

# DATA SHEET

## Hall Effect Current Sensor



PN: CHB\_C15D12.5/25/50

IPN=25~50A

### Feature

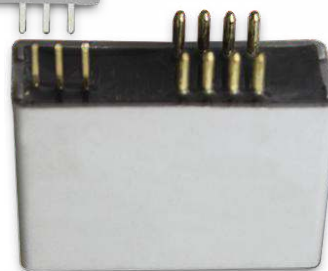
- Closed- loop (compensated) current transducer
- Capable measurement of currents: DC, AC,pulse with galvanic isolation between primary circuit and secondary circuit.
- PCB installation
- Supply voltage: DC  $\pm 12 \sim 15$  V

### Advantages

- High accuracy
- Easy installation
- Low temperature drift
- Optimized response time, no insertion losses
- Low power consumption
- High immunity to external interference

### Applications

- The application of variable frequency electrical appliances
- AC/DC variable-speed drive
- Uninterruptible Power Supplies (UPS)
- Switched Mode Power Supplies (SMPS)
- Inverter applications



RoHS



### Electrical data: (Ta=25°C, Vc= $\pm 15$ VDC)

| Ref<br>Parameter                                      | CHB25<br>C15D25Y1              | CHB50<br>C15D50Y1           | CHB25<br>C15D12.5Y2         | CHB50<br>C15D25Y1           |
|---|--------------------------------|-----------------------------|-----------------------------|-----------------------------|
| Rated input $I_{pn}(A)$                               | 25                             | 50                          | 25                          | 50                          |
| Measuring range $I_p(A)$                              | 0 ~ $\pm 55$                   | 0 ~ $\pm 100$               | 0 ~ $\pm 55$                | 0 ~ $\pm 120$               |
| Turns ratio $N_p/N_S (T)$                             | 1-2-3-4:1000                   | 1-2-3-4:1000                | 1-2-3:2000                  | 1-2-3-4:2000                |
| Output current rms $I_S(mA)$                          | $\pm 25.0 * (I_P / I_{PN})$    | $\pm 50.0 * (I_P / I_{PN})$ | $\pm 12.5 * (I_P / I_{PN})$ | $\pm 25.0 * (I_P / I_{PN})$ |
| Inside resistance $R_M (\Omega)$                      | 54~360                         | 68~180                      | 200~730                     | 54~250                      |
| Supply voltage $V_C(V)$                               | $(\pm 12 \sim \pm 15) \pm 5\%$ |                             |                             |                             |
| Accuracy $X_G(\%)$                                    | @IPN,T=25°C                    |                             | < $\pm 0.5$                 |                             |
| Offset current $I_{OE}(mA)$                           | @IP=0,T=25°C                   |                             | < $\pm 0.2$                 |                             |
| Temperature variation of IOE<br>$I_{OT}(mA/^\circ C)$ | @IP=0,-40 ~ +85°C              |                             | < $\pm 0.005$               |                             |
| Linearity error $\epsilon_r(\%FS)$                    |                                |                             | < 0.1                       |                             |
| Di/dt accurately followed (A/ $\mu s$ )               |                                |                             | > 50                        |                             |

|                               |                   |        |
|-------------------------------|-------------------|--------|
| Response time $t_{ra}(\mu s)$ | @90% of IPN       | < 1.0  |
| Power consumption $I_C(mA)$   |                   | 15+Is  |
| Bandwidth BW(KHZ)             | @-3dB,IPN         | DC-200 |
| Insulation voltage $V_d(KV)$  | @50/60Hz, 1min,AC | 5.0    |

### General data:

| Parameter                              | Value                  |
|--|------------------------|
| Operating temperature $T_A(^{\circ}C)$ | -40 ~ +85              |
| Storage temperature $T_S(^{\circ}C)$   | -55 ~ +125             |
| Mass $M(g)$                            | 15                     |
| Plastic material                       | PBT G30/G15, UL94- V0; |
| Standards                              | IEC60950-1:2001        |
|  | EN50178:1998           |
|  | SJ20790-2000           |

### Dimensions(mm):

**Connection**

**General tolerance**

General tolerance: <  $\pm 0.5mm$   
Primary Pin size : $*d=1.25\pm 0.1mm$   
Secondary Pin size : $0.635*0.635\pm 0.1mm$

| Primary turns NP(T) | Rated input INP(A) |    | Rated output ISN (A) |    |          |    | The connection of primary pin |      |
|---------------------|--------------------|----|----------------------|----|----------|----|-------------------------------|------|
|                     |                    |    | NS=1000T             |    | NS=2000T |    | 6 Pin                         | 8pin |
| 1                   | 25                 | 50 | 25                   | 50 | 12.5     | 25 |                               |      |
| 2                   | 12.5               | 25 | 25                   | 50 | 12.5     | 25 |                               |      |
| 3                   | 8                  | 16 | 24                   | 48 | 12       | 24 |                               |      |

|   |   |    |    |    |    |    |  |  |
|---|---|----|----|----|----|----|--|--|
| 4 | 6 | 12 | 24 | 48 | 12 | 24 |  |  |
|---|---|----|----|----|----|----|--|--|

### Remarks:

- When the current goes through the primary pin of a sensor, the voltage will be measured at the output end.
- Custom design is available for the different rated input current and the output voltage.
- The dynamic performance is the best when the primary hole is fully filled with.
- The primary conductor should be  $<100^{\circ}\text{C}$ .

**WARNING : Incorrect wiring may cause damage to the sensor.**