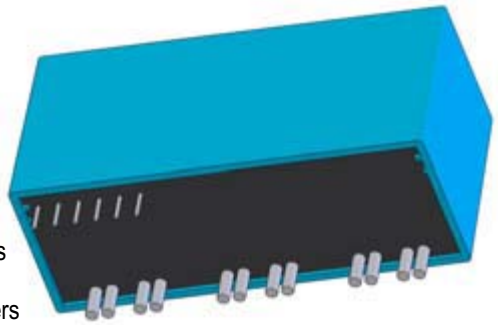
Topstek Current Transducer THP5A .. THP50A

THP 5A~50A

Features

- ♦ Highly reliable Hall Effect device
- ♦ Compact and light weight. Three 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

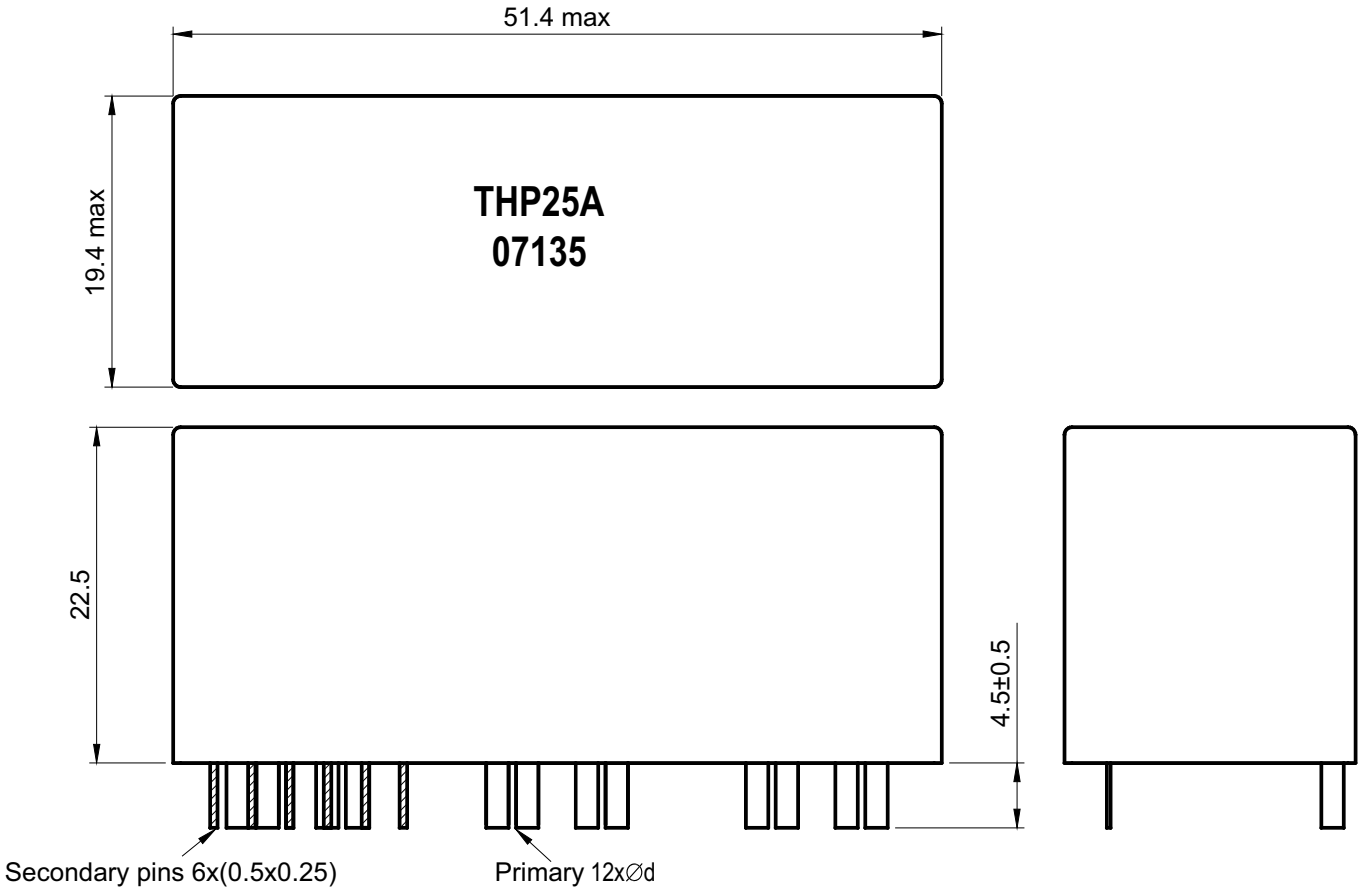
Parameter	Symbol	Unit	3A	5A	7.5A	10A	15A	18.5A	20A	25A	30A	37.5A	50A
Nominal Input Current	I_{fn}	A DC	3	5	7.5	10	15	18.5	20	25	30	37.5	50
Linear Range	I_{fs}	A DC	±9	±15	±22.5	±30	±45	±56	±60	±75	±90	±113	±150
Primary Wire Diameter	φd	mm	0.6	0.8	1.0	1.2	1.6	1.6	1.6	1.6	1.6	1.6x2	1.6x2
Nominal Output Voltage	V_{hn}	V	4 V±1% @ 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(50Ωnominal)										
Hysteresis Error	V_{oh}	mV	Within ±35 mV @ I_f=I_{fn}→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	μsec	3 μsec max. @ $d I_f / dt = I_{fn}$ / μsec										
Response Performance	-	%	10% Overshoot max.										
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	< ±2 mV/°C										
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	26 g										

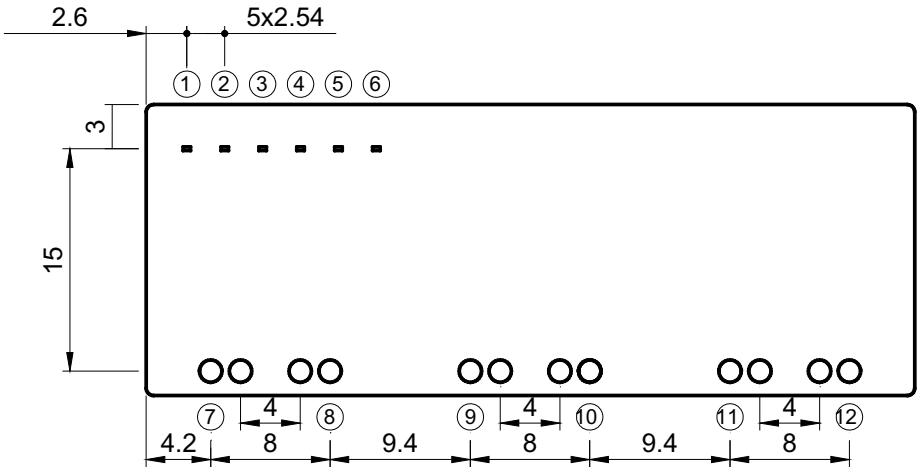
Appearance, dimensions and pin identification

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

For models I_{fn} >30A primary wire=1.6φx2

For models I_{fn} <=30A primary wire=0.6φ~1.6φx1





①	Gnd
②	−15V
③	+15V
④	VOUT1
⑤	VOUT2
⑥	VOUT3
⑦	I1+
⑧	I1−
⑨	I2+
⑩	I2−
⑪	I3+
⑫	I3−