

Topstek Current Transducer THD3A .. THD51.6A

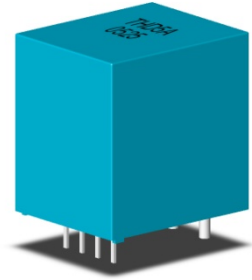
THD 3A~51.6A

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	THD17.5A	THD19A	THD27A	THD27.8A	THD30.3A	THD33.4A	THD34.1A	THD51.6A
Rated Current	I_{fn}	A DC	17.5	19.0	27.0	27.8	30.3	33.4	34.1	51.6
Saturation Current	I_{fsat}	A DC	±44	±48	±68	±70	±76	±84	±86	±129
Linear Range	I_{fs}	A DC	0~±44	0~±48	0~±68	0~±70	0~±76	0~±84	0~±86	0~±129
Continuous DC Current	I_{fc}	A DC	±24	±24	±36	±36	±36	±36	±36	±36
Primary Coil Size	d	mm	1.3φ	1.3φ	1.6φ	1.6φ	1.6φ	1.6φ	1.6φ	1.6φ
Primary Coil Turns	N	T	2	2	1	1	1	1	1	1
Nominal Output Voltage	V_{fn}	V	2 V±1.5 % @ $I_f=I_{fn}$ ($R_L=10k\Omega$)							
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 ±40mV @ $I_f=I_{fn} \rightarrow 0$							
Supply Voltage	V_{CC}/V_{EE}	V	+(7.5 -0.1/+0.5)V, -10V±1V							
Linearity	ρ	%	Within ±1% of I_{fn}							
Consumption Current	I_{CC}	mA	Within 12mA							
Response Time	t_{CC}	μsec	10 μsec max. @ $d I_f / dt = I_{fn} / \mu sec$							
Overshoot Response	-	%	5% max. @ $d I_f / dt = I_{fn} / \mu sec$							
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 ±3 mV/°C @ I_{fn}							
Dielectric Strength	-	V	AC2.5KV (50/60Hz) X 60 sec							
Isolation Resistance @ 500 VDC	R_{IS}	M Ω	>500 M Ω							
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							

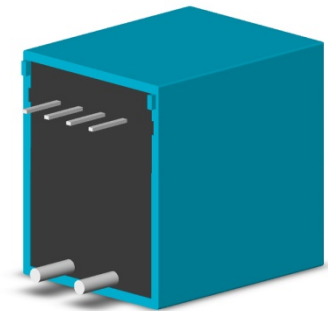
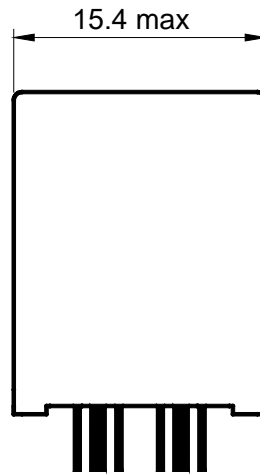
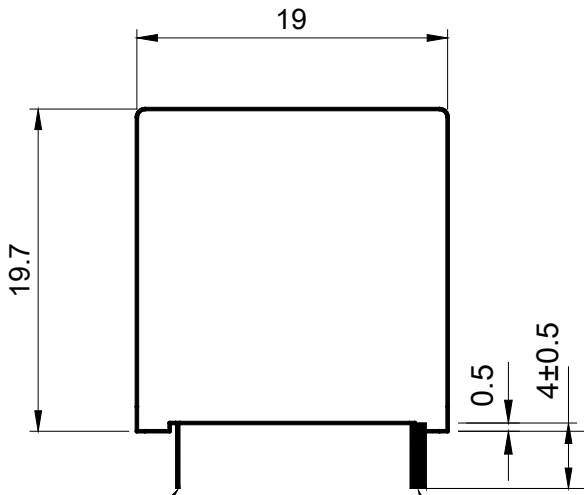
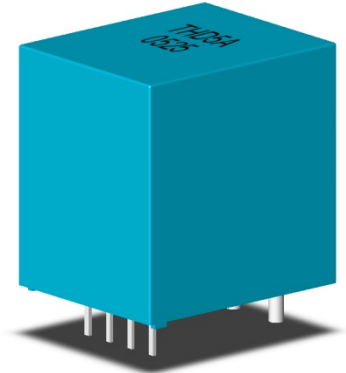
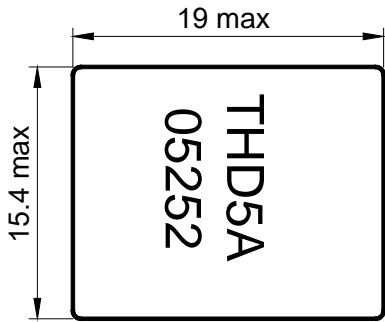


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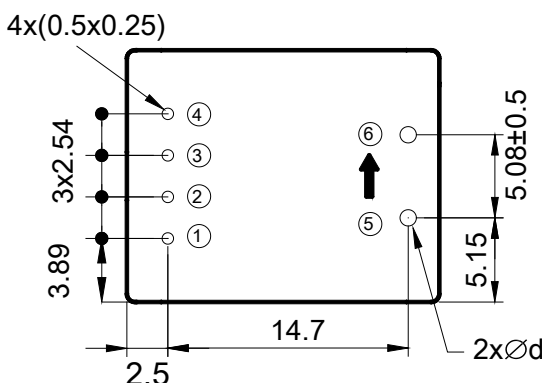
Appearance, dimensions and pin identification

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

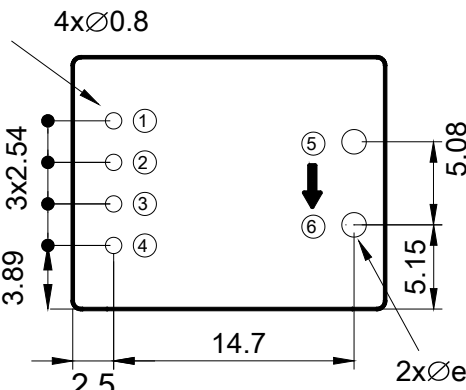
➔ Positive current flow direction



Secondary pins 4x(0.5x0.25) Primary 2xØd



Bottom View



PCB mounting hole layout

Pin Assignment	
①	-10V
②	0V
③	+7.5V
④	Vout
⑤	I +
⑥	I -

Part Number	THD3A	THD4A	THD5A	THD6A	THD7.5A	THD10A	THD12.5A	THD15A	THD18.5A	THD20A	THD25A	THD30A
d(mm)	0.6	0.8	0.8	0.8	1.0	1.2	1.2	1.3	1.3	1.3	1.6	1.6
e(mm)	1.2	1.2	1.2	1.2	1.6	1.8	1.8	2.0	2.0	2.0	2.4	2.4

Part Number	THD17.5A	THD19A	THD27A	THD27.8A	THD30.3A	THD33.4A	THD34.1A	THD51.6A
d(mm)	1.3	1.3	1.6	1.6	1.6	1.6	1.6	1.6
e(mm)	2.0	2.0	2.4	2.4	2.4	2.4	2.4	2.4

