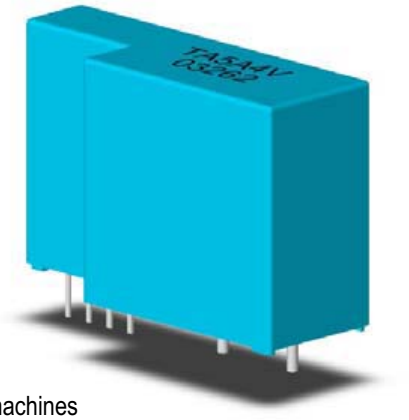
Topstek Current Transducer TA5A4V .. TA50A4V

TA 5A~50A



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 (9 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

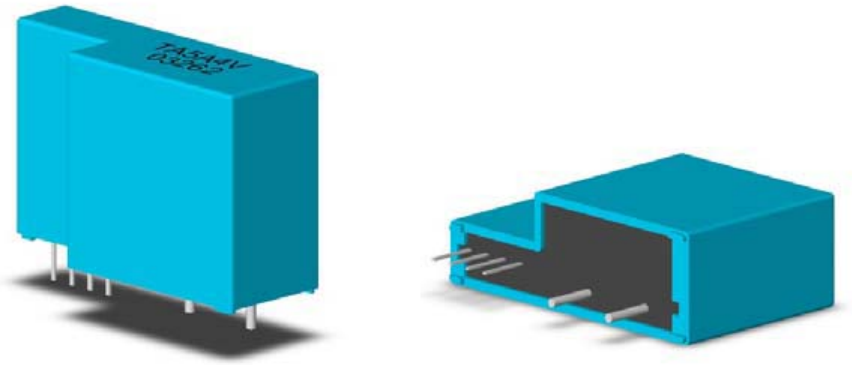
- ♦ UPS systems
- ♦ Industrial robots
- ♦ NC tooling machines
- ♦ Elevator controllers
- ♦ Process control devices
- ♦ AC and DC servo systems
- ♦ Motor speed controller
- ♦ Electrical vehicle controllers
- ♦ Inverter-controlled welding machines
- ♦ General and special purpose inverters
- ♦ Power supply for laser processing machines
- ♦ Controller for traction equipment e.g. electric trains
- ♦ Other automatic control systems

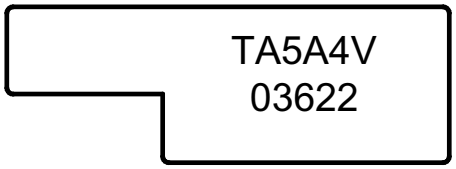
Specifications

Parameter	Symbol	Unit	TA 5A 4V	TA 7.5A 4V	TA 10A 4V	TA 12.5A 4V	TA 15A 4V	TA 18.5A 4V	TA 20A 4V	TA 25A 4V	TA 37.5A 4V	TA 50A 4V
Nominal Input Current	I_{fn}	A DC	5	7.5	10	12.5	15	18.5	20	25	37.5	50
Linear Range	I_{fs}	A DC	±15	±23	±30	±38	±45	±56	±60	±75	±112	±150
Diameter of Primary Coil	d	mm	1	1	1.2	1.4	1.4	1.4	1.4	1.6	1.6x2.5	1.6x2.5
Turns of Primary Coil	T	T	5	3	2	2	1	1	1	1	1	1
Ampere-Turn of Primary Coil	AT	AT	25	22.5	20	25	15	18.5	20	25	37.5	50
Nominal Output Voltage	V_{hn}	V	4 V±1% at 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 ±15 mV @ I_f=I_{fn}→0									
Supply Voltage	V_{CC}/V_{EE}	V	±15V ±5%									
Linearity (Within ±I_{fn})	ρ	%	Within ±1% of I_{fn}									
Consumption Current	I_{CC}	mA	±9 mA nominal									
Response Time (90%V_{hn})	T_r	μsec	13 μsec max. @ $d I_f / dt$ = I_{fn} / μsec									
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 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	14 g									

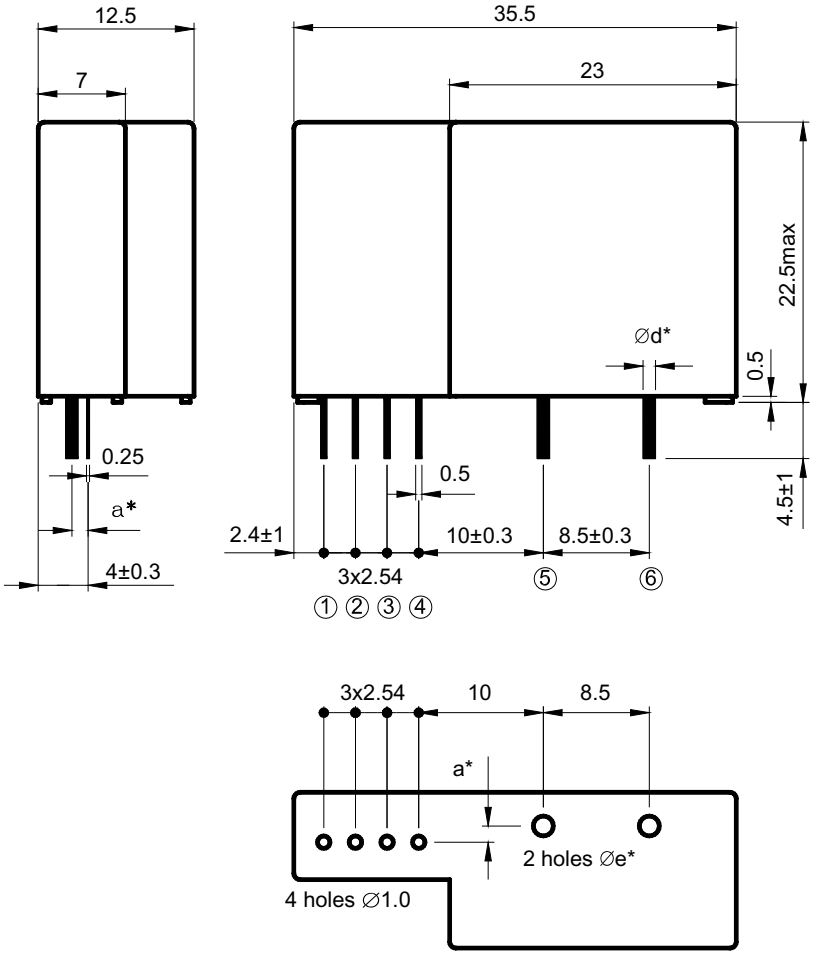
Appearance, dimensions and pin identification for 5A to 25A models

All dimensions in mm ±0.1, holes –0, +0.2 except otherwise noted





Model number and date code marking



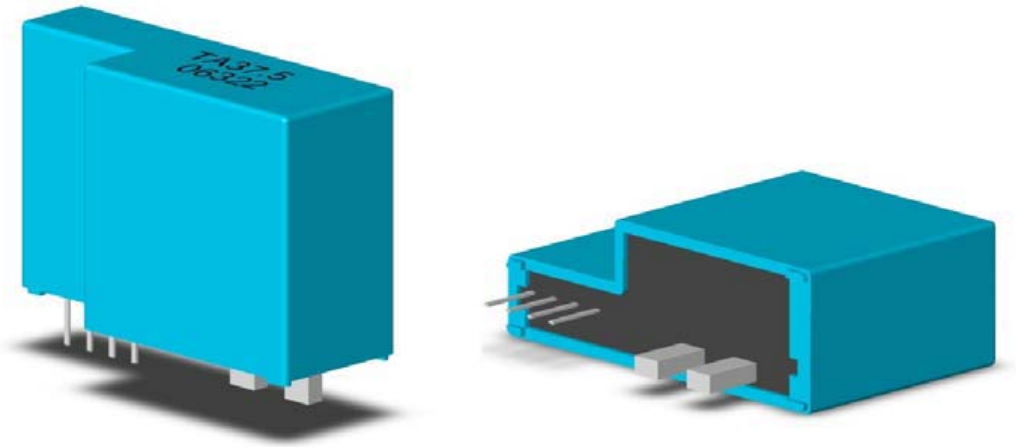
5A to 25A PCB mounting hole layout

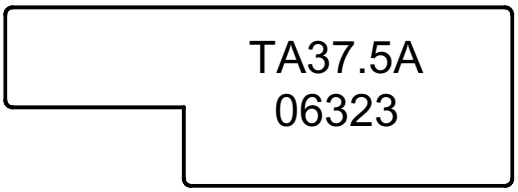
Pin Assignment	
①	+15V
②	-15V
③	VOUT
④	0V
⑤	I+
⑥	I-

Part Number	a* (mm)	d* (mm)	e* (mm)
TA5A4V	1.3	ø1.0	ø1.6
TA7.5A4V	1.3	ø1.0	ø1.6
TA10A4V	1.4	ø1.2	ø1.8
TA12.5A4V	1.5	ø1.4	ø2.0
TA15A4V	1.5	ø1.4	ø2.0
TA18.5A4V	1.5	ø1.4	ø2.0
TA20A4V	1.5	ø1.4	ø2.0
TA25A4V	1.6	ø1.6	ø2.2

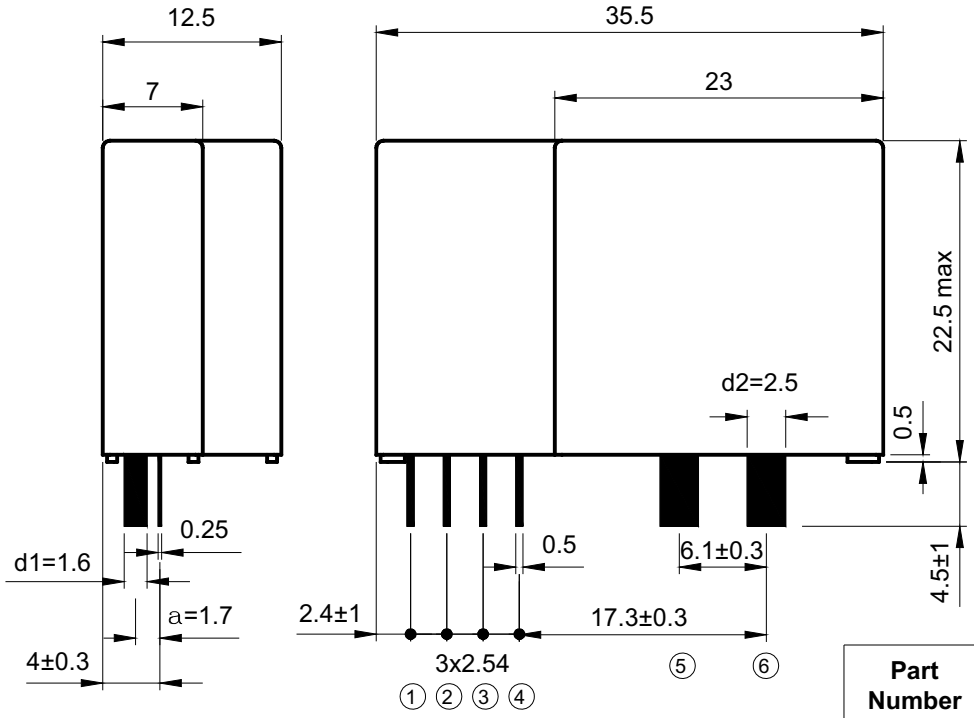
Appearance, dimensions and pin identification for 37.5A to 50A models

All dimensions in mm ±0.1, holes –0, +0.2 except otherwise noted



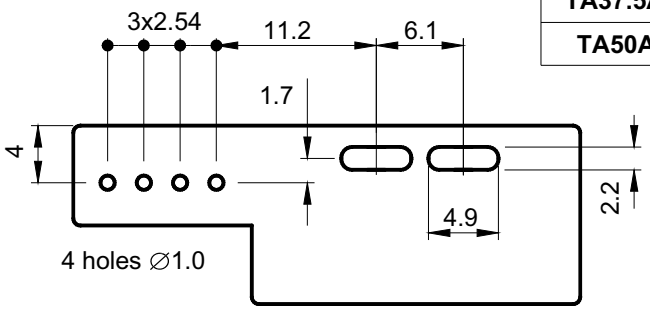


Model number and date code marking



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

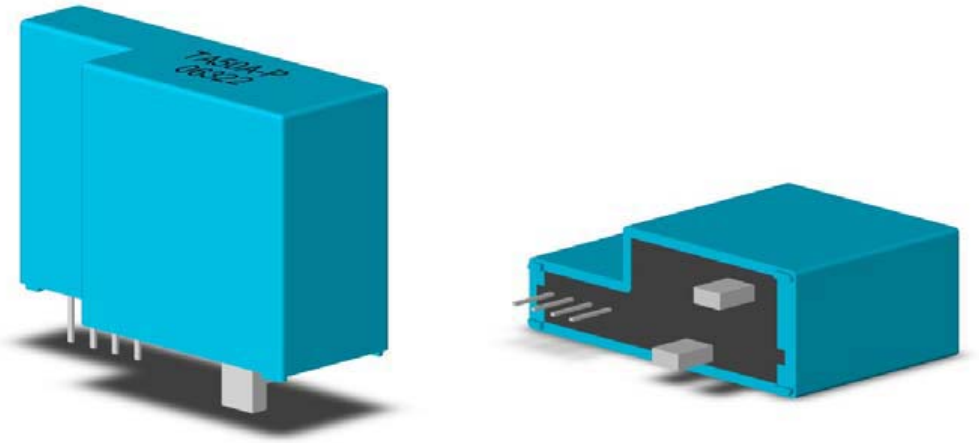
Part Number	a* (mm)	d1xd2 (mm)	hole (mm)
TA37.5A	1.7	▭1.6x2.5	▭2.2x4.9
TA50A	1.7	▭1.6x2.5	▭2.2x4.9

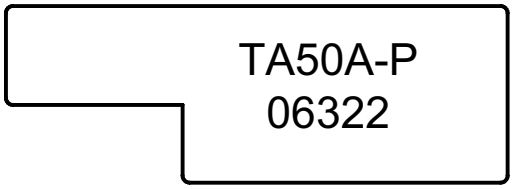


TA37.5A..TA50A PCB mounting hole layout

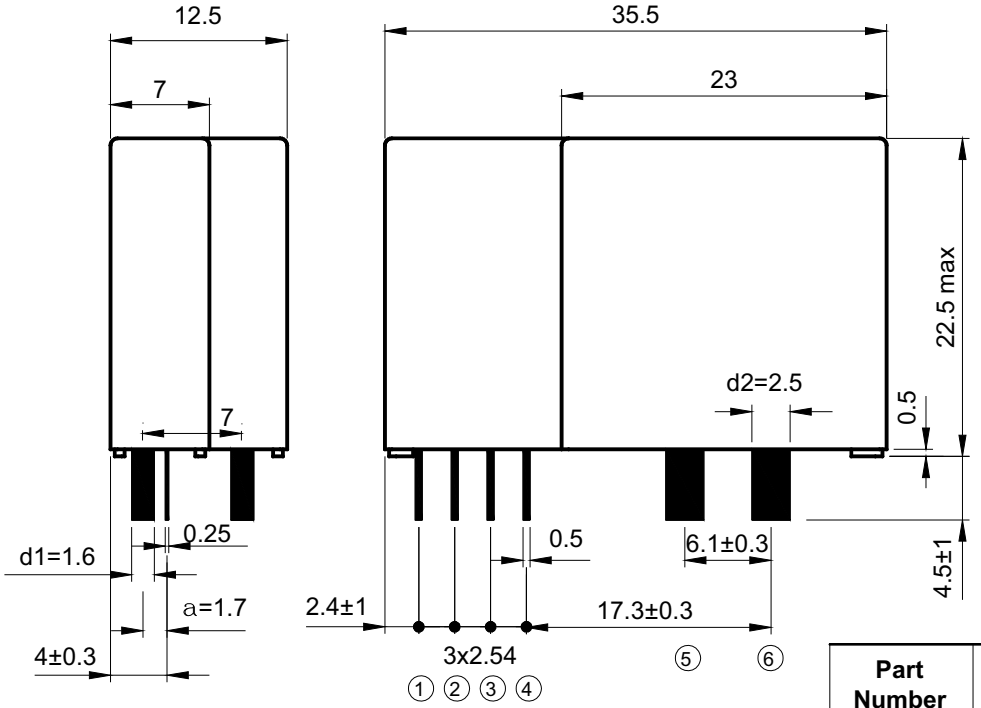
Appearance, dimensions and pin identification for TA37.5A-P .. TA50A-P models

All dimensions in mm ±0.1, holes –0, +0.2 except otherwise noted



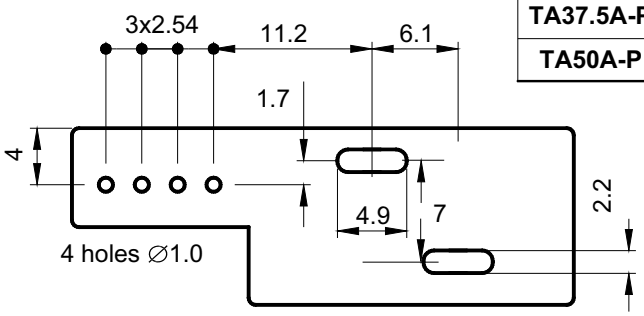


Model number and date code marking



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

Part Number	a* (mm)	d1xd2 (mm)	hole (mm)
TA37.5A-P	1.7	▭1.6x2.5	▭2.2x4.9
TA50A-P	1.7	▭1.6x2.5	▭2.2x4.9



TA37.5A-P..TA50A-P PCB mounting hole layout