BYD Microelectronics Co., Ltd.

BSF3-ICV2L

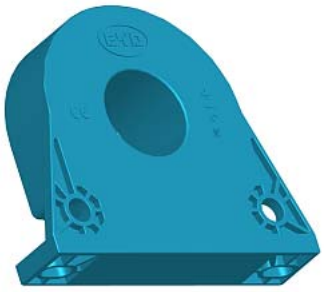
Current Sensors

Description

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

Features

- Hall effect measuring principle
- Galvanic isolation between primary and secondary circuit
- Low power consumption
- Extended measuring range
- Insulated plastic case recognized according to UL 94-V0



I_{PN} =100...300A

Advantages

- Very good linearity
- Excellent accuracy
- Low temperature drift
- Wide frequency bandwidth
- Optimized response time
- No insertion losses
- High immunity against external interference
- Excellent performance and price

Industrial applications

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

TYPES OF PRODUCTS

Type	Primary nominal current r. m. s I_{PN} (A)	Primary current measuring range I_P (A)	Measuring resistance R_M (Ω)	
BSF3-100ICV2L	100	0~±150	0～187	with±15V@±100Amax
			0～112	with±15V@±150Amax
BSF3-200ICV2L	200	0~±300	0～80	with±15V@±200Amax
			0～42	with±15V@±300Amax
BSF3-300ICV2L	300	0~±500	0～40	with±15V@±300Amax
			0～13	with±15V@±500Amax

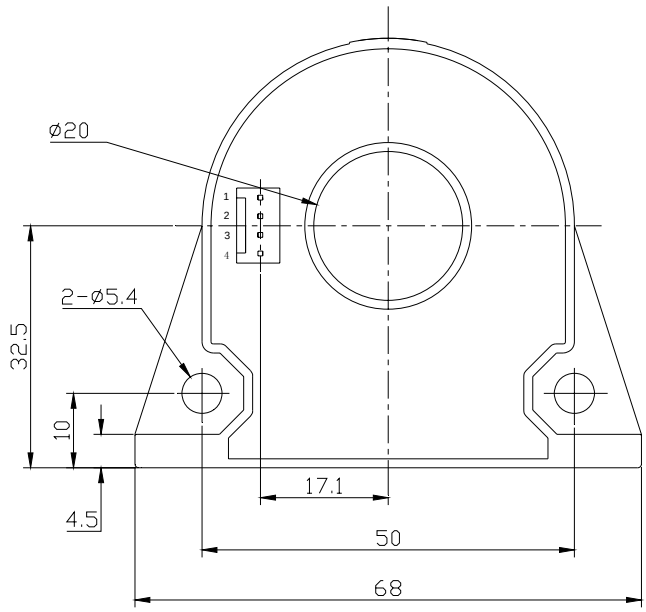
Parameters Table

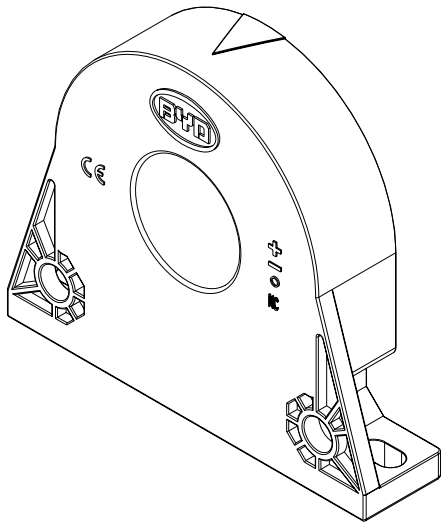
PARAMETERS	SYMBOL	UNIT	VALUE	CONDITIONS
Electrical data				
Supply voltage(±5%)	V_C	V	±15	
Current consumption	I_C	mA	22+Is	
Secondary nominal r.m.s. current	I_{SN}	mA	50	I_{PN} = 100A
			100	I_{PN} = 200A
			150	I_{PN} = 300A
Conversion ratio	K_N		1:2000	
R. m. s voltage for AC isolation test	V_d	KV	6	@50Hz, 1 min
Accuracy - Dynamic performance data				
Linearity	ε_L	%	<±0.1	
Accuracy	X_G	%	<±0.6	@ I_{PN}, T_A = 25°C
Offset current	I_O	mA	<±0.25	@ I_P = 0,T_A = 25°C
Thermal drift of Io	I_{OT}	mA	<±0.6	@ I_P = 0,－10°C～+70°C
Response time	t_r	μS	<1	@ 90% of I_{PN} step
d_i/d_t accurately followed	d_i/d_t	A/μS	>100	
Frequency bandwidth (1)	BW	kHz	DC~100	@-3dB
General data				
Ambient operating temperature	T_A	℃	-25 ~ +85	
Ambient storage temperature	T_S	℃	-40 ~ +105	
Secondary coil resistance	Rs	Ω	28	@ T_A = 70°C

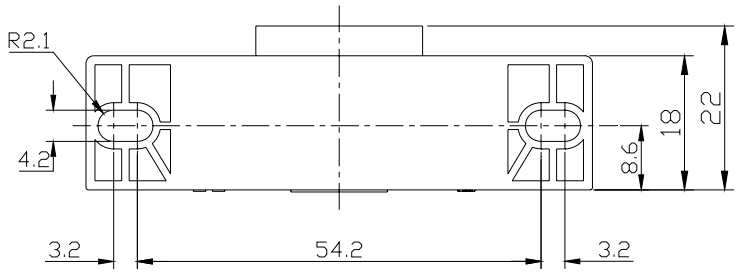
Notes:

(1) Please refer to derating curves in the technical file to avoid excessive core heating at high frequency.

Dimensions BSF3-ICV2L (in mm. 1 mm = 0.0394 inch)







Pins Arrangement

1:+15V
2:−15V
3:O
4:NC

◆Instructions of use

1. When the test current passes through the sensor, you can get the size of the output current. (Warning: wrong connection may lead to sensors damage.)
2. According to user needs, different rated input currents and output currents 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.

- The BME 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 BME 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 BME products listed in this document shall be made at the customer’s own risk.