## 1. Description

The TB Series Current Sensors are closed loop Hall effect current sensors that accurately measure DC and AC current and provide electrical isolation between the primary current and the output of the sensor.

2. Electrical Specifications

| Type                          |    | See Table 1                |
|-------------------------------|----|----------------------------|
| Primary nominal current       | AT | See Table 1                |
| Primary current, measuring    | AT | See Table 1                |
| range                         |    |                            |
| Nominal analog output current | V  | 4                          |
| Supply Voltage                | V  | ±14V to ±17V               |
| Overall Accuracy at 25°C      |    | ± (1%+Zero current offset) |
| Dielectric strength           | kV | 2.5                        |
| r.m.s / 60Hz / 1 min          |    |                            |

3. Accuracy-Dynamic Performance

| Zero current offset at 25°C | mV | ±30              |
|-----------------------------|----|------------------|
| Offset current temperature  |    |                  |
| drift                       | mV | ±30              |
| Between -20~80°C            |    |                  |
| Linearity                   | %  | better than 0.25 |
| Response time               | ms | less than 1      |
| Bandwidth                   |    |                  |
| between 0 to 50kHz          | %  | ±5               |
| between 0 to 100kHz         |    | ±10              |

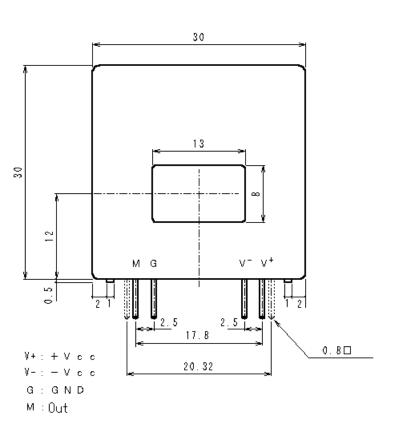
## 4. General information

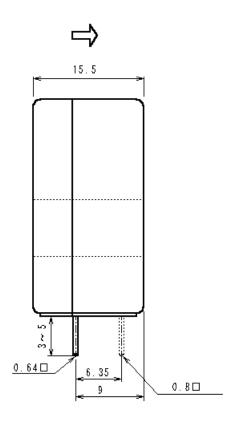
| Operating temperature | °C    | -20~+80                                     |  |
|-----------------------|-------|---|--|
| Storage temperature   | °C    | -40~+80                                     |  |
| Current drain         | mA    | See Table 1                                 |  |
| Weight                | grams | 18~22                                       |  |
| Package               |       | Flame retarded plastic case UL94-V0         |  |
| Mounting              |       | Designed to mount on PCB via thru hole      |  |
| _                     |       | connection pins                             |  |
| Aperture              | mm    | 13×8  |  |
| Output reference      |       | To obtain a positive output on the terminal |  |
|                       |       | marked "M" primary current must flow in the |  |
|                       |       | direction of the arrow                      |  |

Table 1

| Type    | Nominal current | Measuring range | Current drain |
|---------|-----------------|-----------------|---------------|
|         | [AT]            | [AT]            | [mA]          |
| TB 045F | ±45             | ±120            | ±10 to±56     |
| TB 100F | ±100            | ±250            | ±10 to±106    |
| TB 100R | ±100            | ±250            | ±10 to±106    |
| TB 064F | ±64             | ±72             | ±10 to±72     |
| TB 073F | ±73             | ±182.5          | ±10 to±72     |
| TB 099F | ±99.2           | ±248            | ±10 to±106    |
| TB 101F | ±101            | ±252            | ±10 to±106    |
| TB 122F | ±122            | ±305            | ±10 to±106    |
| TB 145F | ±145            | ±362.5          | ±10 to±130    |

## 5. Dimensions in mm





## 6. Materials

| 1   | Case                   | Glass-filled PBT UL94-V0<br>Mitubisi 5010GN3-15               | See 7-1 |
|-----|------------------------|---|---------|
| 2   | Moistureproof coatings | Polyurethane UL94-V0<br>HUMISEAL 1A27                         | See 7-2 |
| 3   | Core Support           | Glass-filled PBT UL94-V0<br>Mitubisi 5010GN3-15               | See 7-1 |
| 4   | P.C.B                  | FR-4 0.8t UL94-V0<br>CMK.CORP CMK-G2X                         | See 7-3 |
| (5) | Core                   | Permalloy   |         |
| 6   | Adhesive               | Silicone rubber<br>UL94-V0<br>SHIN-ETSU CHEMICAL<br>KE-3494GY | See 7-4 |
| 7   | Magnet Wire            | Polyurethane UL TI 130°C DAIICHI DENKO UEWU                   | See 7-5 |

