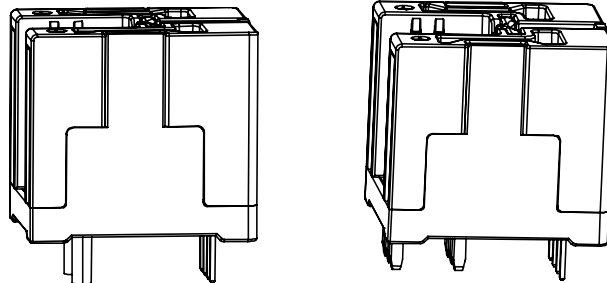


# AN5V PB00 SERIES

## Current sensor

### Model Number:

AN5V 10 PB00  
 AN5V 15 PB00  
 AN5V 20 PB00  
 AN5V 25 PB00  
 AN5V 50 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:
  - IEC 60664-1:2020
  - IEC 61800-5-1:2022
  - IEC 62109-1:2010

### 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 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	$V_C$	V	± 15.75
Primary conductor temperature	$T_B$	°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	$T_A$	°C	-40		85	
Ambient storage temperature	$T_S$	°C	-40		90	
Mass	$m$	g		8		

## Insulation coordination

Parameter	Symbol	Unit	Value	Comment
Rms voltage for AC insulation test, @50 Hz, 1 min	$V_d$	kV	3.0	According to IEC 60664-1
Impulse withstand voltage 1.2/50µs	$V_W$	kV	6.0	
Clearance (pri.- sec.)	$d_{cl}$	mm	5.5	
Creepage distance (pri.- sec.)	$d_{cp}$	mm	5.5	
Plastic case	-	-	UL94-V0	
Application example	-	-	300V	Reinforced insulation, according to IEC 61800-5-1, IEC 62109-1CAT III, PD2
Application example	-	-	600V	Basic insulation, according to IEC 61800-5-1, IEC 62109-1CAT III, PD2

# AN5V PB00 SERIES

## Electrical data

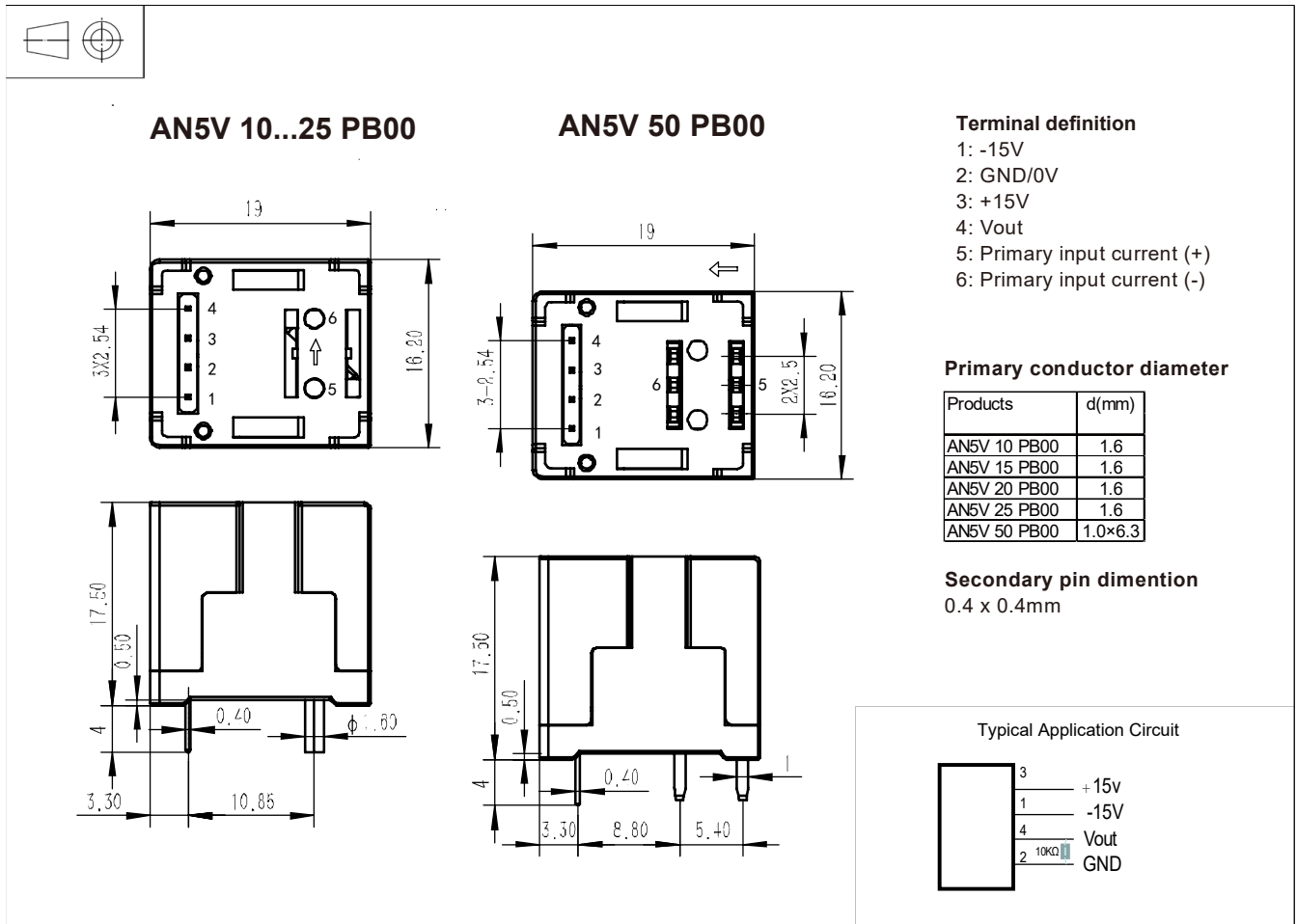
※ With  $T_A = 25^\circ\text{C}$ ,  $V_C = \pm 15\text{V}$ ,  $R_L = 10\text{k}\Omega$ , unless otherwise noted.

Parameter	Symbol	Unit	Min	Typ	Max	Comment
Primary nominal current rms	$I_{PN}$	A	-10		10	AN5V 10 PB00
			-15		15	AN5V 15 PB00
			-20		20	AN5V 20 PB00
			-25		25	AN5V 25 PB00
			-50		50	AN5V 50 PB00
Primary current, measuring range*1	$I_{PM}$	A	-30		30	AN5V 10 PB00
			-45		45	AN5V 15 PB00
			-60		60	AN5V 20 PB00
			-75		75	AN5V 25 PB00
			-150		150	AN5V 50 PB00
Supply voltage *1	$V_C$	V	$\pm 12$		$\pm 15$	@ 5%
Current consumption	$I_C$	mA		15	20	
Load resistance	$R_L$	k $\Omega$	10			
Output resisatance	$R_{OUT}$	$\Omega$		100		
Output voltage (analog)@ $I_{PN}$	$V_{OUT}$	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	@ $-40^\circ\text{C} \sim 85^\circ\text{C}$
Theoretical sensitivity	$G_{th}$	mV/A		400.00		AN5V 10 PB00
				266.67		AN5V 15 PB00
				200.00		AN5V 20 PB00
				160.00		AN5V 25 PB00
				80.00		AN5V 50 PB00
Sensitivity error	$\varepsilon_G$	%	-1		1	Exclusive of $V_{OE}$
Temperature coefficient of G	$TCG$	%/K	-0.05		0.05	@ $-40^\circ\text{C} \sim 85^\circ\text{C}$
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 $I_{PN}$	$t_r$	$\mu\text{s}$			3	
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. 1 mm = 0.0394 inch)



## 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.
- ◇ Temperature of the primary conductor should not exceed  $100^{\circ}\text{C}$

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