

Topstek Current Transducer THDD5A .. THDD50A

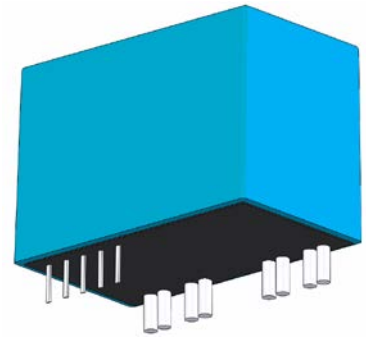
THDD 5A~50A

Features

- ◆ Highly reliable Hall Effect device
- ◆ Compact and light weight. Two sensors in one package
- ◆ Fast response time
- ◆ Excellent linearity of the output voltage over a wide input range
- ◆ Excellent frequency response (> 50 kHz)
- ◆ Low power consumption (33 mA nominal)
- ◆ Capable of measuring both DC and AC, both pulsed and mixed
- ◆ High isolation voltage between the measuring circuit and the current-carrying conductor (AC2.5KV)
- ◆ Extended operating temperature range
- ◆ Flame-Retardant plastic case and silicone encapsulate, using UL classified materials, ensures protection against environmental contaminants and vibration over a wide temperature and humidity range

Applications

- ◆ UPS systems
- ◆ Industrial robots
- ◆ NC tooling machines
- ◆ Elevator controllers
- ◆ Process control devices
- ◆ AC and DC servo systems
- ◆ Motor speed controller
- ◆ Electrical vehicle controllers
- ◆ Inverter-controlled welding machines
- ◆ General and special purpose inverters
- ◆ Power supply for laser processing machines
- ◆ Controller for traction equipment e.g. electric trains
- ◆ Other automatic control systems



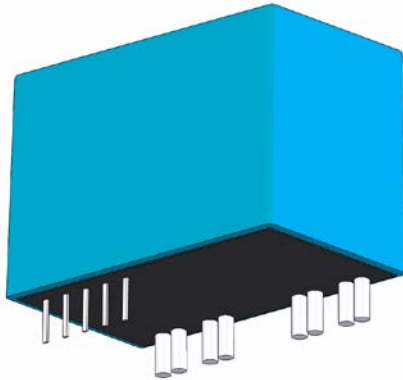
Specifications

| Parameter | Symbol | Unit | 3A | 5A | 7.5A | 10A | 15A | 18.5A | 20A | 25A | 30A | 37.5A | 50A |
|--------------------------------------|-----------------|----------------|----------------------------------------------------|-----|-------|-----|-----|-------|-----|-----|-----|-------|-------|
| Nominal Input Current | I_{fn} | A DC | 3 | 5 | 7.5 | 10 | 15 | 18.5 | 20 | 25 | 30 | 37.5 | 50 |
| Linear Range | I_{fs} | A DC | ±9 | ±15 | ±22.5 | ±30 | ±45 | ±56 | ±60 | ±75 | ±90 | ±113 | ±150 |
| Primary Wire Diameter | ϕ_d | mm | 0.6 | 0.8 | 1.0 | 1.2 | 1.6 | 1.6 | 1.6 | 1.6 | 1.6 | 1.6x2 | 1.6x2 |
| Nominal Output Voltage | V_{hn} | V | 4 V ±1% @ $I_f = I_{fn}$ ($R_L = 10k\Omega$) | | | | | | | | | | |
| Offset Voltage | V_{os} | mV | Within ±40 mV @ $I_f = 0$, $T_a = 25^\circ C$ | | | | | | | | | | |
| Output Resistance | R_{OUT} | Ω | <100 Ω (50 Ω nominal) | | | | | | | | | | |
| Hysteresis Error | V_{oh} | mV | Within ±35 mV @ $I_f = I_{fn} \rightarrow 0$ | | | | | | | | | | |
| Supply Voltage | V_{CC}/V_{EE} | V | ±15V ±5% | | | | | | | | | | |
| Linearity | ρ | % | Within ±1% of I_{fn} | | | | | | | | | | |
| Consumption Current | I_{CC} | mA | ±33 mA nominal, ±45 mA max | | | | | | | | | | |
| Response Time (90% V_{hn}) | T_r | μ sec | 3 μ sec max. @ $d I_f / dt = I_{fn} / \mu$ sec | | | | | | | | | | |
| Response Performance | - | % | 10% Overshoot max. | | | | | | | | | | |
| Frequency bandwidth (-3dB) | f_{BW} | Hz | DC to 50kHz | | | | | | | | | | |
| Thermal Drift of Output | - | %/ $^\circ C$ | Within ±0.1 %/ $^\circ C$ @ I_{fn} | | | | | | | | | | |
| Thermal Drift of Zero Current Offset | - | mV/ $^\circ C$ | < ±2 mV/ $^\circ C$ | | | | | | | | | | |
| Dielectric Strength | - | V | AC2.5KV X 60 sec | | | | | | | | | | |
| Isolation Resistance @ 1000 VDC | R_{IS} | M Ω | >1000 M Ω | | | | | | | | | | |
| Operating Temperature | T_a | $^\circ C$ | -15 $^\circ C$ to 80 $^\circ C$ | | | | | | | | | | |
| Storage Temperature | T_s | $^\circ C$ | -20 $^\circ C$ to 85 $^\circ C$ | | | | | | | | | | |
| Mass | W | g | 26 g | | | | | | | | | | |

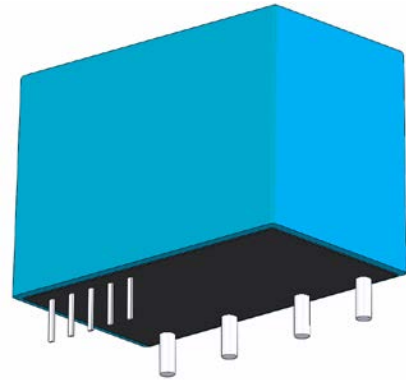
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Appearance, dimensions and pin identification

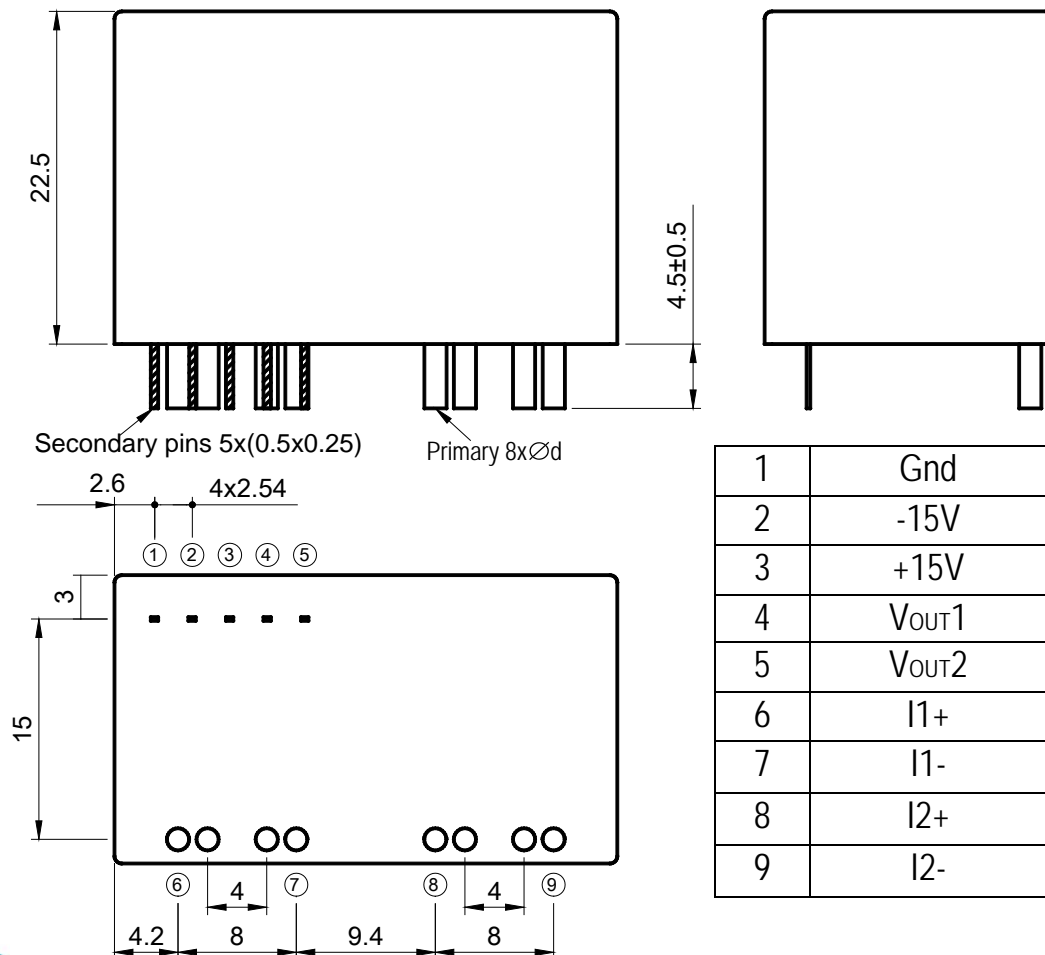
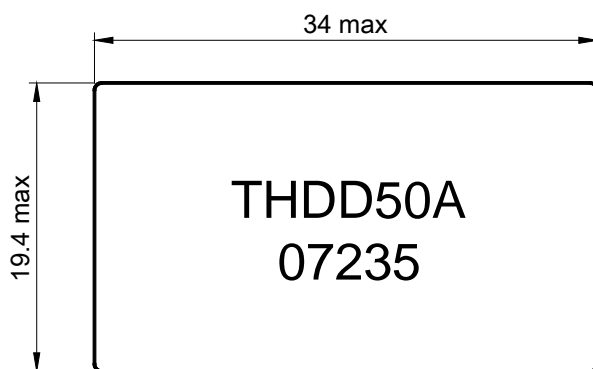
All dimensions in mm ± 0.5 , holes $-0, +0.2$ except otherwise noted.



For models $I_{fn} > 30A$ primary wire = $1.6\phi \times 2$



For models $I_{fn} \leq 30A$ primary wire = $0.6\phi \sim 1.6\phi \times 1$



| | |
|---|-------------------|
| 1 | Gnd |
| 2 | -15V |
| 3 | +15V |
| 4 | V _{OUT1} |
| 5 | V _{OUT2} |
| 6 | I ₁₊ |
| 7 | I ₁₋ |
| 8 | I ₂₊ |
| 9 | I ₂₋ |