BYD Microelectronics Co., Ltd.

BSX3-IOV1LA

Current Sensors

Description

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

Features

- Hall effect measuring principle
- Galvanic isolation between primary and secondary circuit
- Low power consumption
- Single power supply +5V
- Ratiometric offset
- Fixation by M3 nuts and screws
- Isolated plastic case recognized according to UL 94-V0

Advantages

- Small size and space saving
- Only one design for wide current ratings range
- High immunity to external interference.

Industrial applications

- Standard battery monitoring
- Hybrid and EV battery pack current sensing
- Fuel cell current control
- DC/DC converters and AC/DC inverters
- Hybrid and EV motor inverter drive
- EPS and X-by-wire applications
- Electric compressors for air conditioning

TYPES OF PRODUCTS		
Type	**Primary nominal current r. m. s I_{PN} (A)**	**Primary current measuring range I_P (A)**
BSX3-200IOV1LA	200	±300
BSX3-400IOV1LA	400	±600
BSX3-800IOV1LA	800	±1200

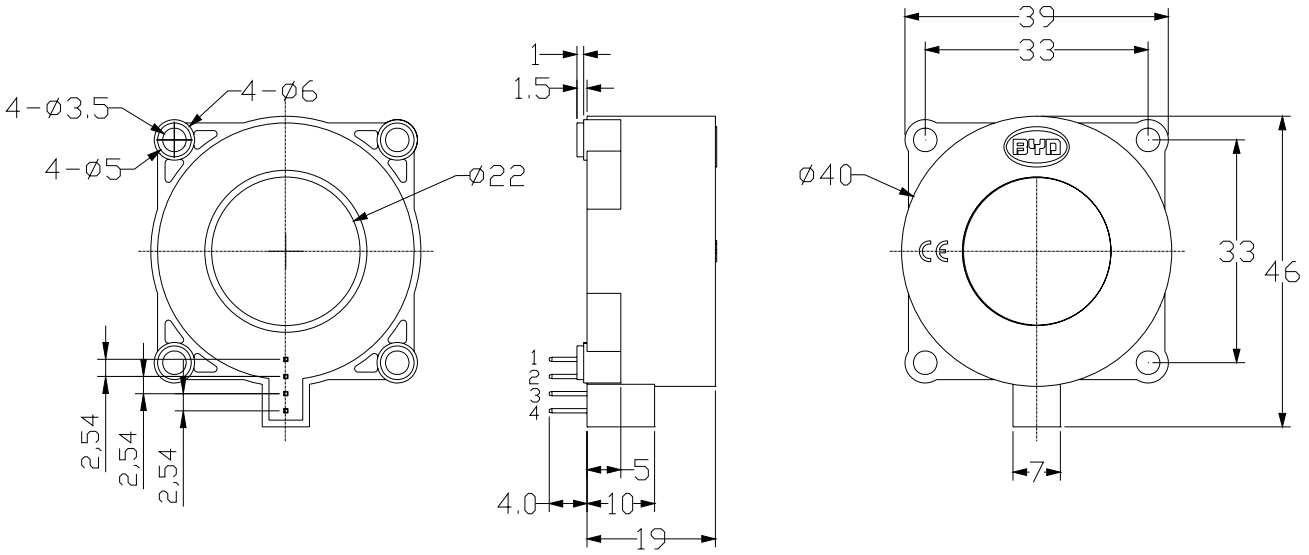
Parameters Table

PARAMETERS	SYMBOL	UNIT	VALUE			CONDITIONS
			Min.	Typ.	Max.	
Electrical data						
Supply voltage	Vcc	V	-	5	-	
Current consumption	Icc	mA	-	9.2	12	@No load on V_{OUT}
Output voltage	V_{OUT}	V	$V_{REF} \pm (1.25 \cdot I_P/I_{PN})$			@T_A = 25°C Vcc=5V
Reference voltage	V_{REF}	V	$1/2V_{CC} \pm 0.025$ V			
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						
Accuracy	X	%	≤±1.5%			@TA = 25°C
Output Linearity	ε_L	%	≤±1%			@TA = 25°C
Sensitivity Temperature Coefficient	TC_{SENS}	%/℃	-0.025		+0.025	
Output Resistance	R_{OUT}	Ω	-	<1	-	
di/dt accurately followed	di/dt	A/μs	100	-	-	
Output Bandwidth	BW	kH	-	50	-	@-3dB
Response time	t_r	μS	-	-	7	
Rms voltage isolation test	V_d	kV	-	-	2	@AC 50Hz 1Min
General data						
Ambient operating temperature	T_A	℃	-25～+85			
Ambient storage temperature	T_S	℃	-40～+125			

Notes:

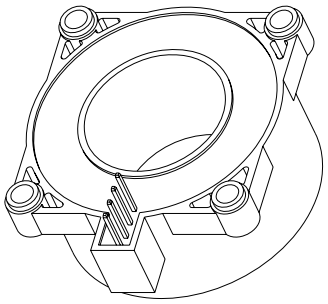
(1) The indicated offset voltage is the one after the core hysteresis is removed.

Dimensions BSX3-IOV1LA (in mm. 1 mm = 0.0394 inch)



Terminal Pin

1. Vref
2. Output
3. GND
4. +5V



◆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

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