A	-1		1	AN5V 1 PB00
			-2		2	AN5V 2 PB00
			-4		4	AN5V 4 PB00
			-5		5	AN5V 5 PB00
			-10		10	AN5V 10 PB00
			-15		15	AN5V 15 PB00
			-20		20	AN5V 20 PB00
			-25		25	AN5V 25 PB00
			-30		30	AN5V 30 PB00
			-50		50	AN5V 50 PB00
			-80		80	AN5V 80 PB00
Primary current, measuring range *1	$I_{PM}$	A	-3		3	AN5V 1 PB00
			-6		6	AN5V 2 PB00
			-12		12	AN5V 4 PB00
			-15		15	AN5V 5 PB00
			-30		30	AN5V 10 PB00
			-45		45	AN5V 15 PB00
			-60		60	AN5V 20 PB00
			-75		75	AN5V 25 PB00
			-90		90	AN5V 30 PB00
			-150		150	AN5V 50 80 PB00
			Supply voltage *1	$V_C$	V	$\pm 12$
Current consumption	$I_C$	mA			30	
Load resistance	$R_L$	k $\Omega$	10			
Output resistance	$R_{OUT}$	$\Omega$		100		
Output voltage range @ $I_{PN}$	$V_{OUT}$	V	$\pm 3.960$	$\pm 4.000$	$\pm 4.040$	
Electrical offset voltage	$V_{OE}$	mV	-40		40	
Temperature coefficient of $V_{OE}$ *2	$TCV_{OE}$	mV/K	-1		1	@ $-40^\circ\text{C} \sim 85^\circ\text{C}$
Sensitivity error	$\varepsilon_G$	%	-1		1	Exclusive of $V_{OE}$
Temperature coefficient of G	$TCG$	%/K	-0..1		0.1	@ $-40^\circ\text{C} \sim 85^\circ\text{C}$
Linearity error 0... $I_{PN}$	$\varepsilon_L$	% of $I_{PN}$	-1		1	Exclusive of $V_{OE}$
Magnetic offset voltage @ $I_P=0$ after $1 \times I_{PN}$	$V_{OM}$	mV	-15		15	
Accuracy @ $I_{PN}$	$X$	% of $I_{PN}$	-1		1	Exclusive of $V_{OE}$
Response time @ 90% of $I_{PN}$	$t_r$	$\mu\text{s}$			5	
Frequency bandwidth (-3dB)	$BW$	kHz	50			

\*1: If  $I_{PN} \leq 300\text{A}$  and  $V_C = \pm 12\text{V}$ , the measuring range reduced to 2.5 times of  $I_{PN}$ .

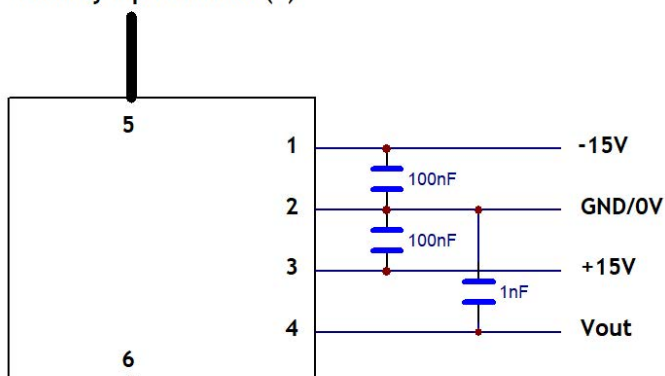
# AN5V PB00 SERIES

## Dimensions (in mm)



## Typical Application Circuit

Primary input current (+)



Primary input current (-)

## Mechanical characteristics

◇ General tolerance  $\pm 0.5$  mm

## Remarks

◇  $V_{OUT}$  and  $I_P$  are in the same direction, when  $I_P$  flows in the direction of arrow.

This is a series of standard models, for different versions (supply voltages, connectors...), please contact CHIPSENSE.