**BYD Microelectronics Co., Ltd.**

Description

For the electronic measurement of currents: DC, AC, pulsed

Features

◆ Open loop transducer using the Hall effect
◆ Low voltage application
◆ Unipolar +5VDC power supply
◆ Primary current measuring range up to ±10.. ±30A
◆ Operating temperature range: $-40°C < T_A < +85°C$
◆ Output voltage: fully ratio-metric(gain and offset)

Advantages

◆ High accuracy
◆ Excellent linearity
◆ Low temperature drift
◆ Hermetic package
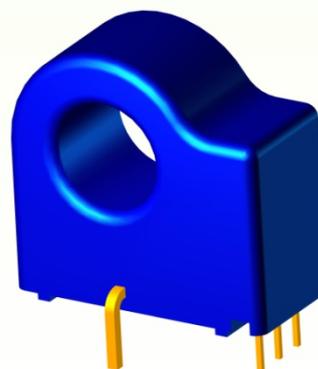
$$I_{PN} = 10...30A$$

TYPES OF PRODUCTS		
Type	Primary nominal current r. m. s I_{PN} (A)	Primary current measuring range I_P (A)
BSP-10IOV1EM	10	±10
BSP-15IOV1EM	15	±15
BSP-20IOV1EM	20	±20
BSP-25IOV1EM	25	±25
BSP-30IOV1EM	30	±30

Parameters Table

PARAMETERS	SYMBOL	UNIT	VALUE			CONDITIONS
			Min.	Typ.	Max.	
Electrical data						
Supply voltage	Vcc	V	4.5	5	5.5	
Current consumption	Icc	mA	-	9.2	12	@T_A = 25°C
Output Load Resistance	R_L	kΩ	4.7	-	-	@V_{OUT} to V_{CC}
	R_L	kΩ	4.7	-	-	@V_{OUT} to GND
Output Load Capacitance	C_L	nF	-	-	10	@V_{OUT} to GND
Performance data						
Output voltage	V_{OUT}	V	Vc /5 (2.5+0.2×Ip)@10A Vc /5 (2.5+0.1333×Ip)@15A Vc /5 (2.5+0.1×Ip)@20A Vc /5 (2.5+0.08×Ip)@25A Vc /5 (2.5+0.0666×Ip)@30A			@T_A = 25°C Vcc=5V
Output Linearity	ε_L	%	-1%	-	+1%	@T_A = 25°C
Accuracy（I_{PN} = 10...15A）	X	%	-2	-	+2%	@T_A = 25°C
Accuracy（I_{PN} = 20...30A）	X	%	-1.5%	-	+1.5%	@T_A = 25°C
Quiescent Output Voltage[1]	V_{OUTQ}	V	2.5±20mV			@ T_A = 25°C B=0
Sensitivity Temperature Coefficient	TCS_{ENS}	%/°C	-0.025	0	0.025	
Output Resistance	R_{OUT}	Ω	-	<1	-	
Output Bandwidth	BW	kH	-	-	50	@-3dB
Response time	t_r	μS	-	5	8	
Rms voltage isolation test	V_d	kV	-	-	2	@AC 50Hz 1Min
General data						
Ambient operating temperature	T_A	℃	-40～+85			
Ambient storage temperature	T_S	℃	-40～+105			

Notes:

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

Dimensions BSP-IOV1EM (in mm. 1 mm = 0.0394 inch)
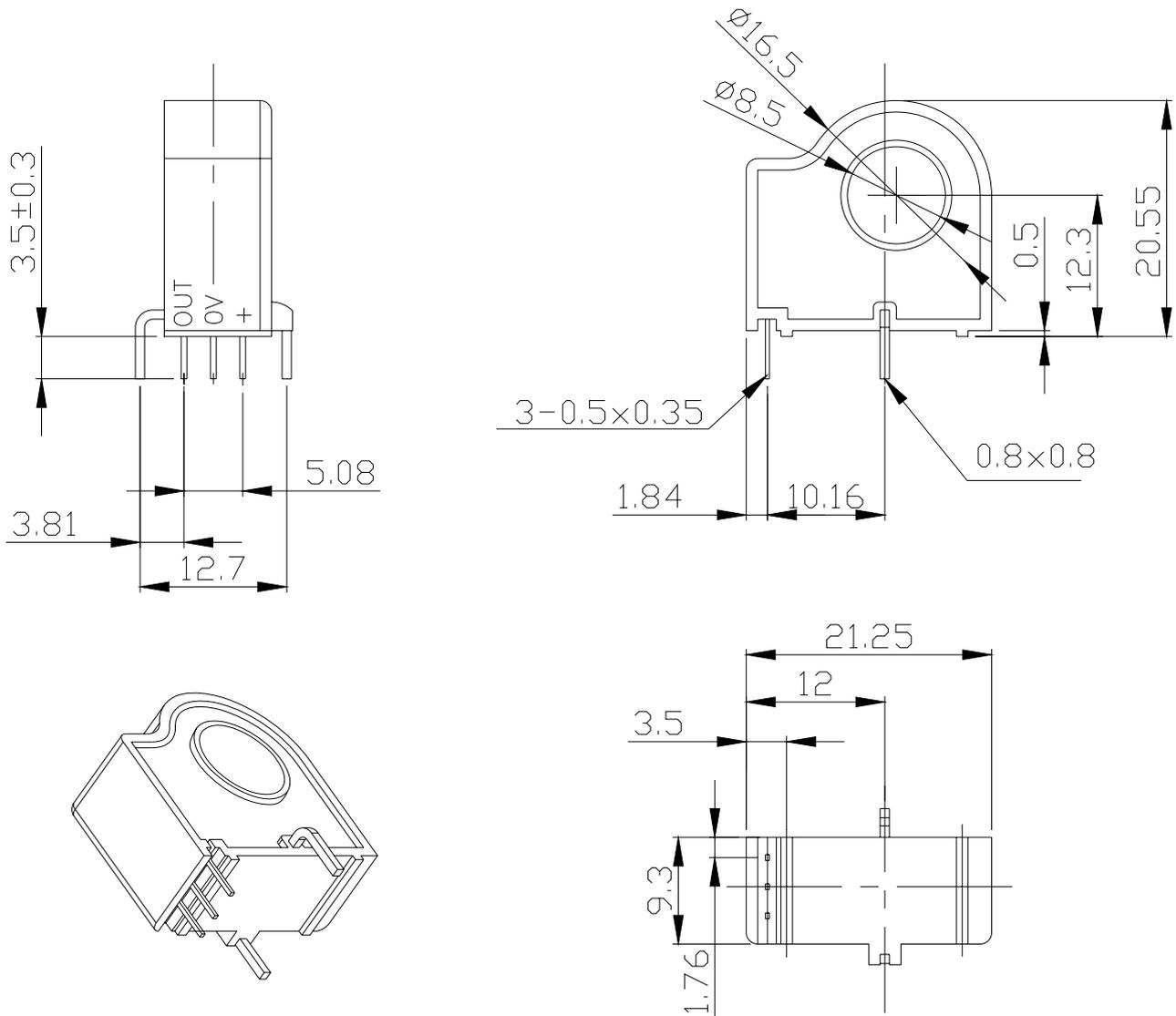
◆Instructions of use

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 Microelectronics Co., Ltd. (short for BME) 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 BME 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 BME products are used within specified operating ranges as set forth in the most recent BME products specifications.

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