

MINIATURE VOLTAGE TRANSFORMERS

Current Type Voltage Transformers

The YUANXING TV series of miniature voltage transformers are designed for applications where AC voltage signals must be transformed accurately into a lower voltage signal appropriate for micro-processor based circuits.



TV3X series current-type voltage transformer is a kind of mA current transformer, which turn ratio between primary and secondary is similar to 1:1. a limiting resistor is necessary to be in series with primary winding. this series is popular to a limited internal space of devices.

A TV model can be designed and manufactured to meet the specific design challenges of the client's specific application. The following models are only a small sampling of the many different products which have been and are currently being manufactured.

FEATURES

- Low cost
- More than 10 standard sizes
- PCB mounting pattern

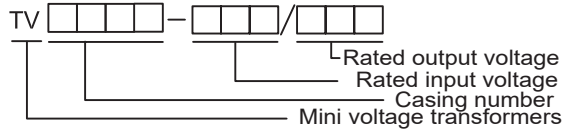
APPLICATIONS

- For applications that require a limited internal space of devices
- Applications would include voltage, power, and energy monitoring devices

SPECIFICATIONS

- Exterior Material: PBT Resin UL flame retardant rating 94-V0
- Interior Insulation: Epoxy Encapsulated
- Isolation Voltage: 2500 Vrms for 1 minute
- Dielectric Resistance: 1000M Ohms @500 Vdc
- Surge Withstand: 5000V (1.2/50 μ s standard shock wave) optional
- Accuracy Class: as defined in IEC 60044-1 Part 1 Current Transformers Class 0.1, 0.2; the linearity class 0.1L
- Operating Temperature: -40 to +85°C
- Frequency: 50 to 400 Hz
- RoHS compliant

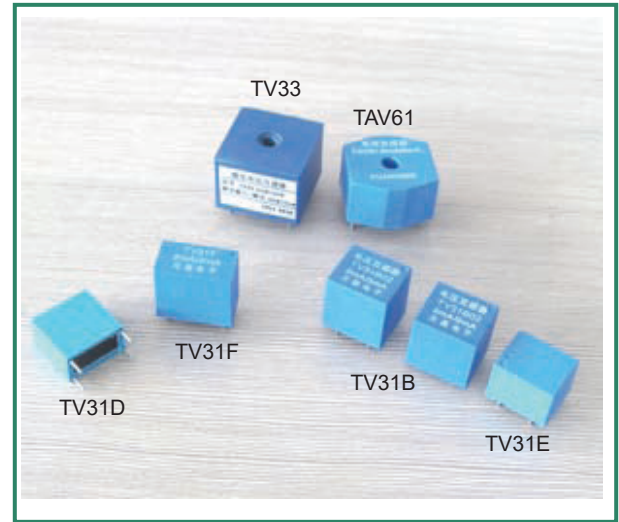
PART NUMBERS



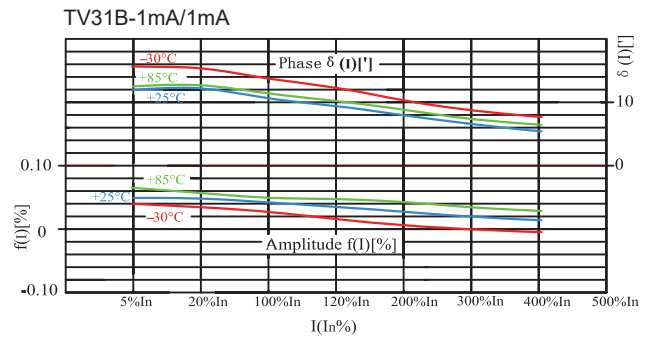
PERFORMANCES

Model	Rated Input/Output	Frequency (Hz)	Second burden(Ohms)	Linearity Class	Outline L-W-H(mm)
TV31B	Input/output: 1mA/1mA 2mA/2mA	50 to 400	≤500	0.1,0.2	19-17.0-18.3
TV31D	Input/output: 2mA/2mA	50 to 400	≤150	0.1,0.2	19.5-10.5-18.0
TV31E	Input/output: 2mA/2mA	50 to 400	≤150	0.1,0.2	18.8-16.2-13.4
TV31F	Input/output: 2mA/2mA	50 to 400	≤200	0.1,0.2	22.0-12.0-19.0
TV33	Input/output: 3mA/0.75mA	50 to 400	≤1k	0.1,0.2	28.0-20.0-28.0

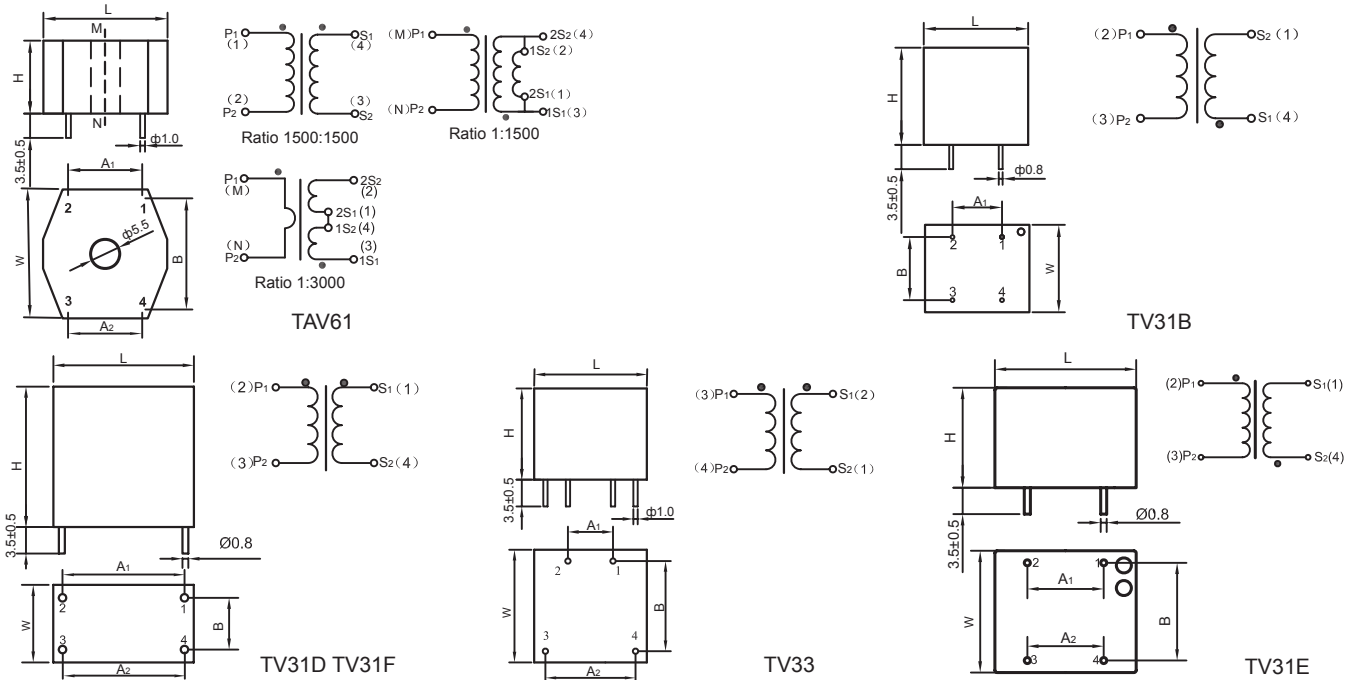
Model	Application	Rated Input/Output	Second burden(Ohms)	Accuracy Class
TAV61-6mA/6mA	Voltage Transformer (Ratio 1500:1500)	6mA/ 6mA	400	0.2
	Current Transformer (Ratio 1:1500)	5A/ 3.33mA	200	0.2
	Current Transformer (Ratio 1:3000)	5A/ 1.66mA	200	0.2
	Current Transformer (Ratio 1:3000)	20A/ 6.66mA	200	0.2



Typical Temperature Dependence of Phase and Amplitude Errors



OUTLINE DRAWINGS



OUTLINE DIMENSIONS

Unit:mm (inch)

Model	L	W	H	A1	A2	B
TV31B	19.0(0.748)	17.0(0.669)	18.3(0.720)	10.16(0.400)	10.16(0.400)	13.0(0.512)
TAV61	26.5(1.043)	27.6(1.087)	17.0(0.670)	15.24(0.600)	15.24(0.600)	22.86(0.900)
TV33	28.0(1.102)	28.0(1.102)	20.0(0.787)	10.0(0.394)	20.0(0.787)	20.0(0.787)
TV31D	19.5(0.768)	10.5(0.413)	18.0(0.709)	16.5(0.650)	16.5(0.650)	7.3(0.283)
TV31F	22.0(0.866)	12.0(0.472)	19.0(0.748)	16.5(0.650)	16.5(0.650)	7.2(0.283)
TV31E	18.8(0.740)	16.2(0.638)	13.3(0.524)	10.16(0.400)	10.16(0.400)	13.0(0.512)

APPLICATION METHOD

The TV31 series current type voltage transformer is actually a current transformer with ratio 1:1. For application, the line voltage should not be directly put on to the transformer, it needs to connect a limiting resistor R' in series with the transformer to transfer the voltage signal to mA current signal (recommended 2mA/2mA application).

For example: The measured voltage is 380Vac, then the R' should be 190K ohms to limit the primary current of TV31 to 2mA.

The secondary mA current output can be transferred to voltage signal by an operational amplifier I/V conversion circuit as figure 1. The advantage of this application is almost zero load state of TV31, with high accuracy and good linearity.

Application figure 2, directly connect a sampling resistor in parallel with TV31 secondary output to get the voltage signal. There is a maximum sampling resistor value for different current type voltage transformer, please note for application to avoid the saturation of transformer and the distortion of output wave.

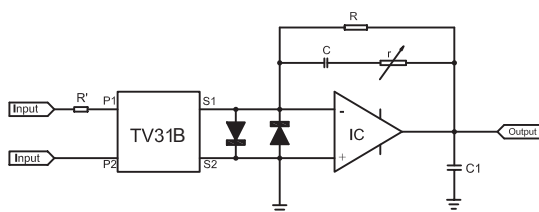


Fig. 1.

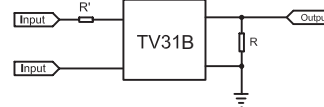


Fig. 2.

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