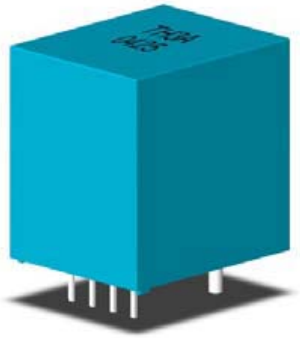
Topstek Current Transducer TH3A .. TH50A

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

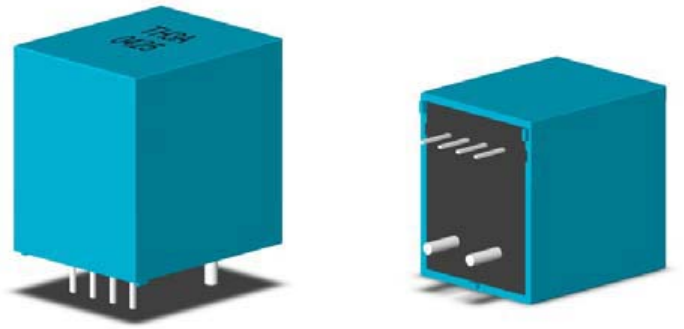
- ♦ UPS systems
- ♦ Industrial robots
- ♦ NC tooling machines
- ♦ Elevator controllers
- ♦ Process control devices
- ♦ AC and DC servo systems
- ♦ Motor speed controller
- ♦ Electrical vehicle controllers
- ♦ Inverter-controlled welding machines
- ♦ General and special purpose inverters
- ♦ Power supply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

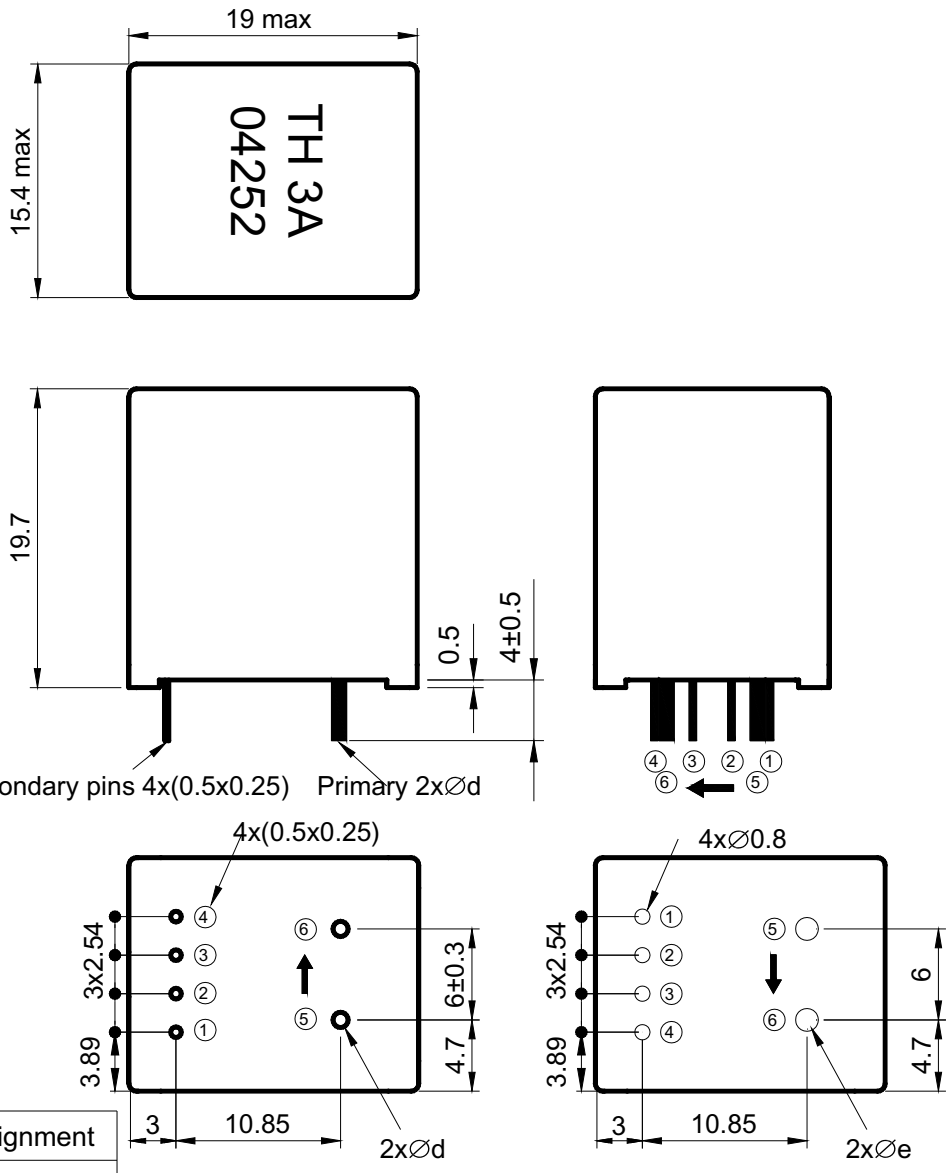
Specifications

Parameter	Symbol	Unit	TH3A .. TH50A	TH3A-B12 .. TH50A-B12
Nominal Input Current	I_{fn}	A DC	3 .. 50	
Linear Range	I_{fs}	A DC	±9 .. ±150 = 3x I_{fn}	±7.2 .. ±120 = 2.4x I_{fn}
Nominal Output Voltage	V_{hn}	V	4 V±1% at If=I_{fn} (R_L=10kΩ)	
Offset Voltage	V_{os}	mV	Within ±40 mV @ I_f=0, T_a=25°C	
Output Resistance	R_{OUT}	Ω	<100Ω	
Hysteresis Error	V_{oh}	mV	Within ±15 mV @ I_f=I_{fn}→0	
Supply Voltage	V_{CC}/V_{EE}	V	±15V ±5%	±12V ±5%
Linearity	ρ	%	Within ±1% of I_{fn}	
Consumption Current	I_{CC}	mA	±12 mA nominal, ±16 mA max	
Response Time (90%V_{hn})	T_r	μsec	5 μsec max. @ $d I_f / dt = I_{fn}$ / μsec	
Frequency bandwidth (-3dB)	f_{BW}	Hz	DC to 50kHz	
Thermal Drift of Output	-	%/°C	Within ±0.1 %/°C @ I_{fn}	
Thermal Drift of Zero Current Offset	-	mV/°C	Within ±1.5 mV/°C @ I_{fn}	
Dielectric Strength	-	V	AC2.5KV X 60 sec	
Isolation Resistance @ 1000 VDC	R_{IS}	MΩ	>1000 MΩ	
Operating Temperature	T_a	°C	-15°C to 80°C	
Storage Temperature	T_s	°C	-20°C to 85°C	
Mass	W	g	10 g	

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

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





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

Bottom View

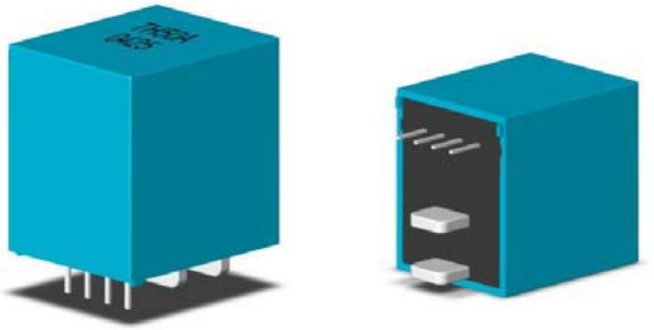
PCB mounting hole layout

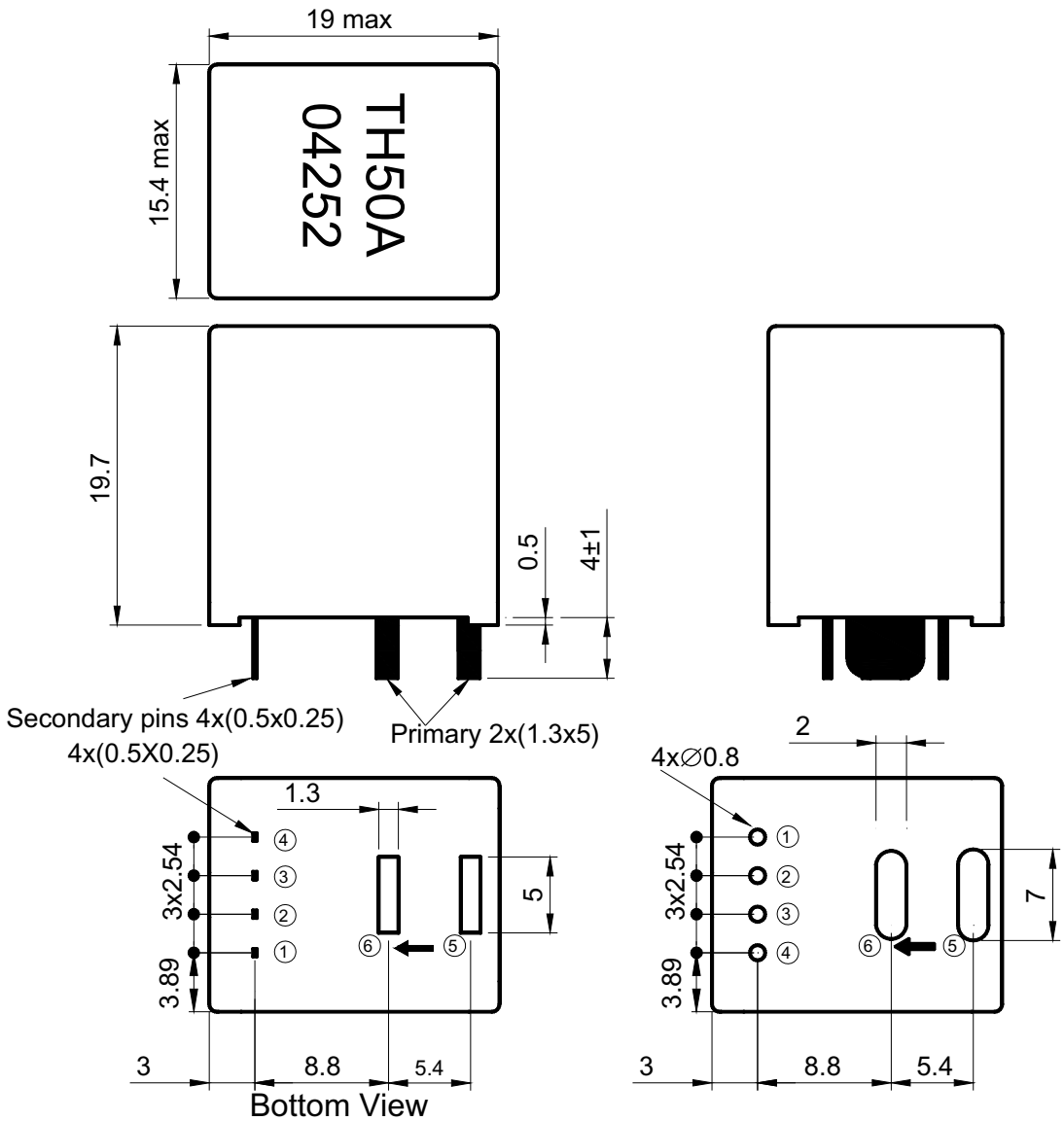
Positive current flow direction

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

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

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





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