



Topstek Current Transducer TH3A .. TH50A

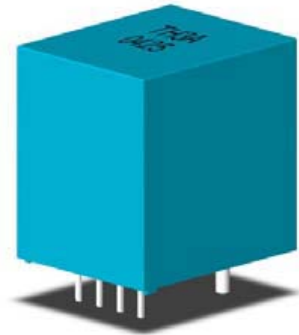
TH 3A~50A

Features

- ◆ Highly reliable Hall Effect device
- ◆ Compact and light weight
- ◆ Fast response time
- ◆ Excellent linearity of the output voltage over a wide input range
- ◆ Excellent frequency response (> 50 kHz)
- ◆ Low power consumption (12 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 | TH3A .. TH50A | TH3A-B12 .. TH50A-B12 |
|--------------------------------------|-----------------|----------------|--|------------------------------------|
| Nominal Input Current | I_{fn} | A DC | 3 .. 50 | |
| Linear Range | I_{fs} | A DC | $\pm 9 .. \pm 150 = 3x I_{fn}$ | $\pm 7.2 .. \pm 120 = 2.4x I_{fn}$ |
| Nominal Output Voltage | V_{fn} | V | 4 V \pm 1% at $I_f=I_{fn}$ ($R_L=10k\Omega$) | |
| Offset Voltage | V_{os} | mV | Within ± 40 mV @ $I_f=0$, $T_a=25^\circ C$ | |
| Output Resistance | R_{OUT} | Ω | <100 Ω | |
| Hysteresis Error | V_{oh} | mV | Within ± 15 mV @ $I_f=I_{fn} \rightarrow 0$ | |
| Supply Voltage | V_{CC}/V_{EE} | V | $\pm 15V \pm 5\%$ | $\pm 12V \pm 5\%$ |
| Linearity | ρ | % | Within $\pm 1\%$ of I_{fn} | |
| Consumption Current | I_{CC} | mA | ± 12 mA nominal, ± 16 mA max | |
| Response Time (90% V_{fn}) | T_r | μ sec | 5 μ sec max. @ $d I_f / dt = I_{fn} / \mu$ sec | |
| 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/ $^\circ C$ | Within ± 1.5 mV/ $^\circ C$ @ I_{fn} | |
| 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 | 10 g | |



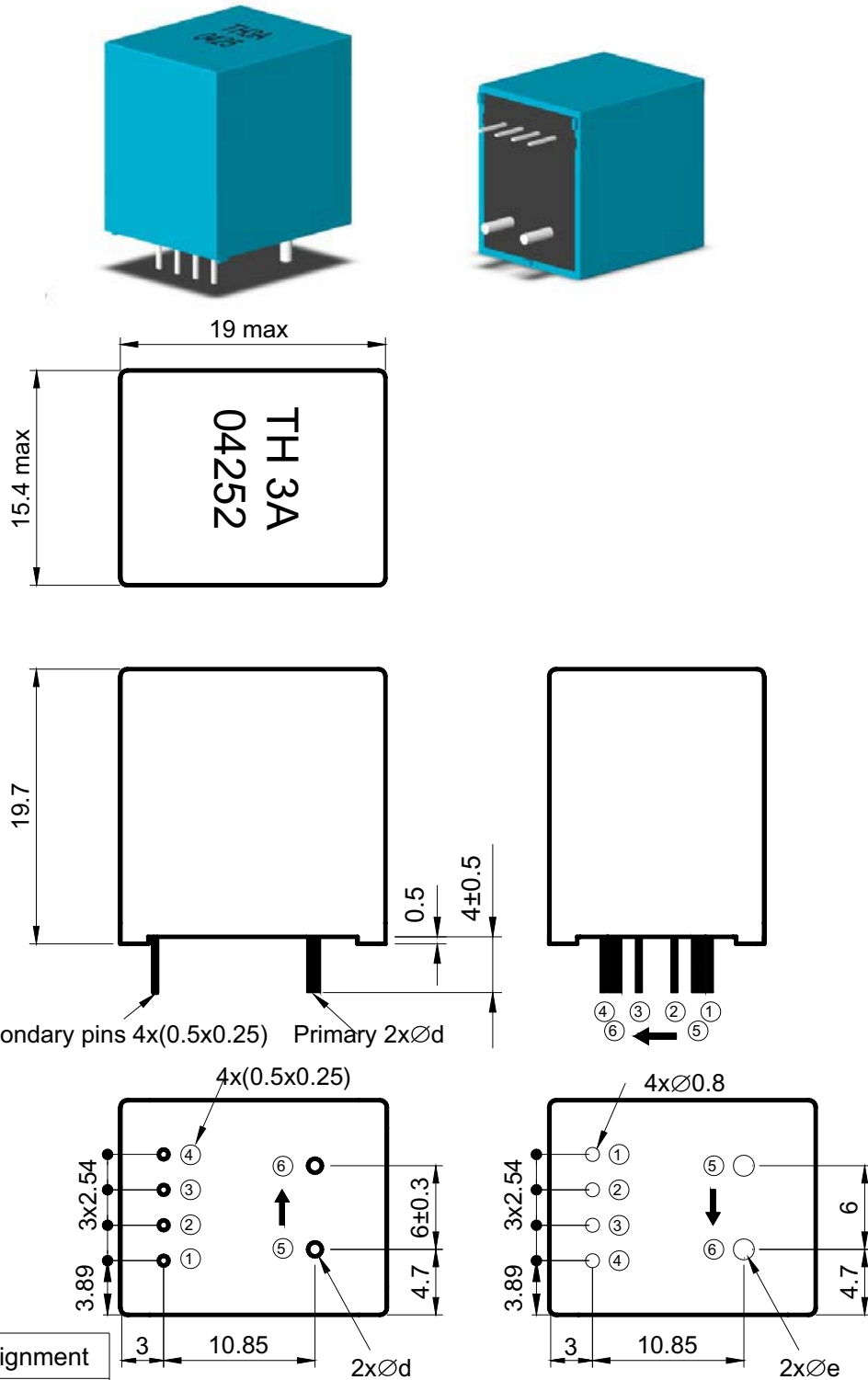


Topstek Current Transducer TH3A .. TH50A

Appearance, dimensions and pin identification for TH3A .. TH30A models

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

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| Pin Assignment | |
|----------------|------|
| ① | -15V |
| ② | 0V |
| ③ | +15V |
| ④ | Vout |
| ⑤ | I + |
| ⑥ | I - |

Bottom View

PCB mounting hole layout
 Positive current flow direction

| Part Number | 1-3A | 4-6A | 6-9A | 10-12.5A | 13-18.5A | 20-30A |
|-------------|------|------|------|----------|----------|--------|
| d(mm) | 0.6 | 0.8 | 1.0 | 1.2 | 1.4 | 1.6 |
| e(mm) | 1.2 | 1.2 | 1.6 | 1.8 | 2.2 | 2.4 |



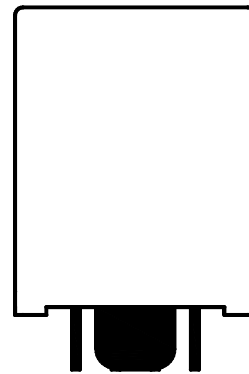
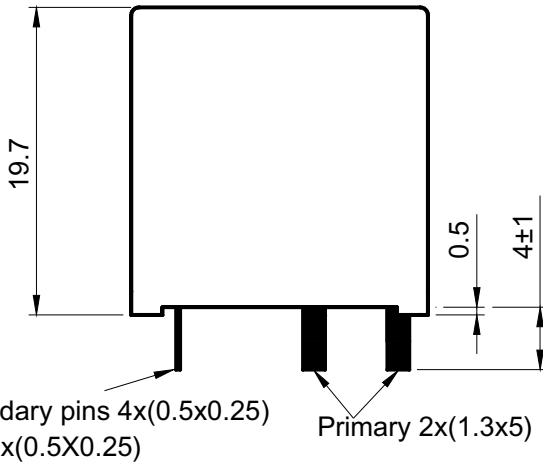
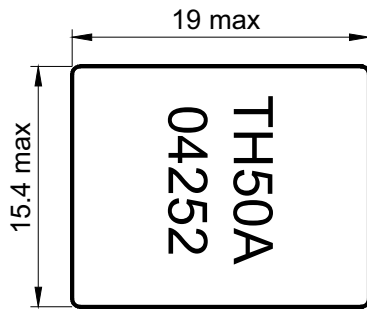
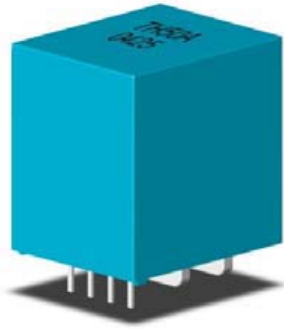


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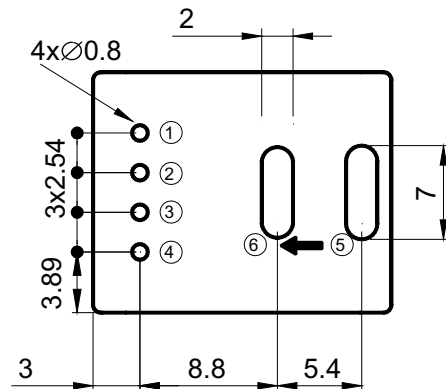
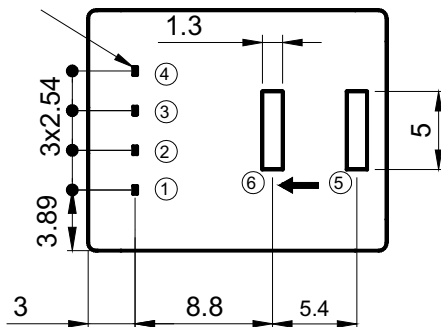
Appearance, dimensions and pin identification for TH37.5A .. TH50A models

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

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Secondary pins 4x(0.5x0.25)
4x(0.5X0.25) Primary 2x(1.3x5)



Bottom View

PCB mounting hole layout

→ Positive current flow direction

| Pin Assignment | |
|----------------|------|
| ① | -15V |
| ② | 0V |
| ③ | +15V |
| ④ | Vout |
| ⑤ | I + |
| ⑥ | I - |

| Part Number | TH37.5A | TH50A |
|-------------|---------|--------|
| d(mm) | □1.3x5 | □1.3x5 |
| e(mm) | □2.0x6 | □2.0x6 |

