

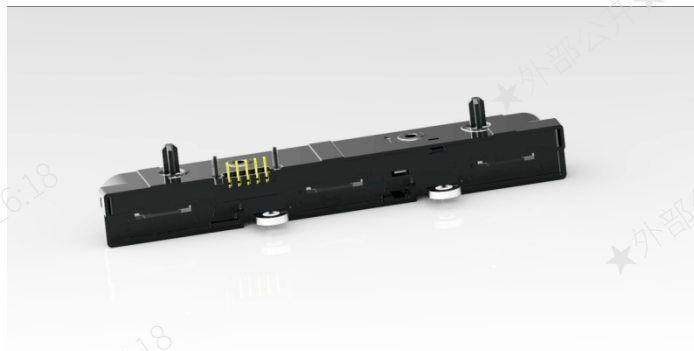


Description

For the electronic measurement of currents: DC, AC, pulsed, mixed, with a galvanic isolation between the primary circuit and the secondary circuit.

Features

- ◆ Open loop transducer using the Hall effect
- ◆ Low voltage application
- ◆ Unipolar +5VDC power supply
- ◆ Primary current measuring range up to $\pm 200 \sim \pm 1200\text{A}$
- ◆ Operating temperature range: $-40^{\circ}\text{C} < T_A < +125^{\circ}\text{C}$
- ◆ Output voltage: fully ratio-metric (gain and offset)



Advantages

- ◆ High accuracy
- ◆ Excellent linearity
- ◆ Low temperature drift
- ◆ No insertion losses
- ◆ Wide frequency bandwidth
- ◆ Very fast response time

$$I_{PN} = \pm 200 \sim \pm 1200\text{A}$$

Automotive Applications

- ◆ Starter Generators
- ◆ Inverters
- ◆ HEV applications
- ◆ EV application
- ◆ DC/DC converter.

TYPES OF PRODUCTS

Type	Primary nominal current I_{PN} (A)	Primary current measuring range I_{PM} (A)
BCX9-200~900IOV1WT	$\pm 200 \sim \pm 900$	$\pm 200 \sim \pm 900$
BCX9-1000IOV1WT	± 1000	± 1000
BCX9-1100IOV1WT	± 1100	± 1100
BCX9-1200IOV1WT	± 1200	± 1200



BCX9-900IOV1WT Parameters Table

PARAMETERS	SYMBOL	UNIT	VALUE			CONDITIONS
			Min.	Typ.	Max.	
Electrical data						
Supply voltage	V _{CC}	V	4.75	5	5.25	
Current consumption	I _{CC}	mA	-	36	48	@TA = 25°C
Output Load Resistance	R _L	kΩ	4.7	-	-	@V _{OUT} to GND
Output Load Capacitance	C _L	nF	-	1	-	@V _{OUT} to GND
Performance data						
Output voltage	V _{OUT}	V	V _{OUT} =(V _{CC} /5)×(V _{OUTQ} +G×I _P)			@TA = 25°C
Output Linearity	ε _L	%	-1	-	1	@TA = 25°C
Accuracy @25°C	X	%	-1	-	1	@TA = 25°C
Accuracy @-40~125°C	X _T	%	-3.5	-	3.5	@-40~125°C
Quiescent Output Voltage ⁽¹⁾	V _{OUTQ}	V	2.5			@TA = 25°C @V _{CC} =5V
Electrical offset Voltage	V _{OE}	mV	-10	-	10	@TA = 25°C @V _{CC} =5V
Magnetic offset Voltage	V _{OM}	mV	-3	-	3	@TA = 25°C @V _{CC} =5V
Sensitivity (G)	G	mV/A	-	2.22	-	@TA = 25°C
Sensitivity error %	ε _G	%	-0.6	-	0.6	
Average temperature coefficient of V _{OE}	TCV _{OE AV}	mV/°C	-0.05		0.05	
Average temperature coefficient of G	TCG _{AV}	%/°C	-0.03		0.03	
Output Bandwidth	BW	kHz	40	-	-	@Small signal -3dB
Response time	t _r	μS	-	-	8	
Rms voltage isolation test	V _d	kV	-	-	3	@AC 50Hz 1Min
General data						
Ambient operating temperature	T _A	°C	-40~+125			
Ambient storage temperature	T _S	°C	-40~+125			

Notes:(1) The indicated offset voltage is the one after the core hysteresis is removed



BCX9-1000IOV1WT

Parameters Table

PARAMETERS	SYMBOL	UNIT	VALUE			CONDITIONS
			Min.	Typ.	Max.	
Electrical data						
Supply voltage	V _{CC}	V	4.75	5	5.25	
Current consumption	I _{CC}	mA	-	36	48	@TA = 25°C
Output Load Resistance	R _L	kΩ	4.7	-	-	@V _{OUT} to GND
Output Load Capacitance	C _L	nF	-	1	-	@V _{OUT} to GND
Performance data						
Output voltage	V _{OUT}	V	V _{OUT} =(V _{CC} /5)×(V _{OUTQ} +G×I _P)			@TA = 25°C
Output Linearity (≤900A)	ε _L	%	-1	-	1	@TA = 25°C
Output Linearity (>900A)	ε _L	%	-2	-	2	@TA = 25°C
Accuracy @25°C (≤900A)	X	%	-1	-	1	@TA = 25°C
Accuracy @25°C (>900A)	X	%	-2	-	2	@TA = 25°C
Accuracy @-40~125°C	X _T	%	-3.5	-	3.5	@-40~125°C
Quiescent Output Voltage ⁽¹⁾	V _{OUTQ}	V	2.5			@TA = 25°C @V _{CC} =5V
Electrical offset Voltage	V _{OE}	mV	-20	-	20	@TA = 25°C @V _{CC} =5V
Magnetic offset Voltage	V _{OM}	mV	-3	-	3	@TA = 25°C @V _{CC} =5V
Sensitivity (G)	G	mV/A	-	2	-	@TA = 25°C
Sensitivity error %	ε _G	%	-0.6	-	0.6	
Average temperature coefficient of V _{OE}	TCV _{OE AV}	mV/°C	-0.05		0.05	
Average temperature coefficient of G	TCG _{AV}	%/°C	-0.03		0.03	
Output Bandwidth	BW	kHz	40	-	-	@Small signal -3dB
Response time	t _r	μS	-	-	8	
Rms voltage isolation test	V _d	kV	-	-	3	@AC 50Hz 1Min
General data						
Ambient operating temperature	T _A	°C	-40~+125			
Ambient storage temperature	T _S	°C	-40~+125			

Notes: (1) The indicated offset voltage is the one after the core hysteresis is removed

**BCX9-1100IOV1WT Parameters Table**

PARAMETERS	SYMBOL	UNIT	VALUE			CONDITIONS
			Min.	Typ.	Max.	
Electrical data						
Supply voltage	V _{CC}	V	4.75	5	5.25	
Current consumption	I _{CC}	mA	-	36	48	@TA = 25°C
Output Load Resistance	R _L	kΩ	4.7	-	-	@V _{OUT} to GND
Output Load Capacitance	C _L	nF	-	1	-	@V _{OUT} to GND
Performance data						
Output voltage	V _{OUT}	V	V _{OUT} =(V _{CC} /5)×(V _{OUTQ} +G×I _P)			@TA = 25°C
Output Linearity (≤900A)	ε _L	%	-1	-	1	@TA = 25°C
Output Linearity (>900A)	ε _L	%	-2	-	2	@TA = 25°C
Accuracy @25°C (≤900A)	X	%	-1	-	1	@TA = 25°C
Accuracy @25°C (>900A)	X	%	-2	-	2	@TA = 25°C
Accuracy @-40~125°C	X _T	%	-3.5	-	3.5	@-40~125°C
Quiescent Output Voltage ⁽¹⁾	V _{OUTQ}	V	2.5			@TA = 25°C @V _{CC} =5V
Electrical offset Voltage	V _{OE}	mV	-20	-	20	@TA = 25°C @V _{CC} =5V
Magnetic offset Voltage	V _{OM}	mV	-3	-	3	@TA = 25°C @V _{CC} =5V
Sensitivity (G)	G	mV/A	-	1.818	-	@TA = 25°C
Sensitivity error %	ε _G	%	-0.6	-	0.6	
Average temperature coefficient of V _{OE}	TCV _{OE AV}	mV/°C	-0.05		0.05	
Average temperature coefficient of G	TCG _{AV}	%/°C	-0.03		0.03	
Output Bandwidth	BW	kHz	40	-	-	@Small signal -3dB
Response time	t _r	μS	-	-	8	
Rms voltage isolation test	V _d	kV	-	-	3	@AC 50Hz 1Min
General data						
Ambient operating temperature	T _A	°C	-40~+125			
Ambient storage temperature	T _S	°C	-40~+125			

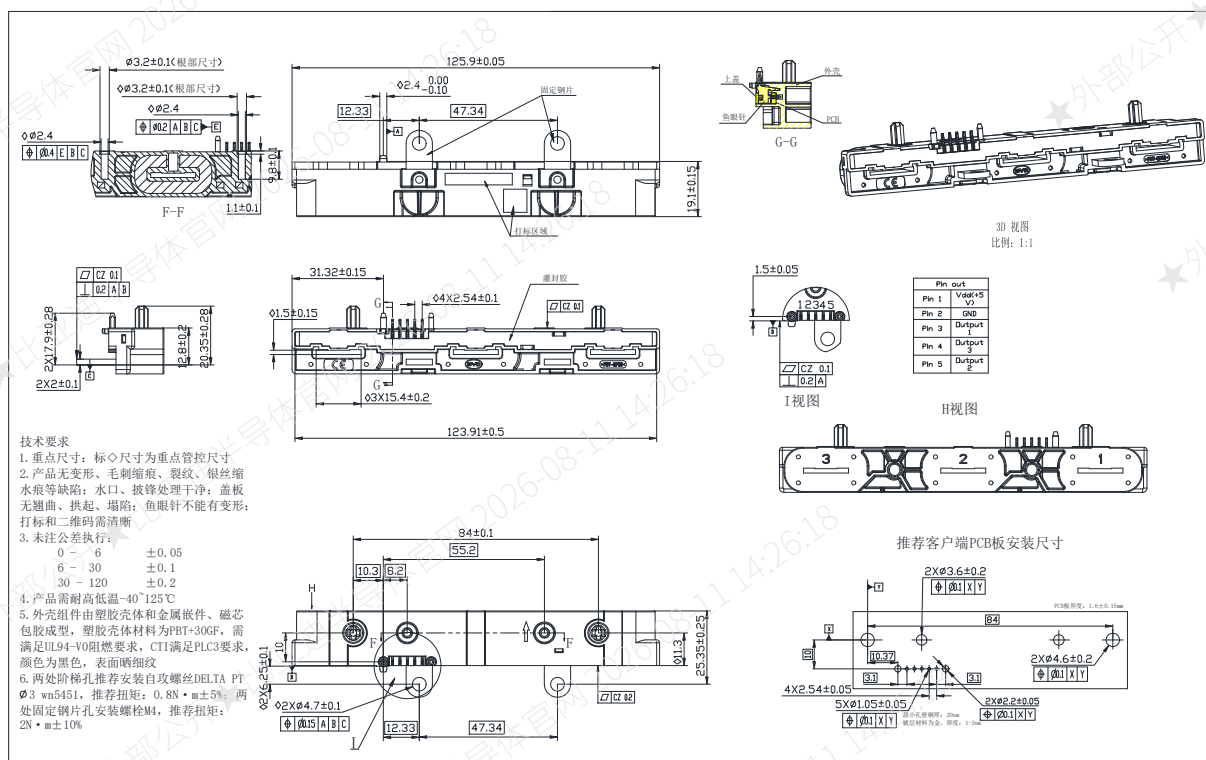
Notes: (1) The indicated offset voltage is the one after the core hysteresis is remove

**BCX9-1200IOV1WT Parameters Table**

PARAMETERS	SYMBOL	UNIT	VALUE			CONDITIONS
			Min.	Typ.	Max.	
Electrical data						
Supply voltage	V _{CC}	V	4.75	5	5.25	
Current consumption	I _{CC}	mA	-	36	48	@TA = 25°C
Output Load Resistance	R _L	kΩ	4.7	-	-	@V _{OUT} to GND
Output Load Capacitance	C _L	nF	-	1	-	@V _{OUT} to GND
Performance data						
Output voltage	V _{OUT}	V	V _{OUT} =(V _{CC} /5)×(V _{OUTQ} +G×I _P)			@TA = 25°C
Output Linearity (≤900A)	ε _L	%	-1	-	1	@TA = 25°C
Output Linearity (>900A)	ε _L	%	-2	-	2	@TA = 25°C
Accuracy @25°C (≤900A)	X	%	-1	-	1	@TA = 25°C
Accuracy @25°C (>900A)	X	%	-2	-	2	@TA = 25°C
Accuracy @-40~125°C	X _T	%	-3.5	-	3.5	@-40~125°C
Quiescent Output Voltage ⁽¹⁾	V _{OUTQ}	V	2.5			@TA = 25°C @V _{CC} =5V
Electrical offset Voltage	V _{OE}	mV	-20	-	20	@TA = 25°C @V _{CC} =5V
Magnetic offset Voltage	V _{OM}	mV	-3	-	3	@TA = 25°C @V _{CC} =5V
Sensitivity (G)	G	mV/A	-	1.667	-	@TA = 25°C
Sensitivity error %	ε _G	%	-0.6	-	0.6	
Average temperature coefficient of V _{OE}	TCV _{OE AV}	mV/°C	-0.05		0.05	
Average temperature coefficient of G	TCG _{AV}	%/°C	-0.03		0.03	
Output Bandwidth	BW	kHz	40	-	-	@Small signal -3dB
Response time	t _r	μS	-	-	8	
Rms voltage isolation test	V _d	kV	-	-	3	@AC 50Hz 1Min
General data						
Ambient operating temperature	T _A	°C	-40~+125			
Ambient storage temperature	T _S	°C	-40~+125			

Notes: (1) The indicated offset voltage is the one after the core hysteresis is removed.

Dimensions BCX9-IOV1WT (in mm. 1 mm = 0.0394 inch)



◆ Instructions of use

1. When the test current passes through the sensors, you can get the size of the output voltage. (Warning: wrong connection may lead to sensors damage).
2. Based on user needs, the output range of the sensors can be appropriately regulated.
3. According to user needs, different rated input currents and output voltages of the sensors can be customized.



RESTRICTIONS ON PRODUCT USE

- The information contained herein is subject to change without notice.
- BYD Semiconductor Co., Ltd. (short for) exerts the greatest possible effort to ensure high quality and reliability. Nevertheless, semiconductor devices in general can malfunction or fail due to their inherent electrical sensitivity and vulnerability to physical stress. It is the responsibility of the buyer, when utilizing products, to comply with the standards of safety in making a safe design for the entire system, including redundancy, fire-prevention measures, and malfunction prevention, to prevent any accidents, fires, or community damage that may ensue. In developing your designs, please ensure that products are used within specified operating ranges as set forth in the most recent products specifications.
- The products listed in this document are intended for usage in general electronics applications (computer, personal equipment, office equipment, measuring equipment, industrial robotics, domestic appliances, etc.). These products are neither intended nor warranted for usage in equipment that requires extraordinarily high quality and/or reliability or a malfunction or failure of which may cause loss of human life or bodily injury ("Unintended Usage"). Unintended Usage include atomic energy control instruments, airplane or spaceship instruments, transportation instruments, traffic signal instruments, combustion control instruments, medical instruments, all types of safety devices, etc.. Unintended Usage of products listed in this document shall be made at the customer's own risk.