

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



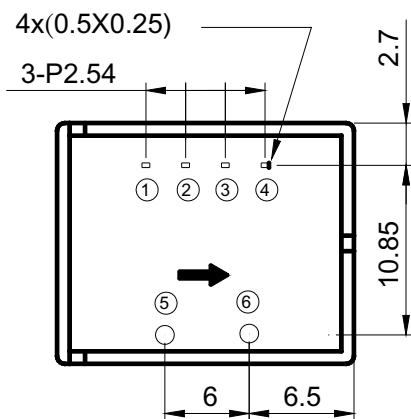
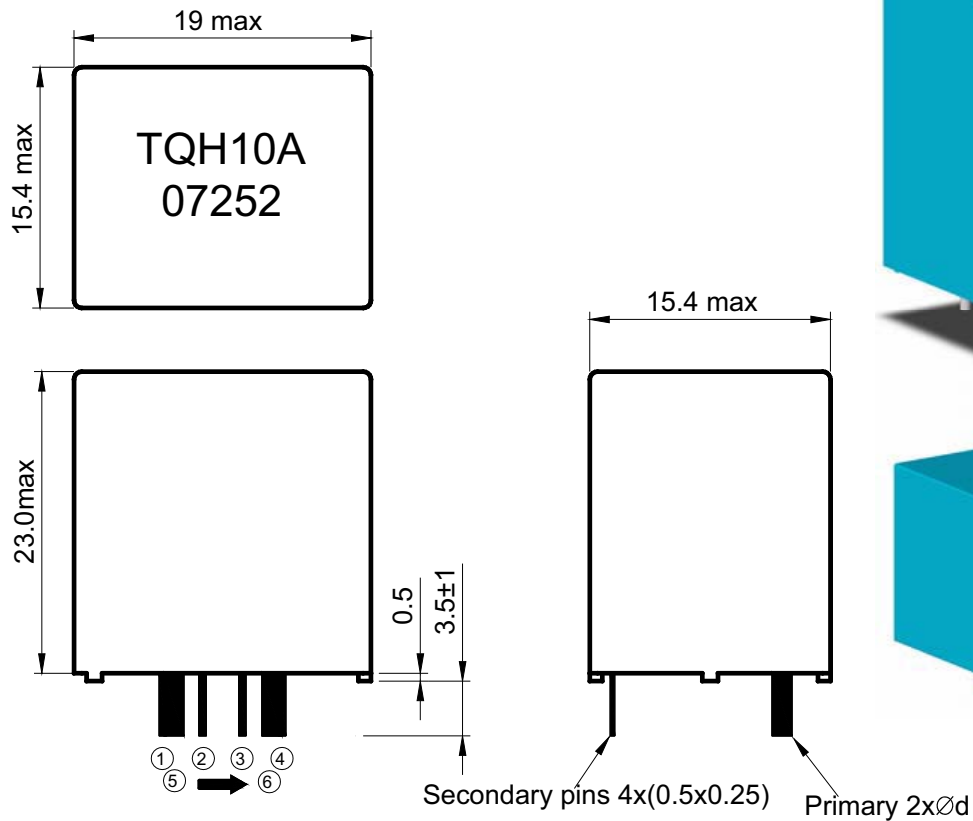
Specifications

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	118	118	118	118	153	84	57
Minimum Load Resistance	R_{Mmin}	Ω	45	45	45	45	45	45	20
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 @ $I_p=0$, $T_a=25^\circ\text{C}$						
Hysteresis Error	I_{oh}	mA	Within ±0.2 mA @ $I_f=I_{fn} \rightarrow 0$						
Linearity	ρ	%	Within ±0.5% of I_{fn}						
Response Time (90% V_{hn})	T_r	μsec	3 μsec max. @ $d I_f / dt = I_{pn} / \mu\text{sec}$						
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 ± 0.1 , holes -0 , $+0.2$ except otherwise noted.



Pin Assignment	
①	-15V
②	0V
③	+15V
④	I _{OUT}
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