

# Topstek Current Transducer TQH5A .. TQH50A

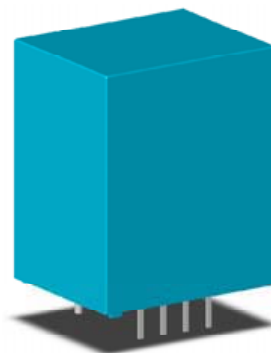
## TQH5A~50A

### Features

- ◆ Highly reliable Closed Loop Hall Effect device
- ◆ Compact and light weight
- ◆ Fast response time
- ◆ Excellent linearity of the output voltage over a wide input range
- ◆ Excellent frequency response (> 100 kHz)
- ◆ Low power consumption at quiescent state (10 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 encapsulant, 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 eg. electric trains
- ◆ Other automatic control systems



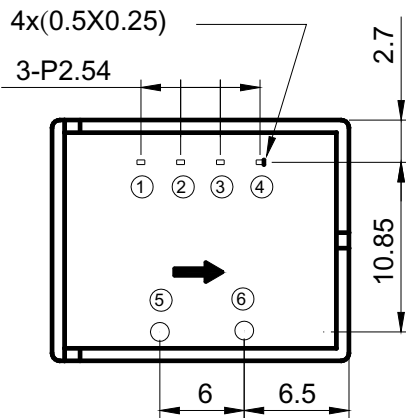
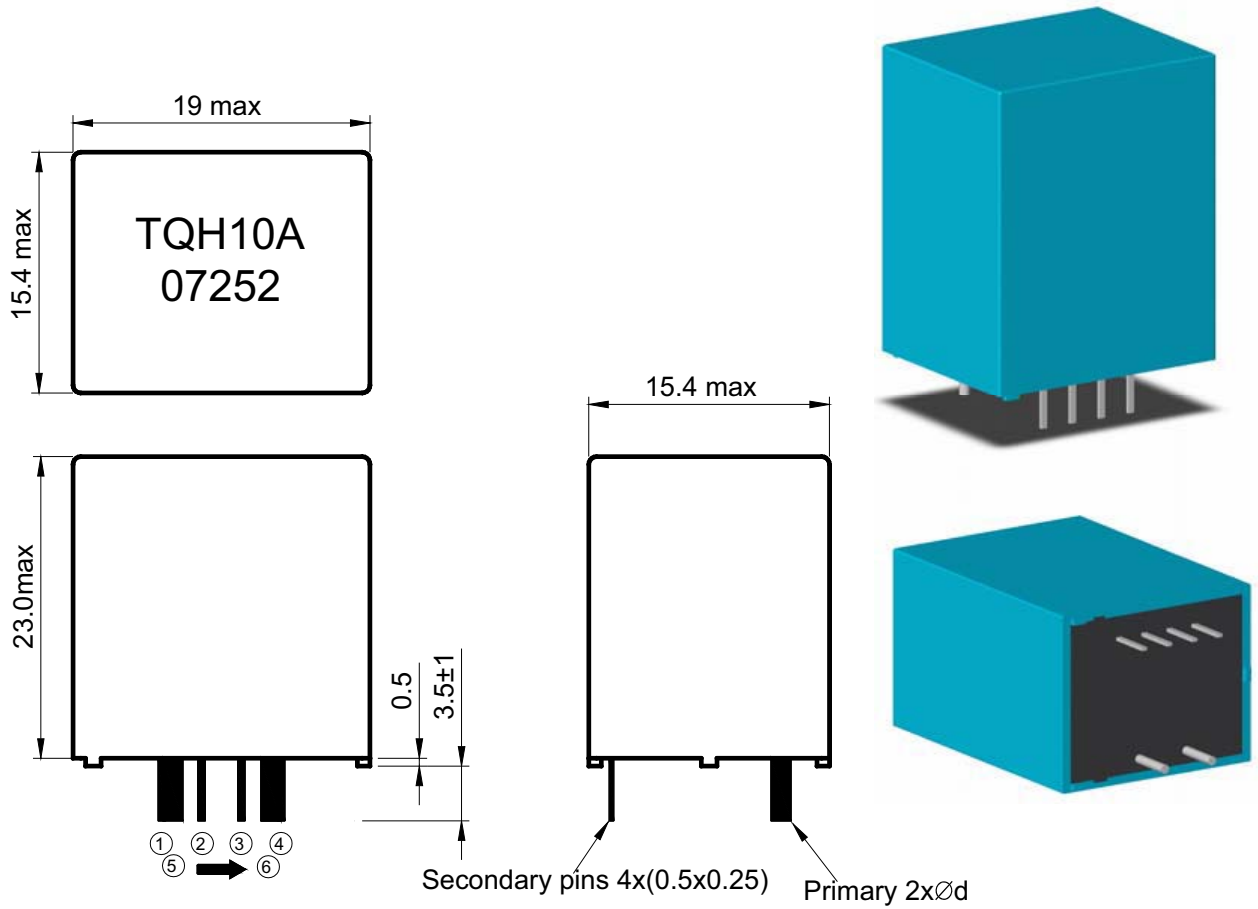
### Specifications

Parameter	Symbol	Unit	TQH5A	TQH7.5A	TQH10A	TQH15A	TQH25A	TQH37.5A	TQH50A
Nominal Input Current	$I_{fn}$	A DC	±5	±7.5	±10	±15	±25	±37.5	±50
Linear Range	$I_{fs}$	A DC	±15	±22.5	±30	±45	±75	±113	±140
Conversion Ratio	$K_N$	-	6:1300	4:1300	3:1300	2:1300	1:1300	1:1300	1:1600
Consumption Current@ $I_f=I_{fn}$	$I_{CC}$	mA	35	35	35	35	31	41	43
Sec. Resistance@25°C	$R_{Cmax}$	Ω	53	53	53	53	53	53	80
Sec. Resistance@80°C	$R_{Cmax}$	Ω	55	55	55	55	55	55	83
Maximum Load Resistance	$R_{Mmax}$	Ω	<b>118</b>	<b>118</b>	<b>118</b>	<b>118</b>	<b>153</b>	<b>84</b>	<b>57</b>
Minimum Load Resistance	$R_{Mmin}$	Ω	<b>45</b>	<b>45</b>	<b>45</b>	<b>45</b>	<b>45</b>	<b>45</b>	<b>20</b>
Nominal Output Current	$V_{hn}$	mA	±23.08	±23.08	±23.08	±23.08	±19.23	±28.85	±31.25
Supply Voltage Range	$V_{CC}/V_{EE}$	V	±15V ±5%						
Offset Current	$I_{os}$	mA	Within ±0.2 mA @ $I_p=0, T_a=25°C$						
Hysteresis Error	$I_{oh}$	mA	Within ±0.2 mA @ $I_f=I_{fn} \rightarrow 0$						
Linearity	$\rho$	%	Within ±0.5% of $I_{fn}$						
Response Time (90% $V_{hn}$ )	$T_r$	μsec	3 μsec max. @ $d I_f / dt = I_{pn} / \mu sec$						
Frequency Bandwidth (-3dB)	$f_{BW}$	Hz	DC to 100kHz						
Thermal Drift of Output	-	%/°C	Within ±0.02 %/°C @ $I_{fn}$						
Thermal Drift of Zero Current Offset	-	mA/°C	Within ±0.4mA 0°C~80°C						
Dielectric Strength	-	V	AC2.5KV X 60 sec						
Isolation Resistance @ 1000 VDC	$R_{IS}$	MΩ	>1000 MΩ						
Operating Temperature	$T_a$	°C	-40°C to 80°C						
Storage Temperature	$T_s$	°C	-40°C to 85°C						
Mass	W	g	<14 g						

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## Appearance, dimensions and pin identification

All dimensions in mm  $\pm 0.1$ , holes  $-0, +0.2$  except otherwise noted.



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

Bottom View

Nominal Primary Current	3--4A	5--7A	7.5--12A	12.5--25A	30--37.5A	40--50A
d (mm)	0.6	0.8	1.0	1.3	1.4	1.6