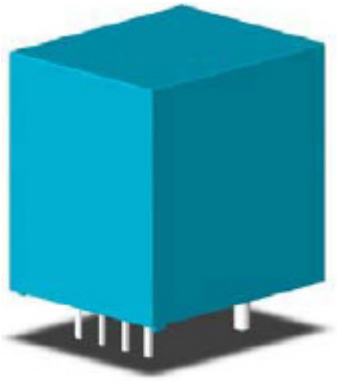
Current Transducer

Hall Effect



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 (2.5 KV ac).
- 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.

Specification Table

Parameter	Symbol	Unit	TH3A thru TH30A
Nominal Input Current	I_{fn}	A dc	3 to 30
Linear Range	I_{fs}		±9 to ±150 = 3 × I_{fn}
Nominal Output Voltage	V_{hn}	V	4 V ±1% at $I_f = I_{fn}$ (R_L = 10 KΩ)
Offset Voltage	V_{os}	mV	Within ±40 mV at I_f = 0, T_a = 25°C
Output Resistance	R_{OUT}	Ω	< 100 Ω
Hysteresis Error	V_{oh}	mV	Within ±15 mV at $I_f = I_{fn} \rightarrow 0$
Supply Voltage	V_{CC} / V_{EE}	V	±15 V ±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	μs	5 μs Max. at d I_f / dt = I_{fn} / μs
Frequency Bandwidth (-3 dB)	f_{BW}	Hz	DC to 50 KHz
Thermal Drift of Output	-	% / °C	Within ±0.1% / °C at I_{fn}
Thermal Drift of Zero Current Offset		mV / °C	Within ±1.5 mV / °C at I_{fn}

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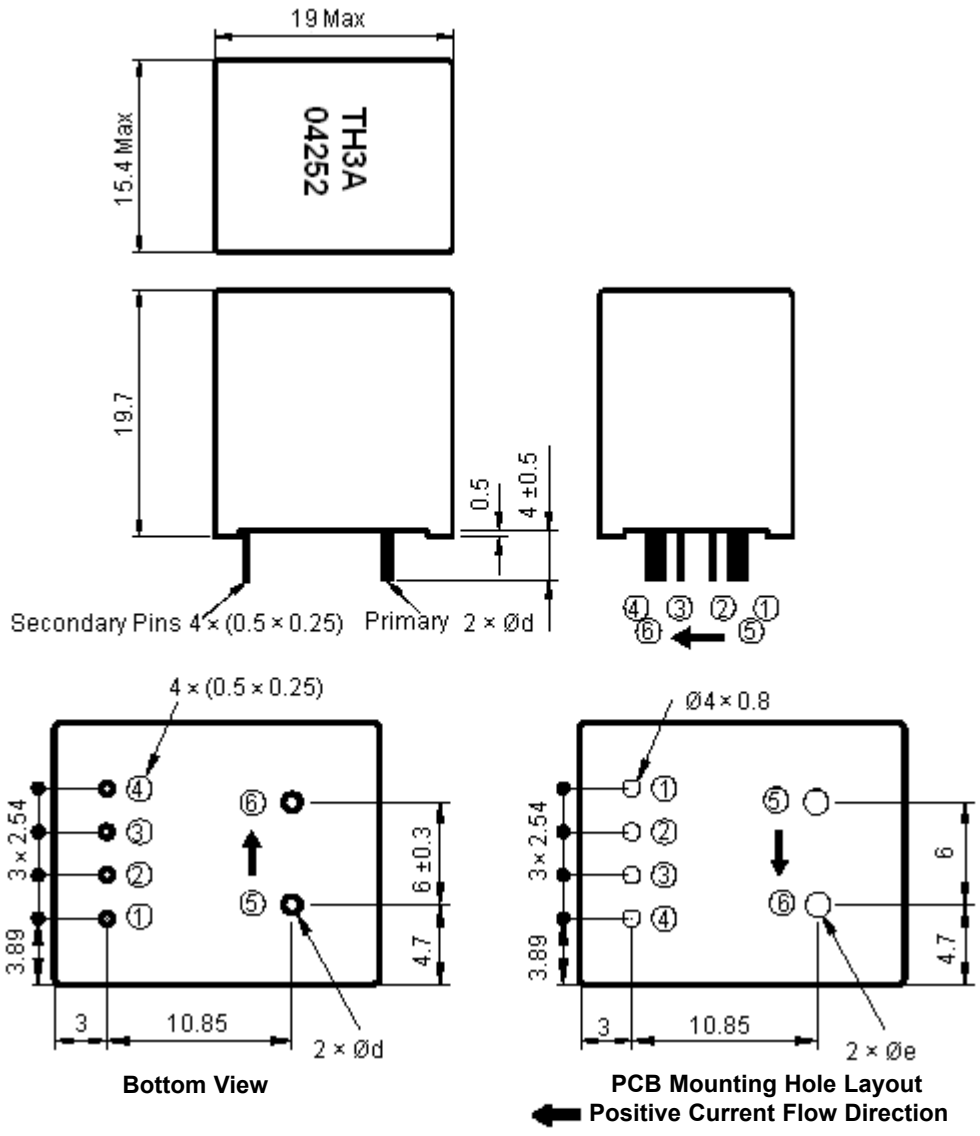
Specification Table

Parameter	Symbol	Unit	TH3A thru TH30A
Dielectric Strength	-	V	2.5 KV ac × 60 s
Isolation Resistance at 1,000 V dc	R_{IS}	MΩ	> 1,000 MΩ
Operating Temperature	T_a	°C	-15°C to 80°C
Storage Temperature	T_s		-20°C to 85°C
Mass	W	g	10 g

Appearance, Dimensions and PIN Identification for TH3A thru TH30A

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



Bottom View

PCB Mounting Hole Layout

Positive Current Flow Direction

Dimensions : Millimetres

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Hall Effect

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

Dimensions Table

Part Number	TH3A	TH5A	TH10A	TH15A	TH20A	TH30A
d (mm)	0.6	0.8	1.2	1.4	1.6	1.6
e (mm)	1.2	1.2	1.8	2.2	2.4	2.4

Dimensions : Millimetres

Part Number Table

Description	Part Number
Current Transducer	TH3A
Current Transducer	TH5A
Current Transducer	TH10A
Current Transducer	TH15A
Current Transducer	TH20A
Current Transducer	TH30A