

Topstek Current Transducer TKP3A .. TKP30A

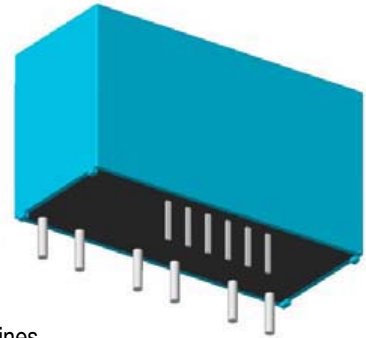
TKP 3A~30A

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 (30 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



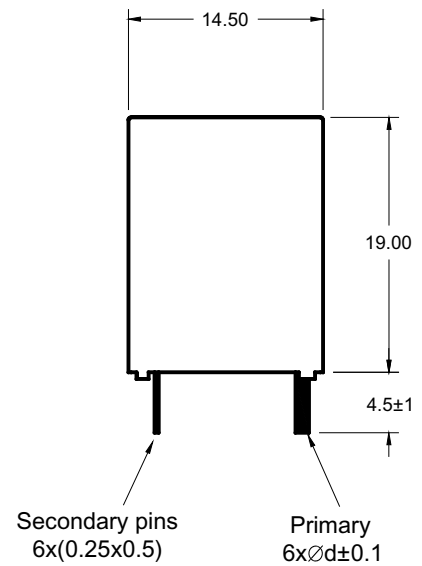
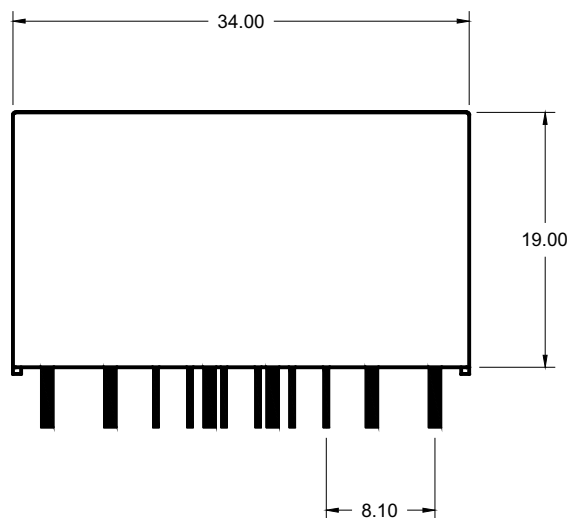
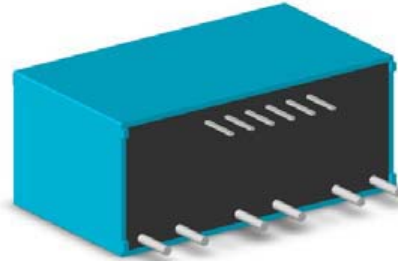
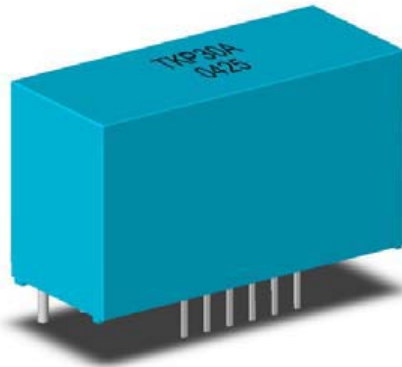
Specifications

Parameter	Symbol	Unit	TKP3A .. TKP30A
Nominal Input Current	I_{fn}	A DC	3 .. 30
Linear Range	I_{fs}	A DC	$\pm 9 \dots \pm 90 = 3 \times I_{fn}$
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 ± 40 mV @ $I_f = 0$, $T_a = 25^\circ\text{C}$
Output Resistance	R_{OUT}	Ω	$< 100\Omega$
Hysteresis Error	V_{oh}	mV	Within ± 15 mV @ $I_f = I_{fn} \rightarrow 0$
Supply Voltage	V_{CC}/V_{EE}	V	$\pm 15V \pm 5\%$
Linearity	ρ	%	Within $\pm 1\%$ of I_{fn}
Consumption Current	I_{CC}	mA	± 30 mA nominal, ± 45 mA max
Response Time (90% V_{hn})	T_r	μsec	5 μsec 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 ± 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°C to 80°C
Storage Temperature	T_s	$^\circ\text{C}$	-20°C to 85°C
Mass	W	g	20 g

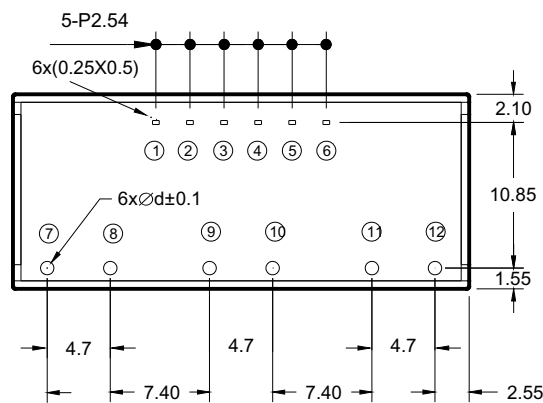
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Appearance, dimensions and pin identification

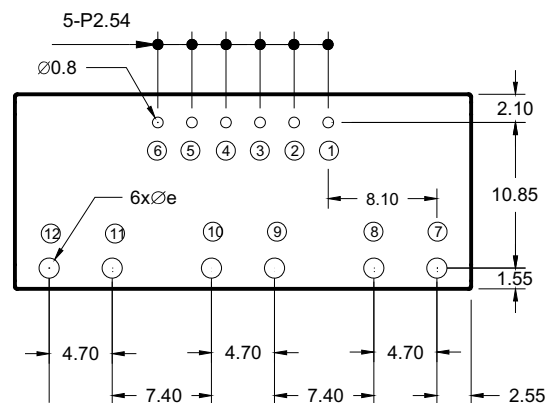
All dimensions in mm ± 0.2 , holes -0 , $+0.2$ except otherwise noted.



Pin Assignment	
①	+15V
②	-15V
③	Output 1
④	Output 2
⑤	Output 3
⑥	GND
⑦	+ Input 1
⑧	- Input 1
⑨	+ Input 2
⑩	- Input 2
⑪	+ Input 3
⑫	- Input 3



Bottom View



PCB mounting hole layout

Primary Current Input Pin Diameter	1-3A	4-8A	9-15A	16-40A
d(mm)	0.6	0.8	1.2	1.4
e(mm)	1.2	1.4	1.8	2.0