

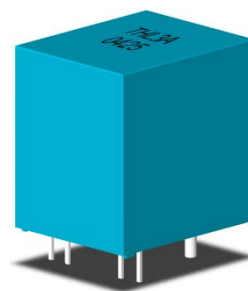
## THL 3A~50A

### 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

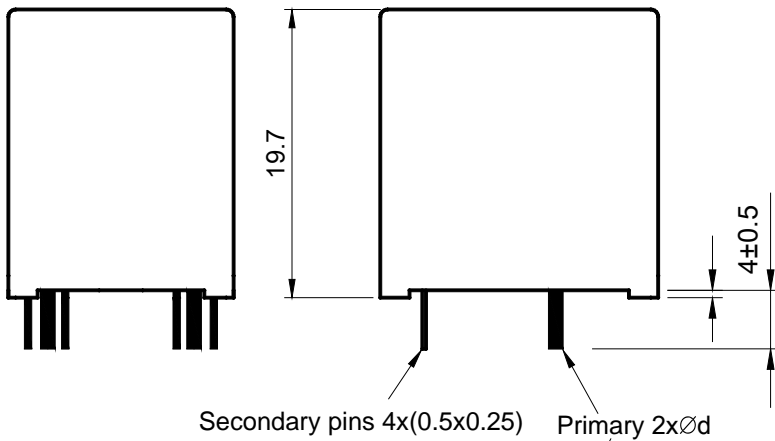
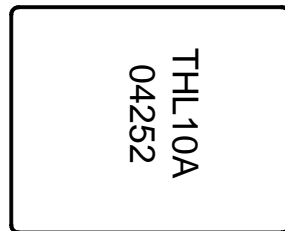
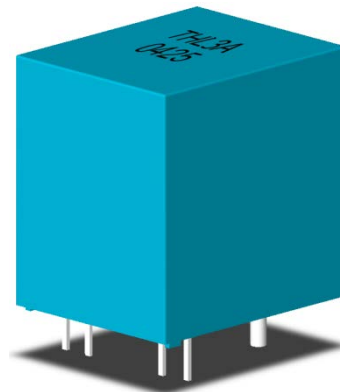
Parameter	Symbol	Unit	THL3A .. THL50A
Nominal Input Current	$I_{fn}$	A DC	3 .. 50
Linear Range	$I_{fs}$	A DC	$\pm 9 \dots \pm 150 = 3 \times I_{fn}$
Nominal Output Voltage	$V_{hn}$	V	4 V $\pm 1\%$ at $I_f = I_{fn}$ ( $R_L = 10k\Omega$ )
Offset Voltage	$V_{os}$	mV	Within $\pm 40$ mV @ $I_f = 0$ , $T_a = 25^\circ\text{C}$
Output Resistance	$R_{OUT}$	$\Omega$	$< 100\Omega$
Hysteresis Error	$V_{oh}$	mV	Within $\pm 15$ mV @ $I_f = I_{fn} \rightarrow 0$
Supply Voltage	$V_{CC}/V_{EE}$	V	$\pm 15V \pm 5\%$
Linearity	$\rho$	%	Within $\pm 1\%$ of $I_{fn}$
Consumption Current	$I_{CC}$	mA	$\pm 12$ mA nominal, $\pm 16$ mA max
Response Time (90% $V_{hn}$ )	$T_r$	$\mu\text{sec}$	5 $\mu\text{sec}$ max. @ $d I_f / dt = I_{fn} / \mu\text{sec}$
Frequency bandwidth (-3dB)	$f_{BW}$	Hz	DC to 50kHz
Thermal Drift of Output	-	$\% / ^\circ\text{C}$	Within $\pm 0.1 \%$ $^\circ\text{C}$ @ $I_{fn}$
Thermal Drift of Zero Current Offset	-	$\text{mV} / ^\circ\text{C}$	Within $\pm 1.5$ mV $^\circ\text{C}$ @ $I_{fn}$
Dielectric Strength	-	V	AC2.5KV X 60 sec
Isolation Resistance @ 1000 VDC	$R_{IS}$	$M\Omega$	$> 1000 M\Omega$
Operating Temperature	$T_a$	$^\circ\text{C}$	$-15^\circ\text{C}$ to $80^\circ\text{C}$
Storage Temperature	$T_s$	$^\circ\text{C}$	$-20^\circ\text{C}$ to $85^\circ\text{C}$
Mass	W	g	10 g



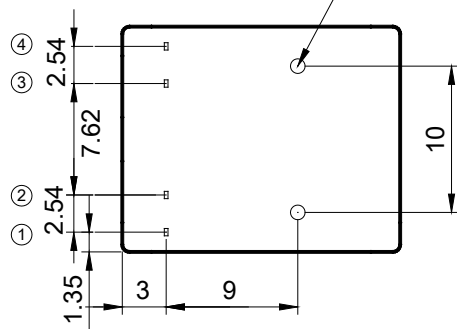
# Topstek Current Transducer THL3A .. THL50A

## Appearance, dimensions and pin identification

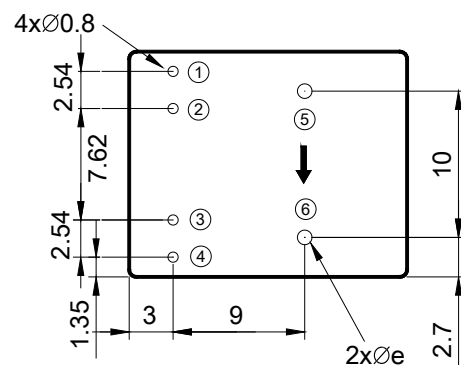
All dimensions in mm  $\pm 0.5$ , holes  $-0$ ,  $+0.2$  except otherwise noted.



Pin Assignment	
①	V <sub>OUT</sub>
②	+15V
③	-15V
④	V <sub>0</sub>
⑤	I -
⑥	I +



Bottom View



PCB mounting hole layout

← Positive current flow direction

Part Number	THL3A	THL4A	THL5A	THL6A	THL7.5A	THL10A	THL12.5A	THL15A	THL18.5A	THL20A	THL25A	THL30A : THL50A
d(mm)	0.6	0.8	0.8	0.8	1.0	1.2	1.2	1.4	1.4	1.6	1.6	1.6
e(mm)	1.2	1.2	1.2	1.2	1.6	1.8	1.8	2.2	2.2	2.4	2.4	2.4