BYD Microelectronics Co., Ltd.

BSY3-IOV2

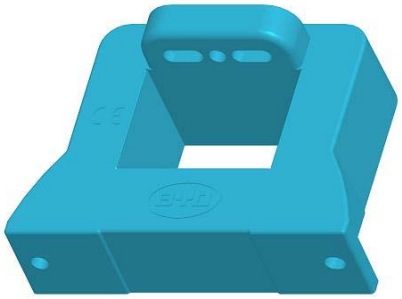
Current Sensors

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
- Low power consumption
- Isolation voltage 3000 V
- Extended measuring range (3 *I_{PN})
- Galvanic isolation between primary and secondary circuit
- Insulated plastic case recognized according to UL 94-V0



I_{PN} = 500…1500A
V_{OUT} = ± 4 V

Advantages

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

Industrial applications

- DC motor drives
- Switched Mode Power Supplies(SMPS)
- AC variable speed drives
- Uninterruptible Power Supplies(UPS)
- Battery supplied applications
- Power supplies for welding applications

TYPES OF PRODUCTS

Type	Primary nominal current rms I_{PN} (A)	Primary current measuring range I_P (A)
BSY3 – 500/4IOV2	500	±1500
BSY3 – 600/4IOV2	600	±1800
BSY3 – 800/4IOV2	800	±2400
BSY3-1000/4IOV2	1000	±2500
BSY3-12004IOV2	1200	±2500
BSY3-15004IOV2	1500	±2500

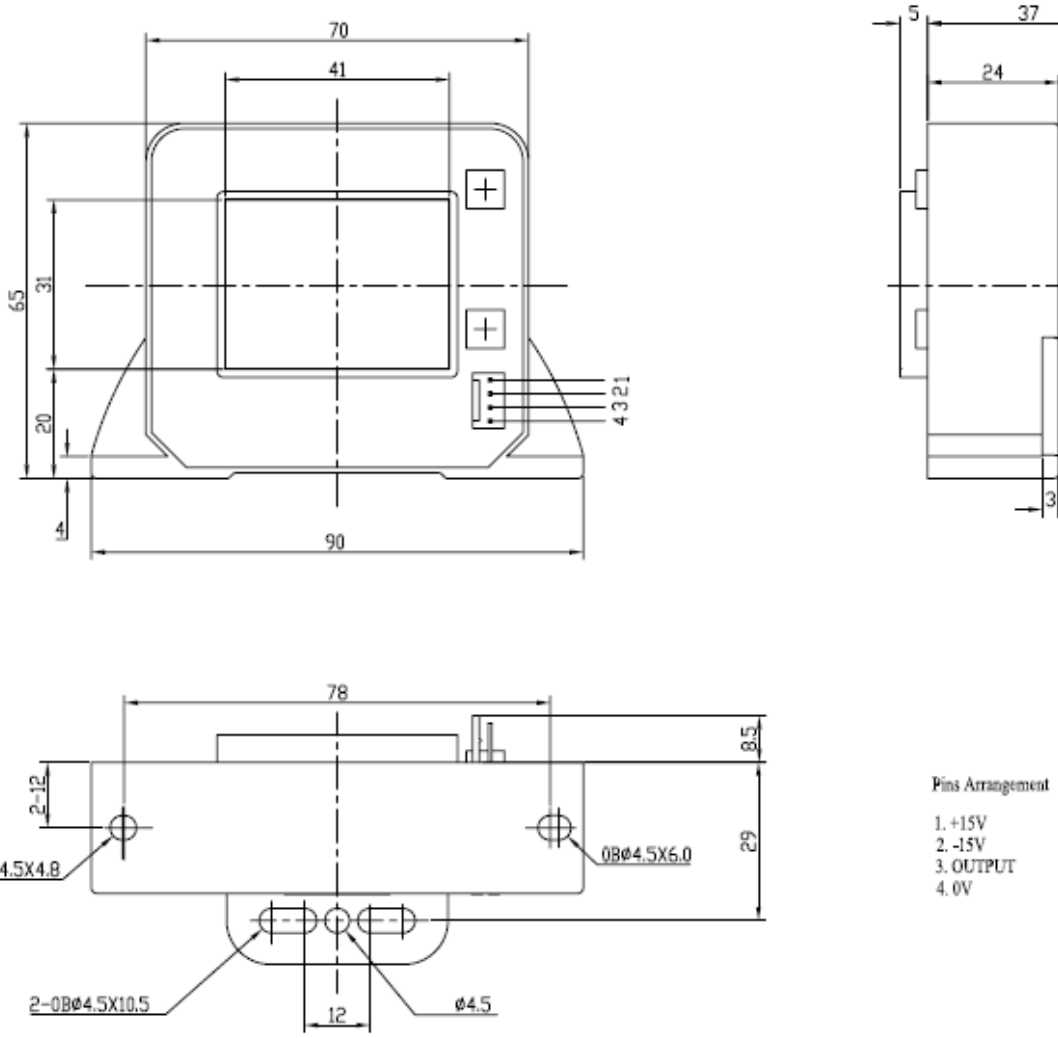
Parameters Table

PARAMETERS	SYMBOL	UNIT	VALUE	CONDITIONS
Electrical data				
Supply voltage(±5%)(1)	V_C	V	±15	
Current consumption	I_C	mA	±15	
Output voltage	V_{OUT}	V	±4	@ ± I_{PN}, R_L = 10 kΩ, T_A = 25°C
Isolation resistance	R_{IS}	MΩ	>1000	@ 500 VDC
Output internal resistance	R_{OUT}	Ω	100	
Load resistance(2)	R_L	KΩ	>10	
Accuracy - Dynamic performance data				
Linearity(3) (0…±I_{PN})	ε_L	% of I_{PN}	<±1	
Accuracy	X	% of I_{PN}	<±1	@ I_{PN}, T_A = 25°C (excluding offset)
Electrical offset voltage	V_{OE}	mV	<±20	@T_A = 25°C
Hysteresis offset voltage	V_{OH}	mV	<±10	@ I_P= 0
Temperature coefficient of V_{OE}	TCV_{OE}	mV/K	<±1	
Temperature coefficient of V_{OUT}	TCV_{OUT}	%/K	<±0.1	
Response time	t_r	μS	<5	@ 90% of I_{PN}
Frequency bandwidth(-3dB) (4)	BW	kHz	DC…25	-3dB
General data				
Ambient operating temperature	T_A	℃	-40…+85	
Ambient storage temperature	T_S	℃	-40…+105	
Mass	m	g	300	
Isolation characteristics				
Rated isolation voltage rms	V_b	V	1000	
Rms voltage for AC isolation test	V_d	kV	3	50 Hz, 1 min
Creepage distance	dCp	mm	> 11	
Clearance distance	dCI	mm	> 11	
Comparative Tracking Index	CTI		275	Group IIIa

Notes:

(1) Operating at ±12V ≤V_C<±15V will reduce the measuring range.
(2) If the customer uses 10KΩ of the load resistor, the primary current has to be limited as the nominal.
(3) Linearity data exclude the electrical offset.
(4) Please refer to derating curves in the technical file to avoid excessive core heating at high frequency.

Dimensions BSY3-IOV2 (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 sensors output range 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.

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