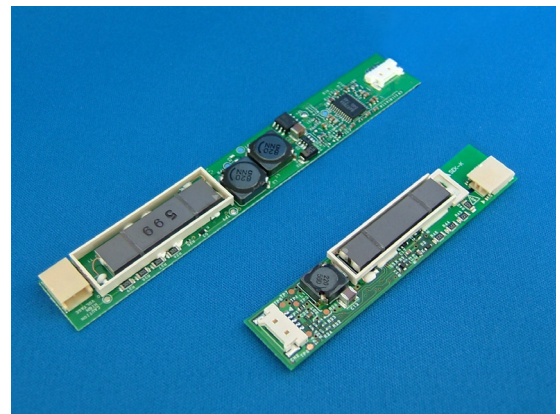
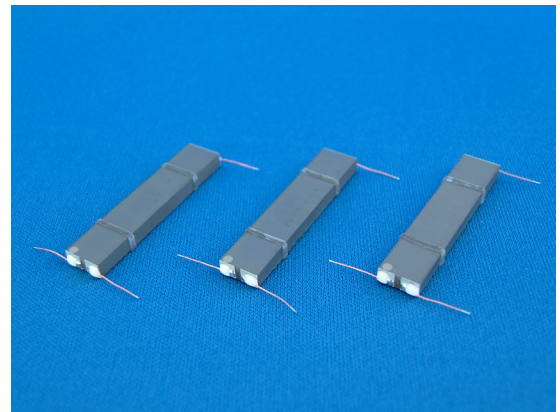


Piezoelectric Transformer, Inverter Module

Multi-layered Rosen Type Transformer

Piezoelectric Transformers and Inverters for CCFL and other high voltage applications

Nihon Ceratec Co.Ltd. introduces its line of high performance multilayer piezoelectric transformers and inverters. Our piezoelectric transformers feature high step-up ratios, very low profile and efficiencies exceeding over 95%. Due to the use of non-magnetic materials in the manufacture of piezoelectric transformers, the EMI signature of the inverters is significantly reduced adding an additional advantage to this technology when compared to conventional magnetic inverters. Applications include LCD backlighting but are extended to other high voltage applications such as DC/DC high voltage converters. Nihon Ceratec offers both separated piezoelectric transformers as well as specifically customized solutions to meet the demands of our customers applications.



Specifications

	NA2406	T8645	NA3207
Output Power	1W	3W	5W
Output Current	3mA	5mA	6mA
Efficiency	90% min.	90% min.	90% min.
Resonant Freq.	133kHz	67kHz	49kHz
Load Condition	100k Ω	110k Ω	130k Ω
Dimension	24 × 6 × 0.7mm	48 × 7 × 2mm	32 × 6.7 × 2.6mm

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<http://www.ceratech.co.jp/> E-mail : piezo-electric@ceratech.co.jp

Messrs

Specification for Piezoelectric Transformer

Model Name : Piezoelectric Transformer

Parts No.: NA3207

Please sign one copy and return it to us by mail.
Keep the other one for your files.

7-5 HARAJYUKU, HIDAKA SHI, SAITAMA

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NIHON CERATEC CO., LTD.

Approved	Checked	Drawings

1 Specifications

1.1 Rating

Table 1 Rating (at 130kohm//10pF)

Item	Symbol	Ratings.
Input voltage	Vin	50Vrms max
Output voltage	Pout	5.5 W max
Output current	Iout	6.5mArms max
Driving frequency	fd	51~53 kHz

1.2 Electrical Characteristics

Table 2 Electrical characteristics

Item	Symbol	Spec.	Notes
Resonance frequency	fr	49.1 kHz \pm 5%	1Vrms, ※1
Capacitance (primary)	Ci	183 nF \pm 20%	1kHz, 1Vrms, ※1
Capacitance (secondary)	Co	18 pF \pm 20%	1kHz, 1Vrms, ※2
Step-up ratio	Av	83 \pm 10	RL=130k Ω //10pF, Io=6mA, ※3
Efficiency	η	93% \leq	RL=130k Ω //10pF, Io=6mA, ※3

※ 1:fr and Ci shall be measured with circuit as shown in Fig.1.

※ 2:Co shall be measured with circuit as shown in Fig.2.

※ 3:Step-up ratio and Efficiency shall be measured at 3 frequencies (49.5kHz, 50.5kHz and 51.5kHz) with circuit as shown in Fig 3, then a maximum value for step-up ratio and efficiency shall be obtained in the range of these 3 frequencies.

2 Test Method

2.1 Test Circuit

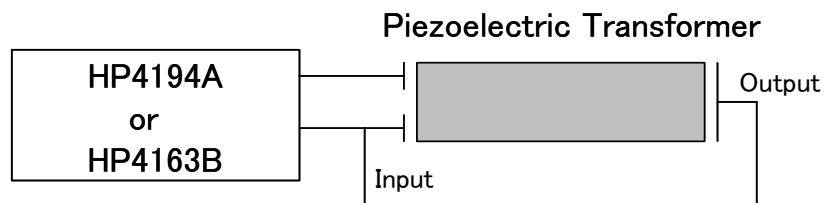


Fig. 1 Test Circuit 1

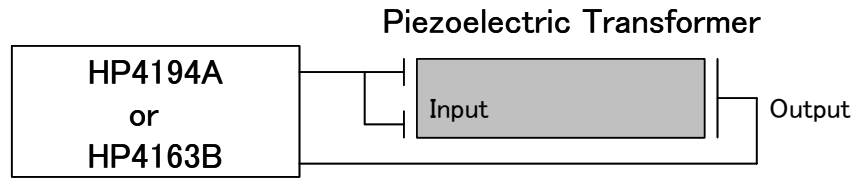


Fig. 2 Test Circuit 2

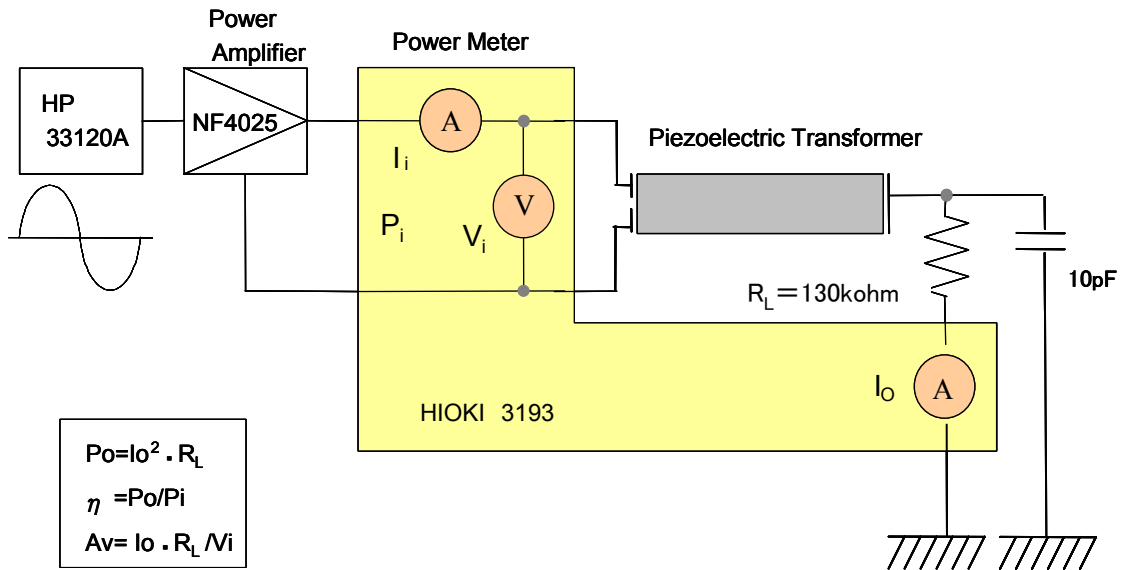
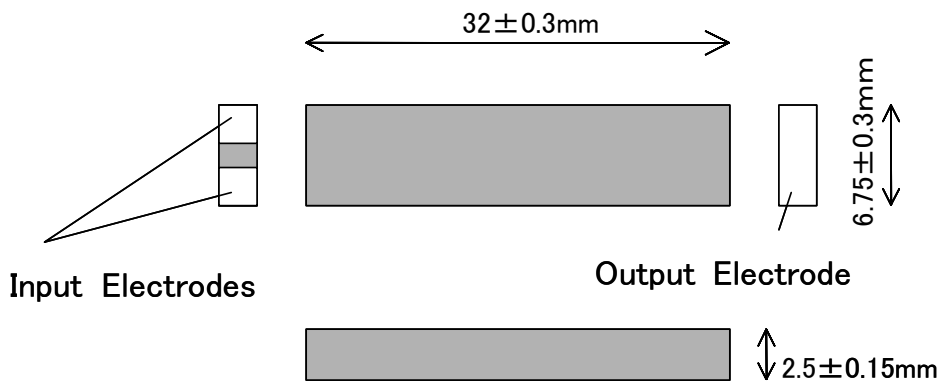


Fig. 3 Test Circuit 3

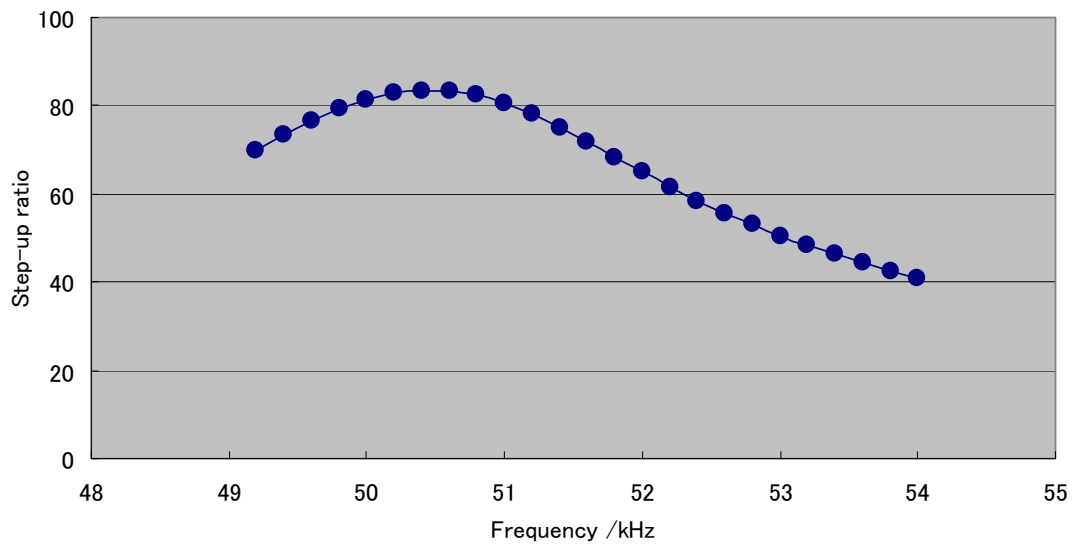
3 Outline Dimensions Drawing



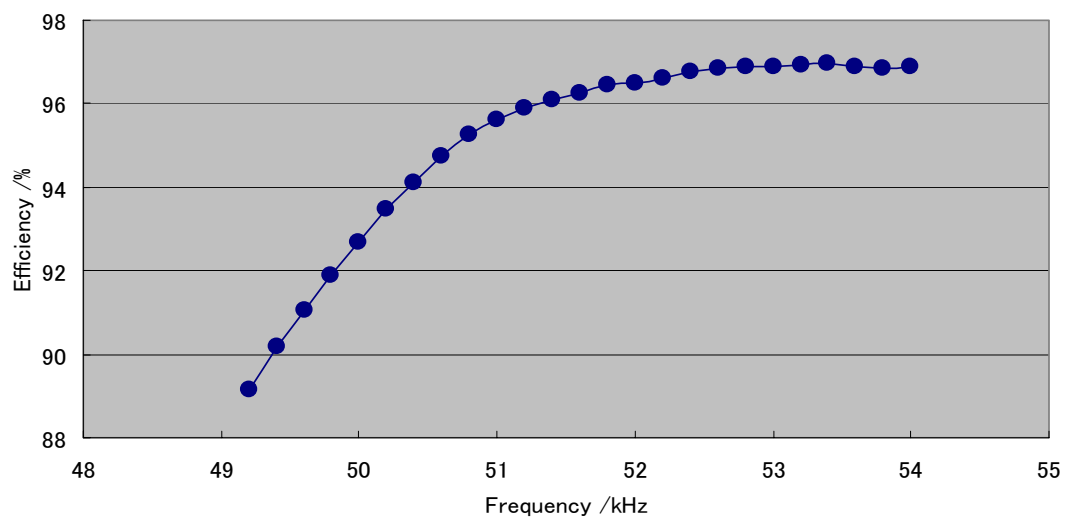
4 Result of constant current measurement

Set output current $I_{out} : 6.0\text{mA}$
Load conditions $130\text{k}\Omega // 10\text{pF}$
Frequency range $49\text{kHz} - 54\text{kHz}$

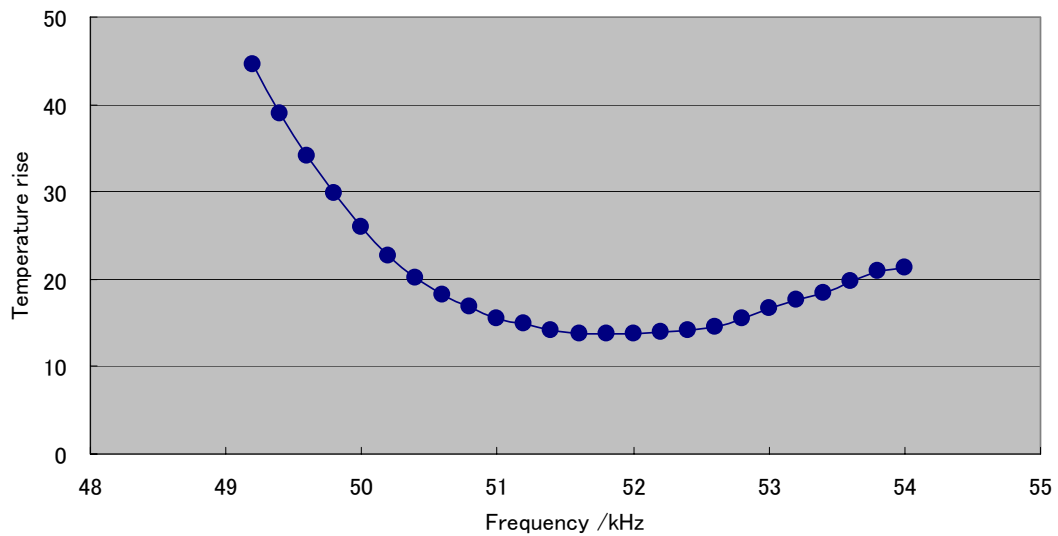
4.1 Step-up Ratio



4.2 Efficiency

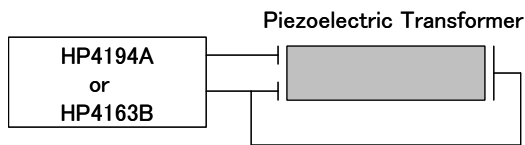


4.3 Temperature Rise



5 Impedance with 4194A

Input measurement



Output measurement

