



OSAMU-IDE-20120301SPESIF-2003ver.ppt

Anomalous Power Efficiency of A Transformer Driven By Tuned Duty Pulses

Osamu Ide

1

Video



Thomas Valone

Attendees (6)

▼ Hosts (1)

Thomas Valone

► Presenters (0)

▼ Participants (5)

David Cagle

jay

Steve Katinsky

the lovely brenda

Tom V

Chat (Everyone)

Miley/

David Cagle: Not getting sound

Steve Katinsky: Same here, no sound.

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Steve Katinsky: Sound on here as well

0:01:41/6:40:43



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Hypothesis of EMF Function

$$EMF = -K_1 \frac{d\Phi}{dt}$$



Faraday's EMF : $K_1 = 1$

reference(2)

Video



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Hypothesis of EMF Function

$$EMF = K_0 \Phi - K_1 \frac{d\Phi}{dt}$$

↑
Mono-polar induction

↑
Faraday's EMF : $K_1 = 1$

reference(2)

Video



Thomas Valone

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Thomas Valone [microphone icon]

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Hypothesis of EMF Function

$$EMF = K_0 \Phi - K_1 \frac{d\Phi}{dt} + K_2 \frac{d^2\Phi}{dt^2}$$

↑
Mono-polar induction

↑
Faraday's EMF : $K_1 = 1$

↑
Positive EMF

reference(2)

Video



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Hypothesis of EMF Function

→ Unknown EMF

$$EMF = K_0 \Phi - K_1 \frac{d\Phi}{dt} + K_2 \frac{d^2\Phi}{dt^2} - K_3 \frac{d^3\Phi}{dt^3} + \dots + (-1)^n K_n \frac{d^n\Phi}{dt^n} + \dots \quad (13)$$

↑
Mono-polar induction

↑
Faraday's EMF : $K_1 = 1$

↑
Positive EMF

reference(2)

Video



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Summary of the Reference(1)

“Increased voltage phenomenon in a resonance circuit of unconventional magnetic configuration”

Unknown “Positive EMF” is existing

- *Same direction of input current
(Reverse to Faraday's back EMF)
- *Independent of "Faraday's EMF"
- *Counter Magnetic Field

Video



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What's "Positive EMF"?

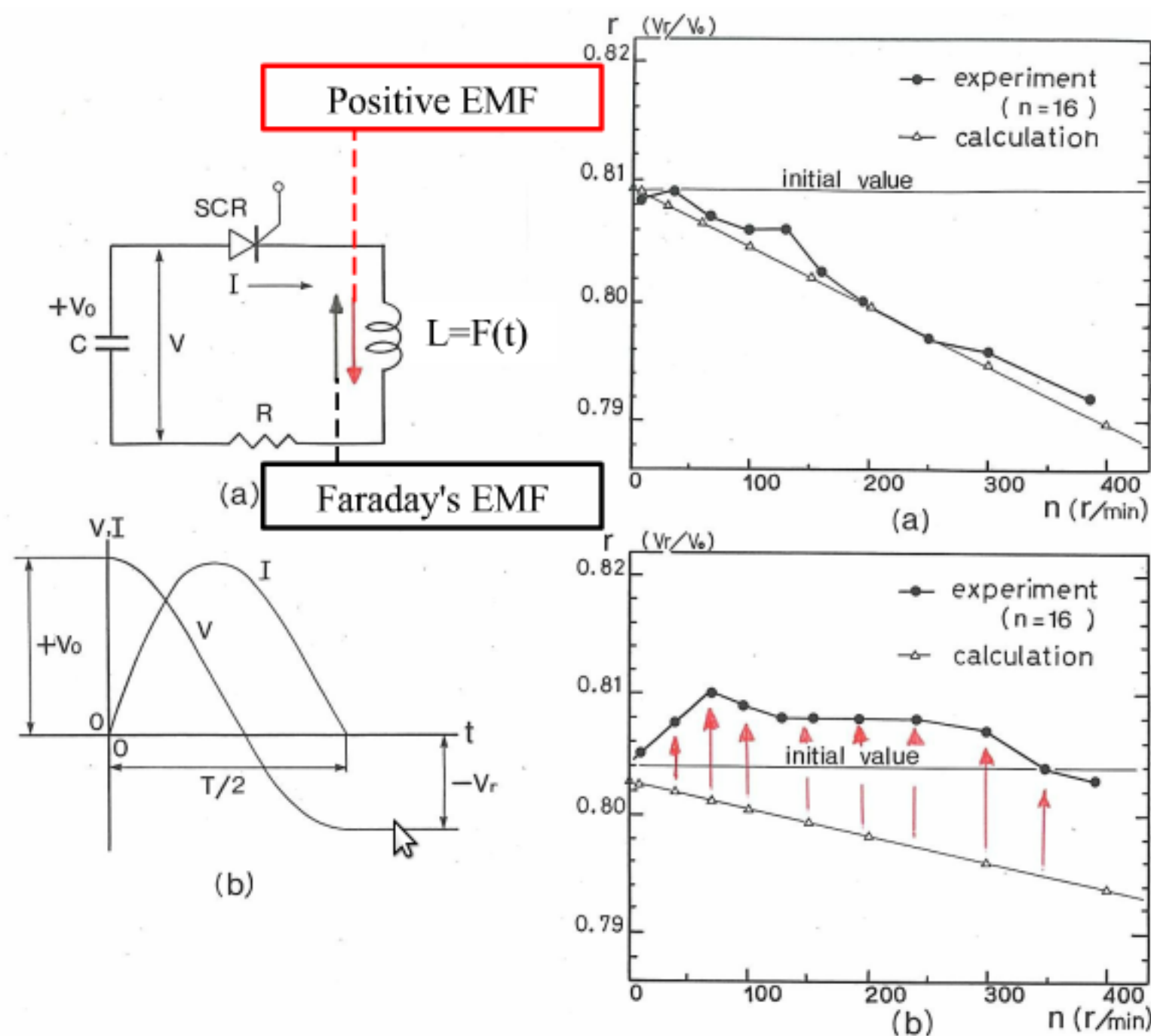


Fig.2

reference(1)

Fig.10

8

Video



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Summary of the Reference(2)

“Possibility of existence of non-linear EMF”

* “Positive EMF” has ‘Rule’

* Function of second order time derivatives of the magnetic flux

Video



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[person icon] Thomas Valone

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[person icon] Jason Owens

[person icon] jay

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[person icon] the lovely brenda

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The Rules of "Positive EMF"

V_p (Positive EMF)

= [measured value]-[calculated value]

(by Faraday's law)

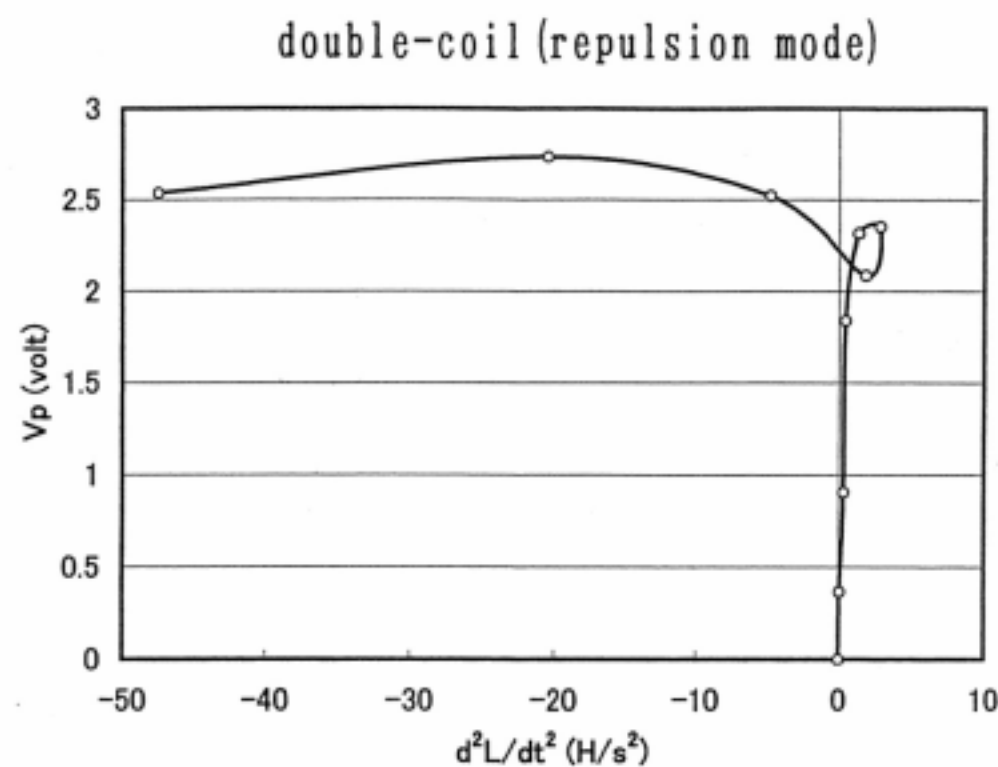


Figure8

reference(2)

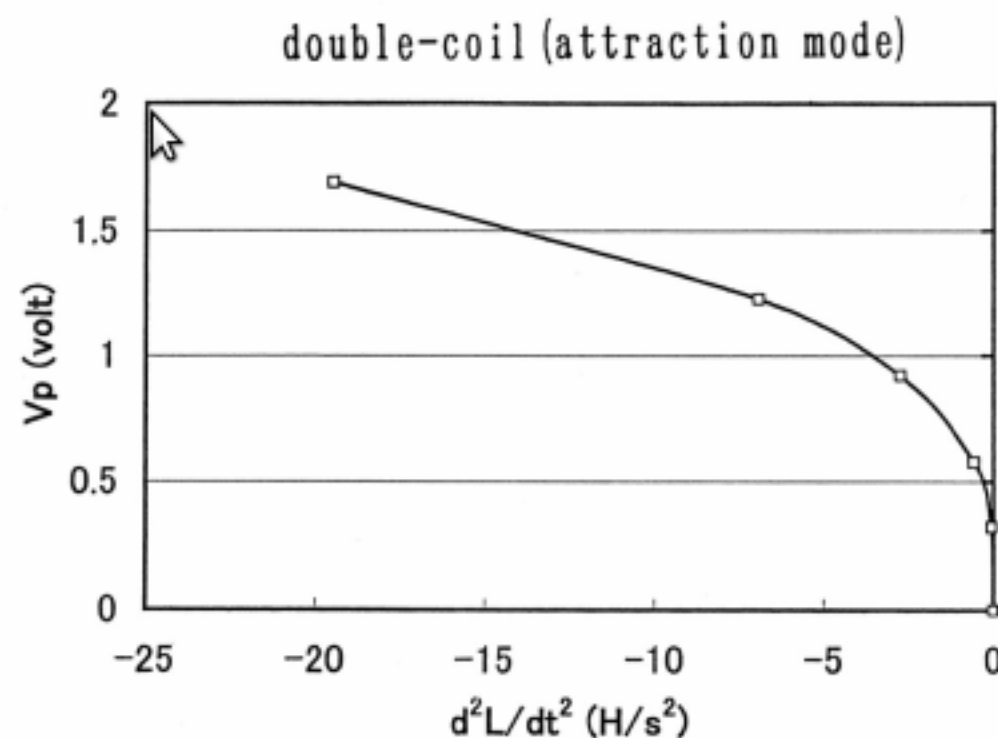


Figure9

Video



Thomas Valone

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Thomas Valone

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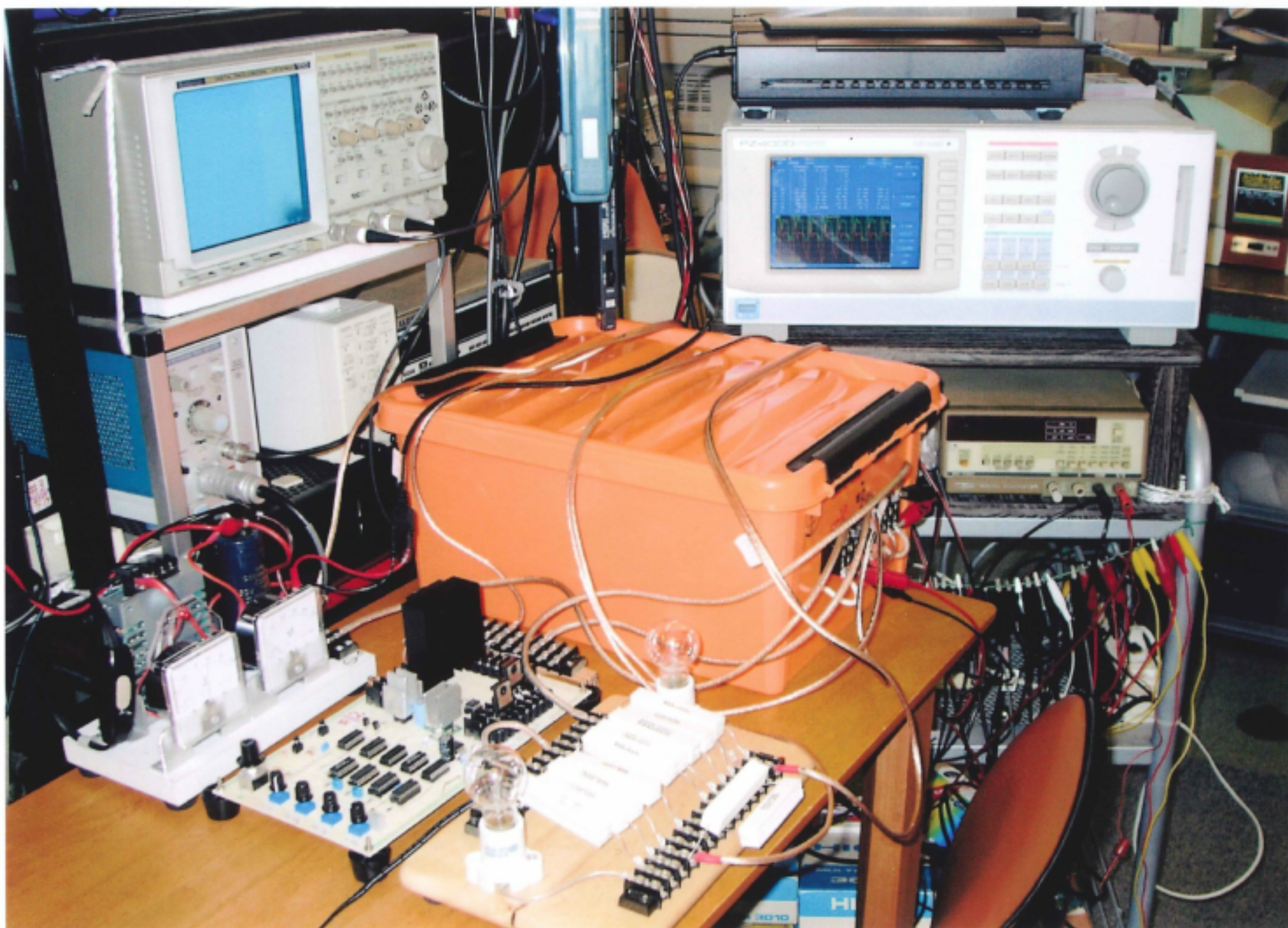
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Experimental System



11

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[volume icon]

FileEditViewHistoryToolsHelp

SPESIF 2012_4 Friday morri x

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es

9:43 PM

daniel

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(a)

R (Ω)	①	②	③	④
100	90	90	90	90
200	95	95	95	95
500	100	100	100	100
1000	105	105	105	105

(b)

R (Ω)	①	②	③	④
100	90	90	90	90
200	95	95	95	95
500	100	100	100	100
1000	105	105	105	105

The Efficiency of the Inverter

<Parameter>

[1]square wave (high duty)

[2]square wave (low duty)

[3]Tuned Duty square wave

[4]quick repeated Tuned Duty square wave

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Video

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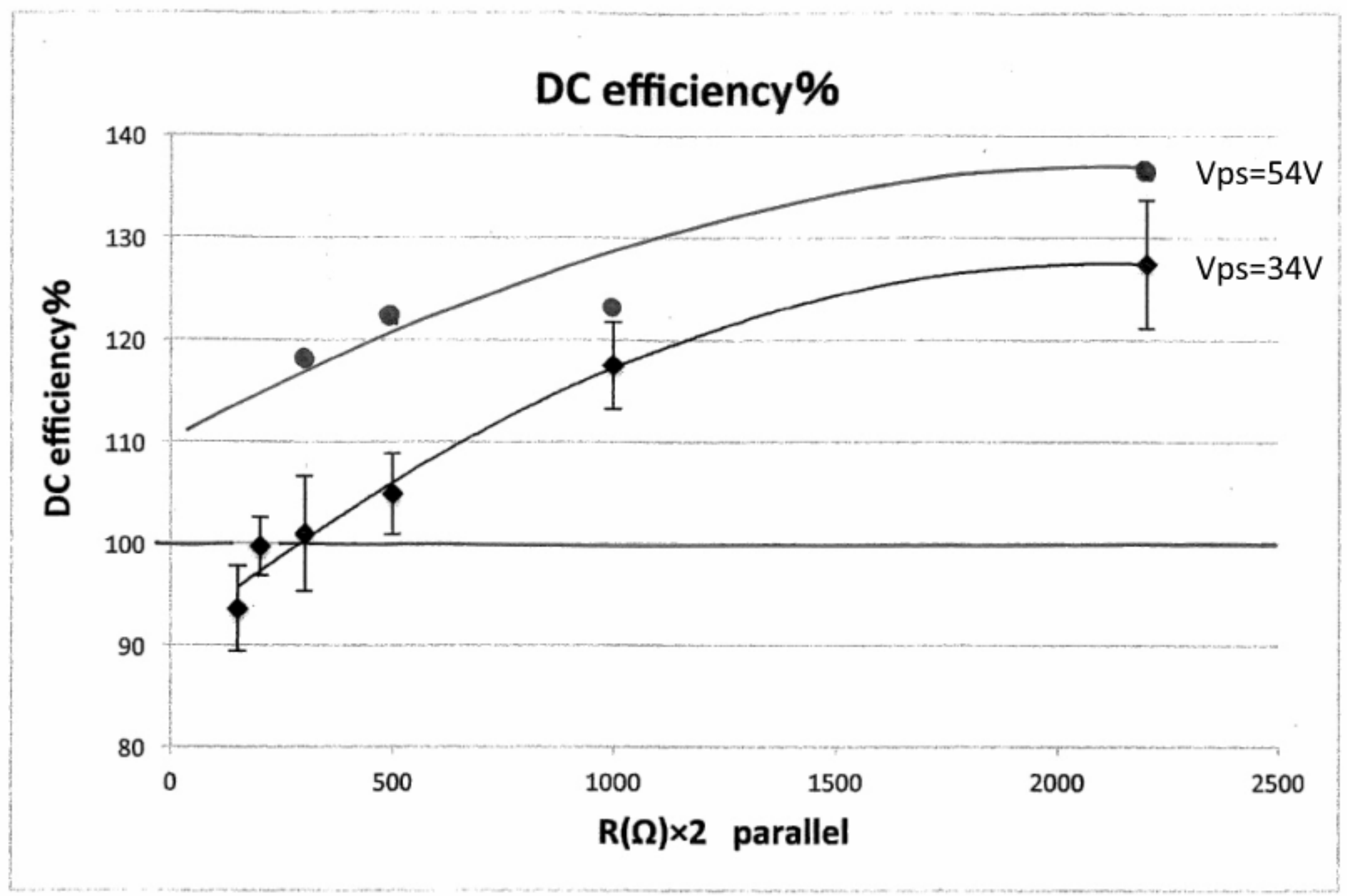
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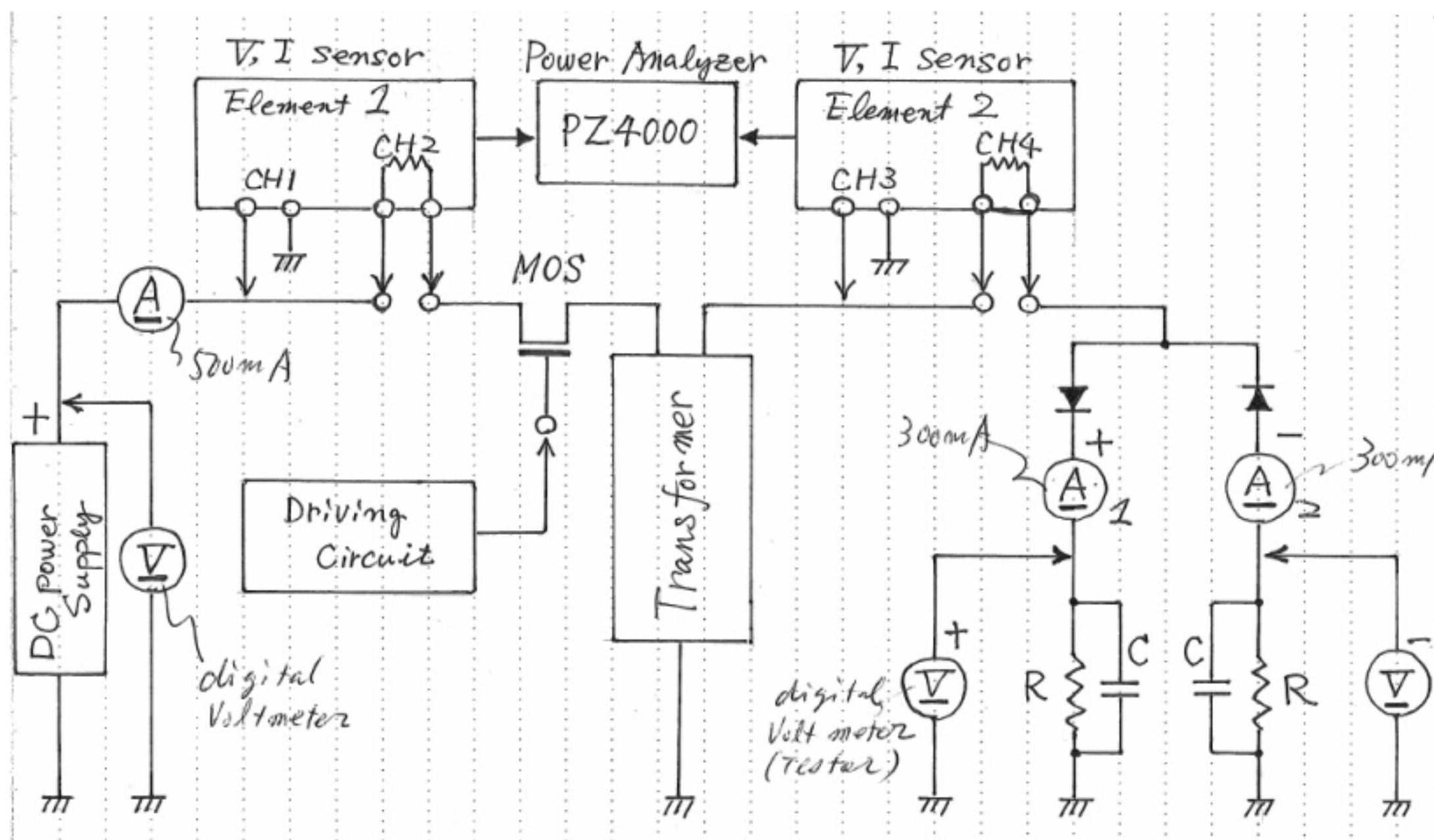
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Measuring Setup of DC output Power



Video



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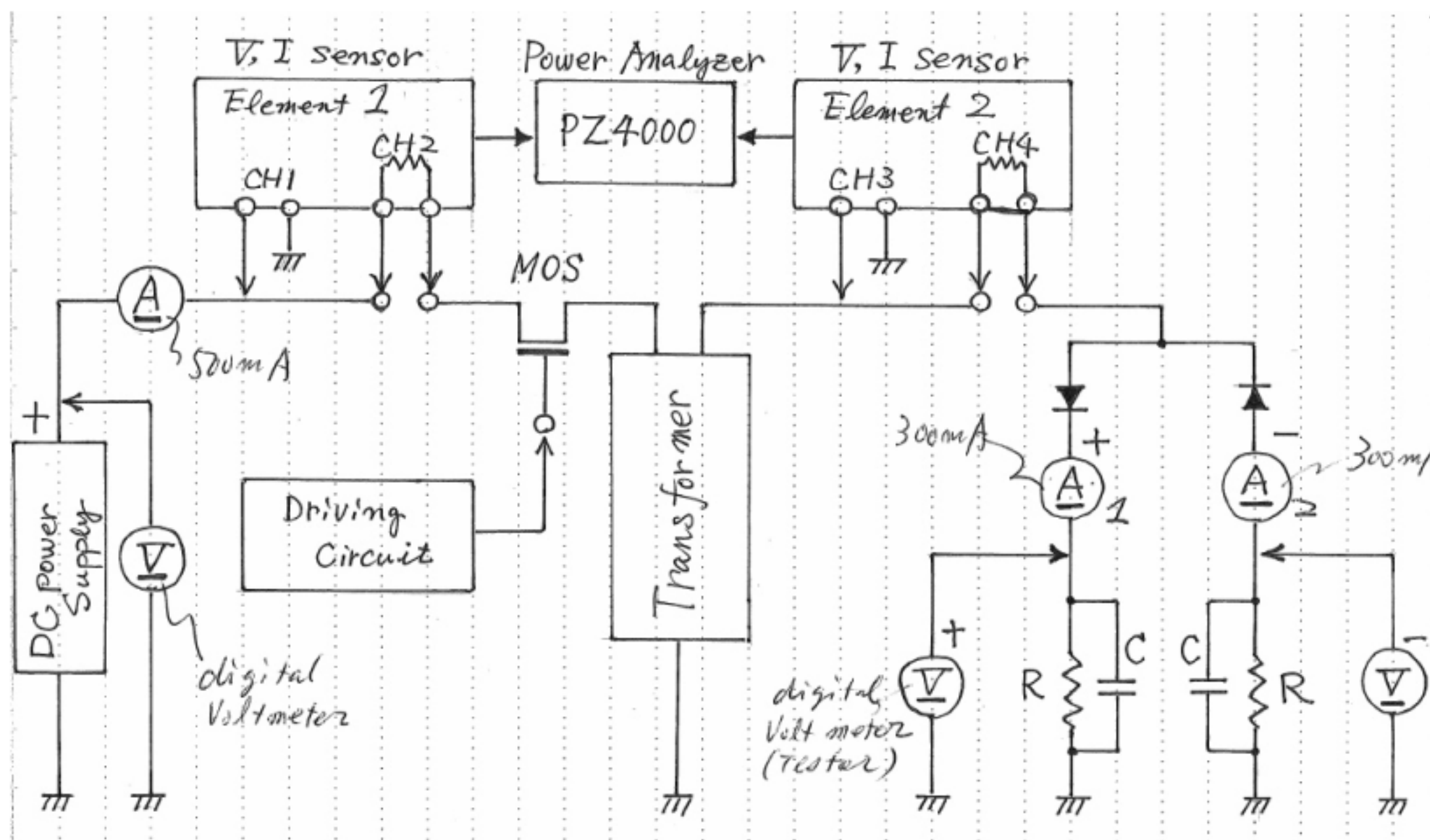
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Measuring Setup of DC output Power



Video



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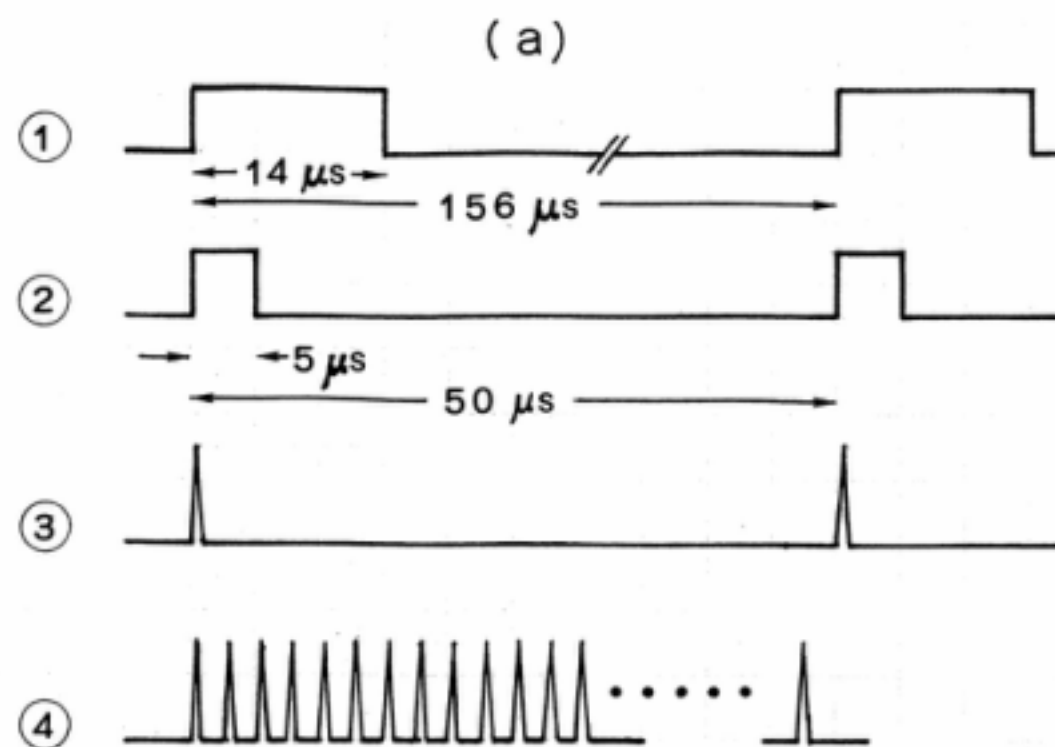
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Jason Owens
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Tom V

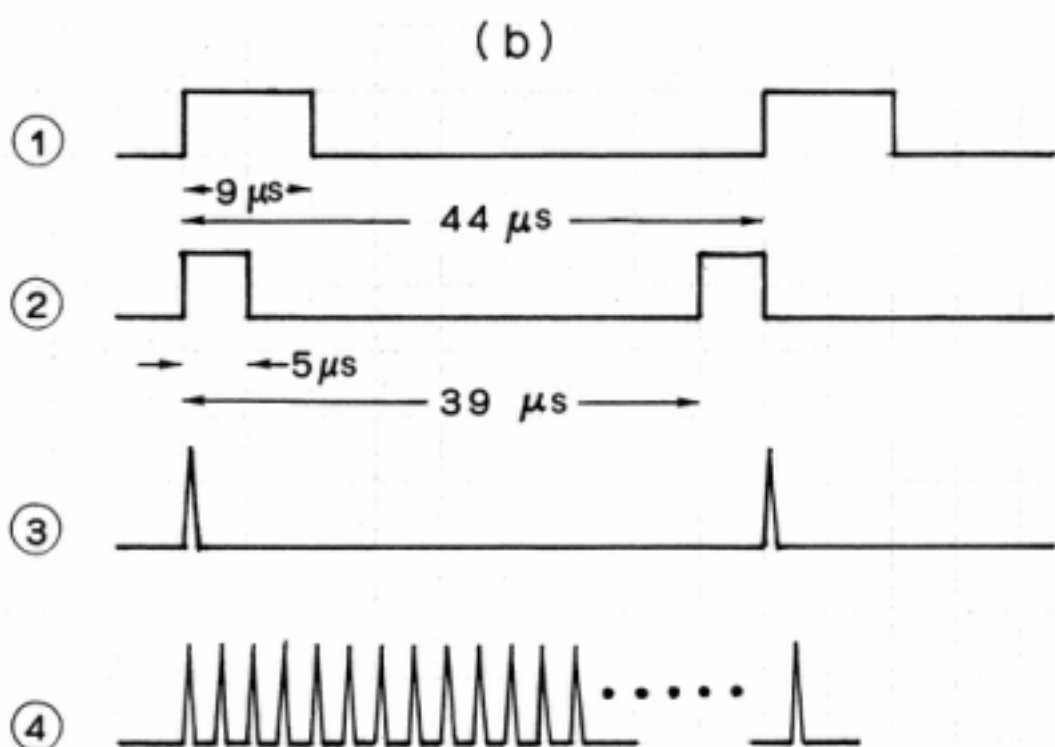
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Driving pulse wave



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Video



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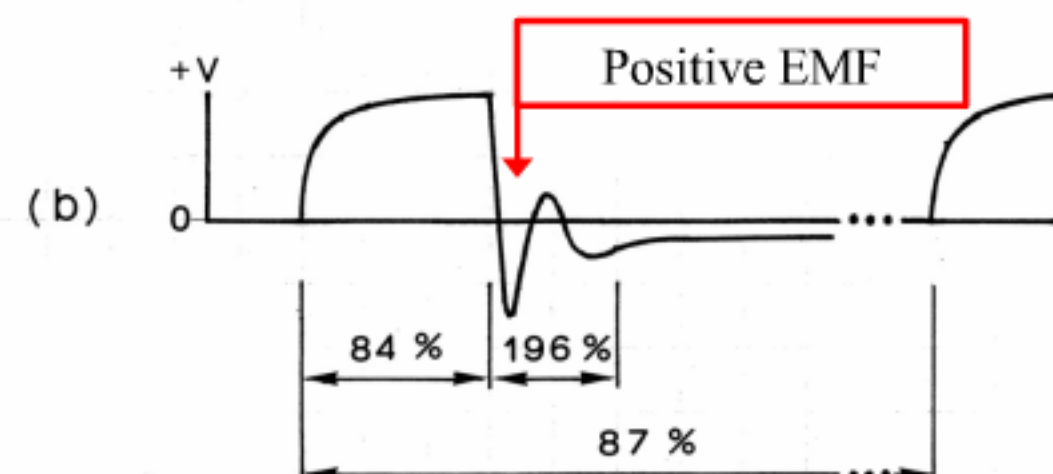
Steve Katinsky: Sound on here as well

0:22:00/6:40:43

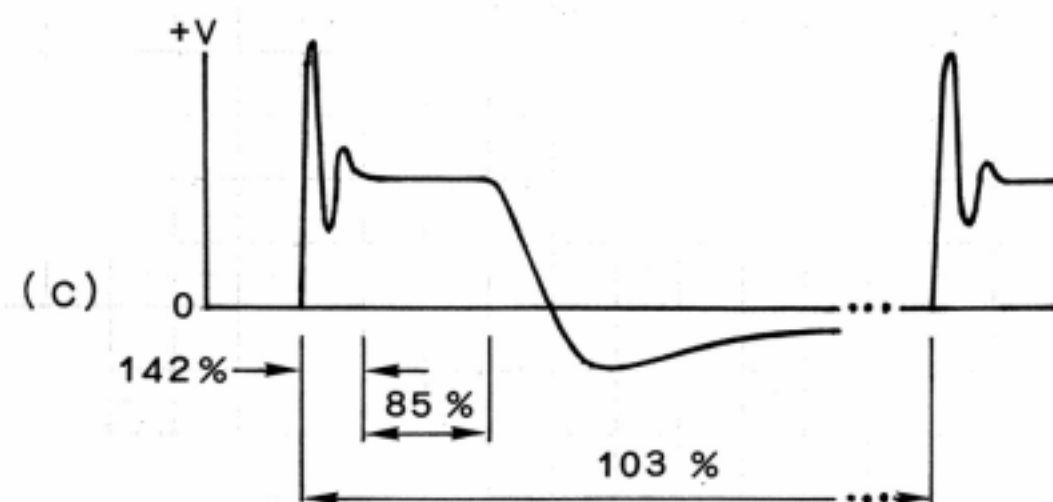
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Analysis of the driving by the square wave

(a) Single square wave (driving)



Output voltage (current)
($R=51 \Omega$)



Output voltage (current)
($R=991 \Omega$)

Video



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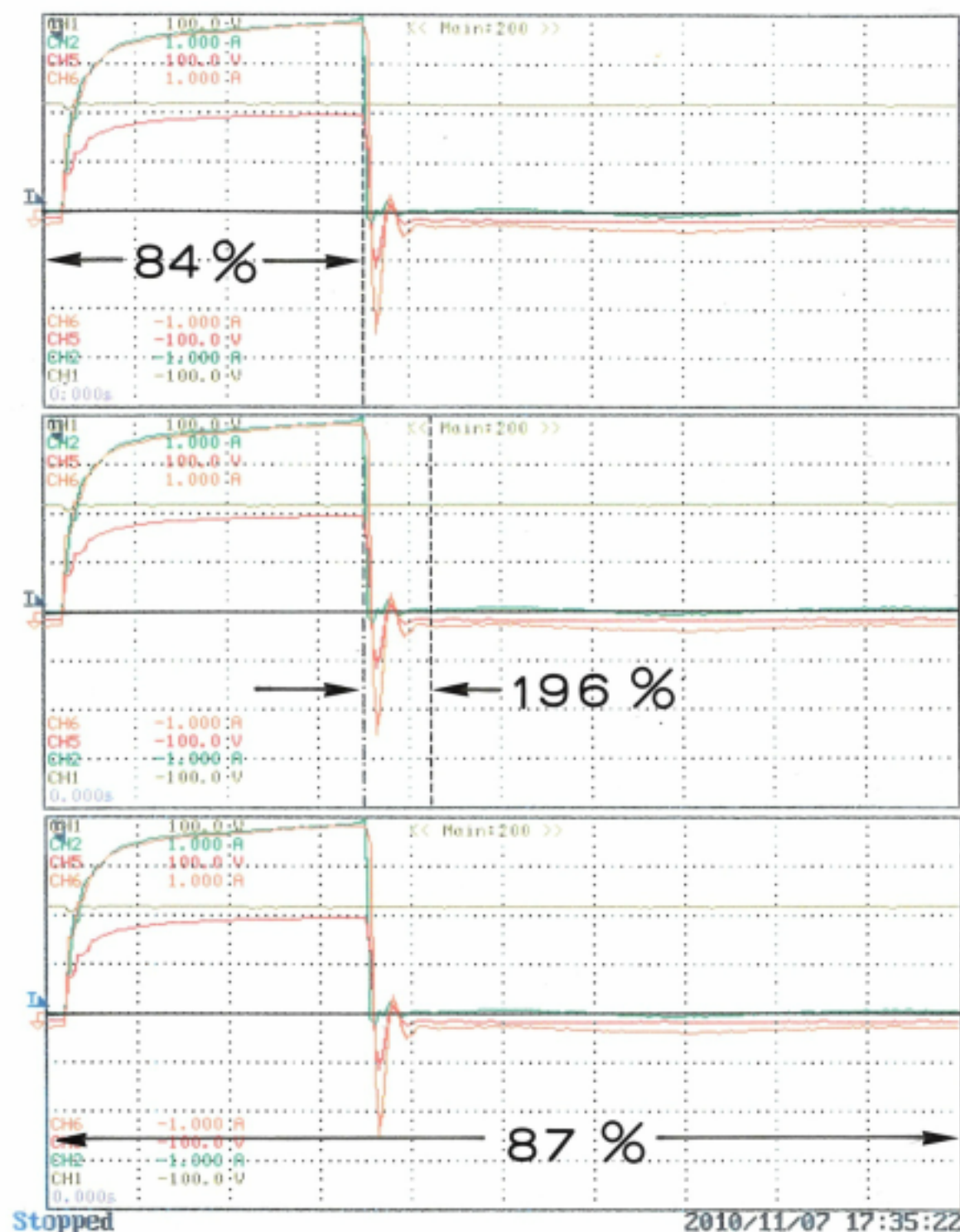
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“Measured Data
by PZ4000”

*Single square wave

*Load : $R=51 \Omega$

Video



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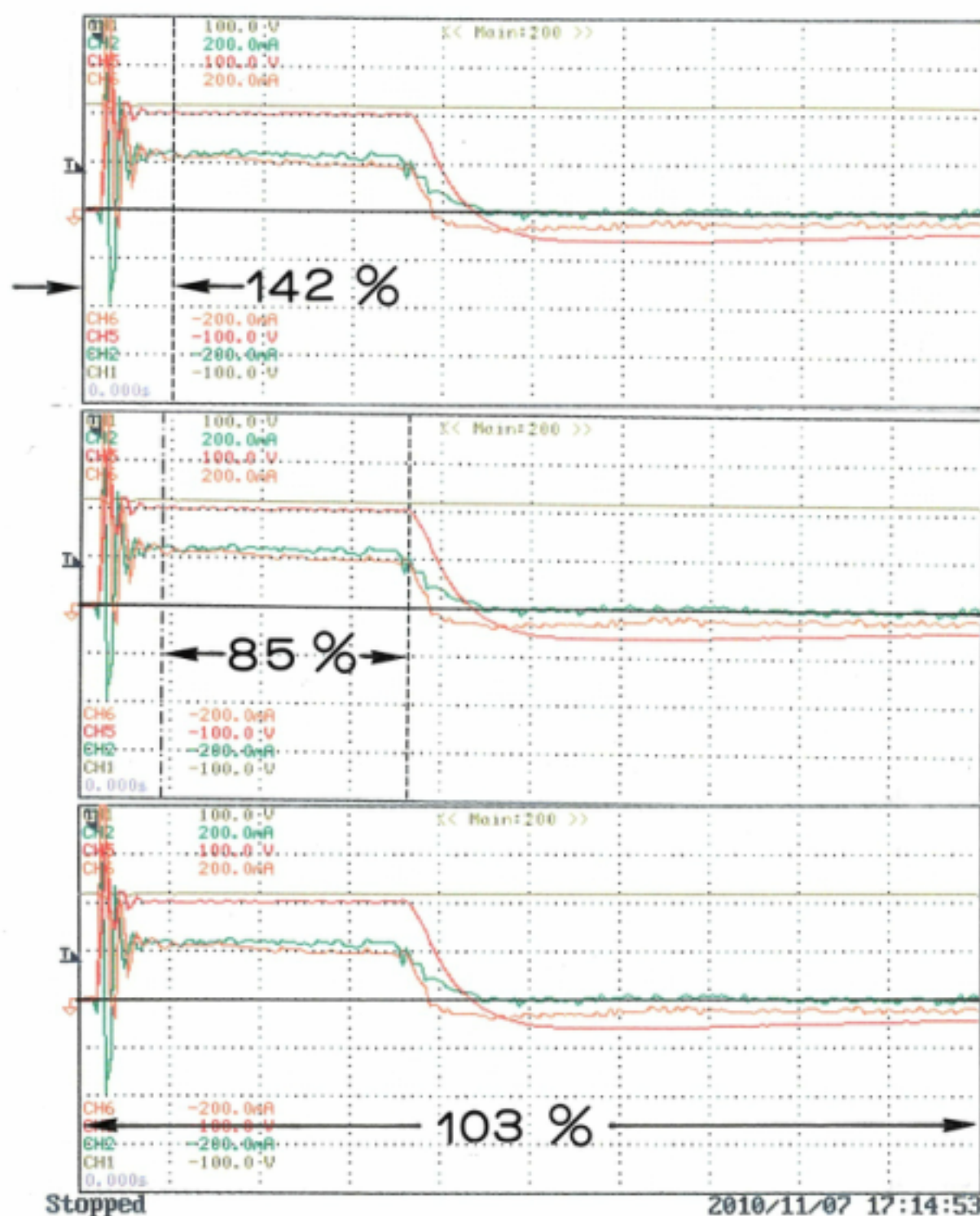
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OSAMU-IDE-20120301SPESIF-2003ver.ppt



“Measured Data
by PZ4000”

*Single square wave

*Load : $R=991\ \Omega$

Video



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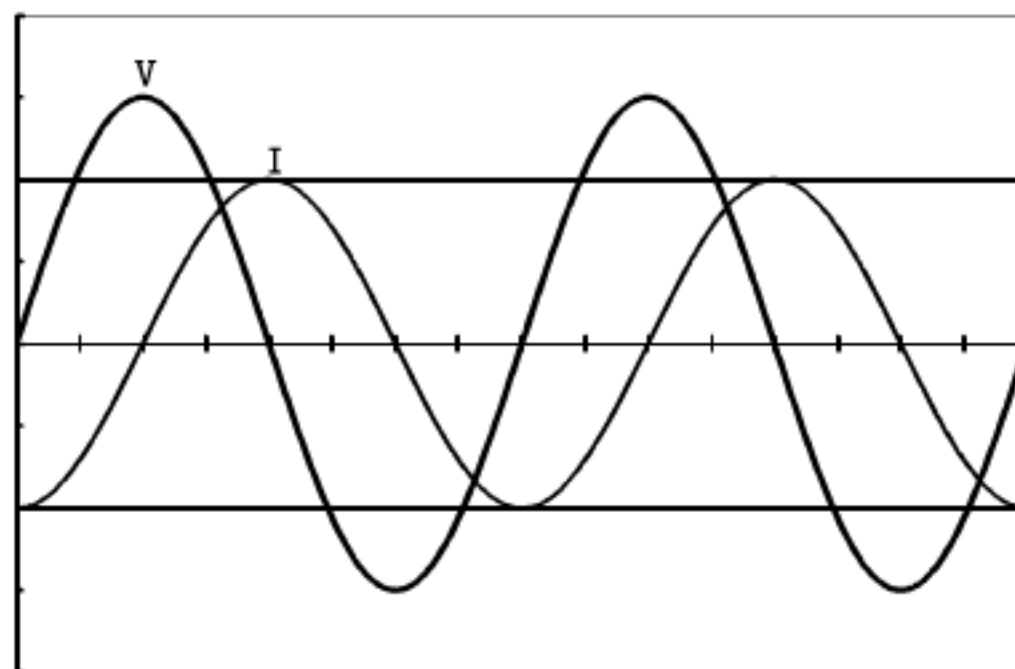
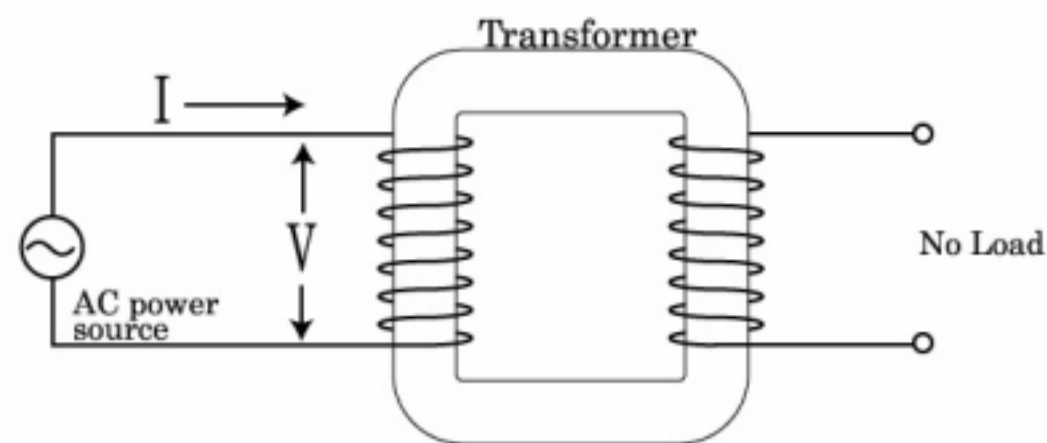
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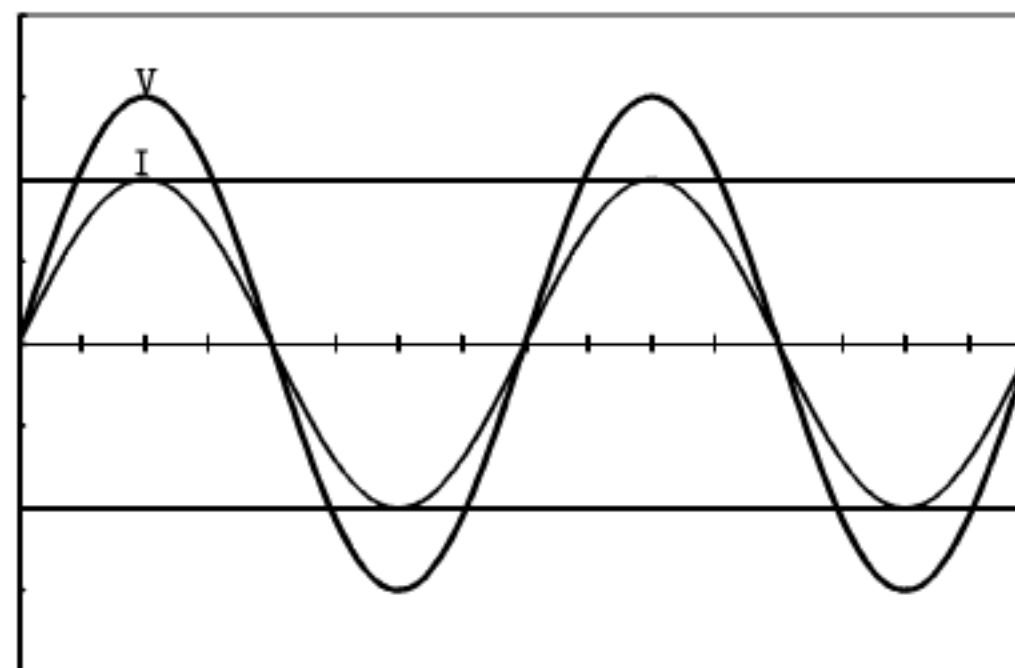
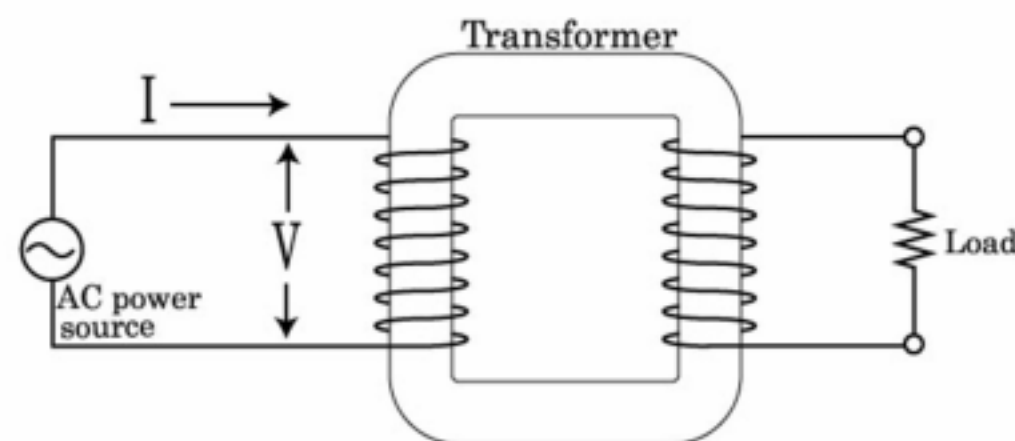
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The wave form of the input to the Transformer

(No Load)



(With Load)



19

Video



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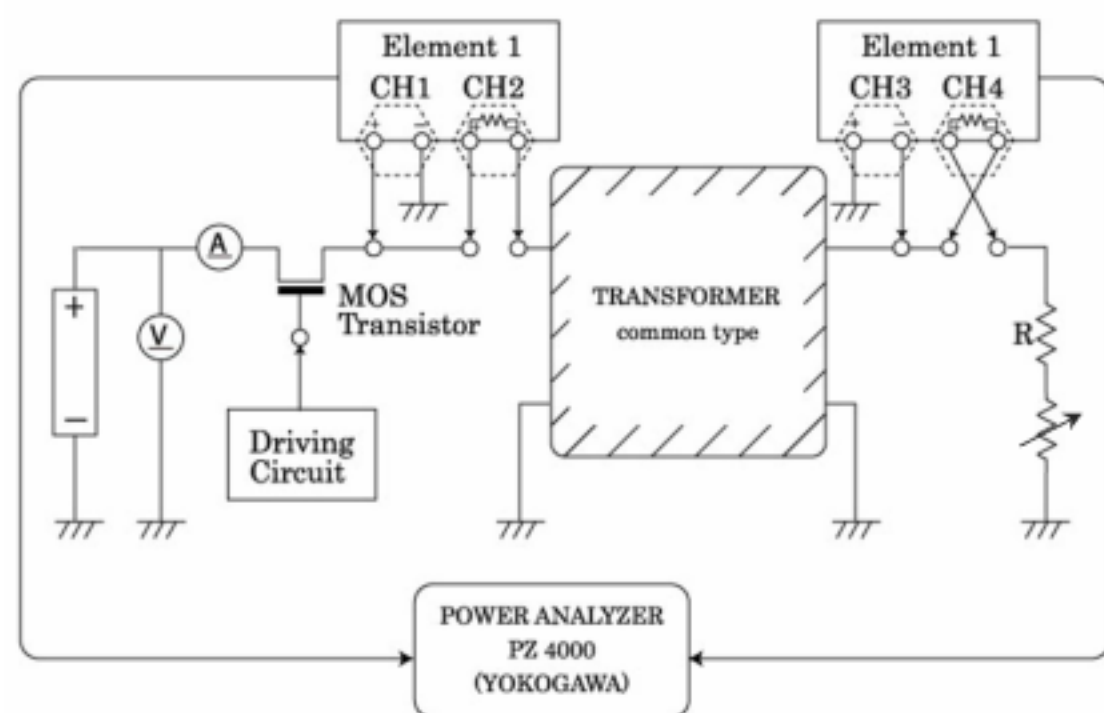
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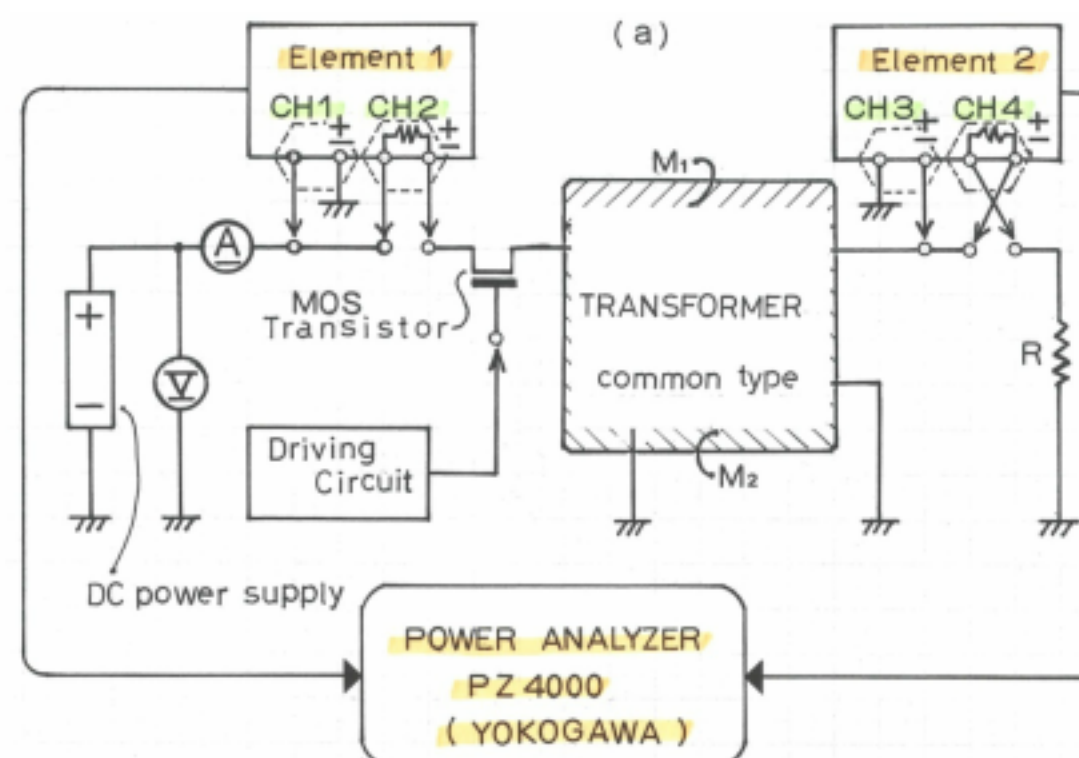
0:25:25/6:40:43

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Electrical Circuit



Electrical Circuit of Reference 3



Video



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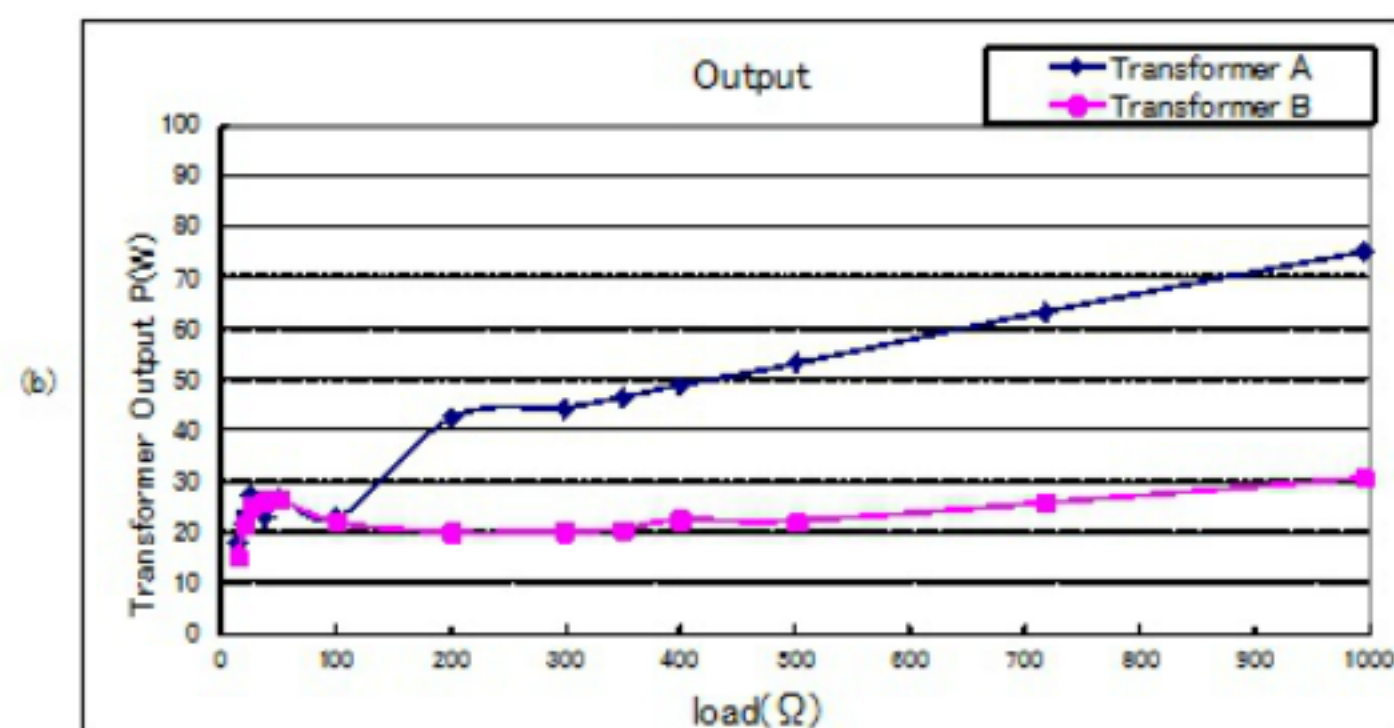
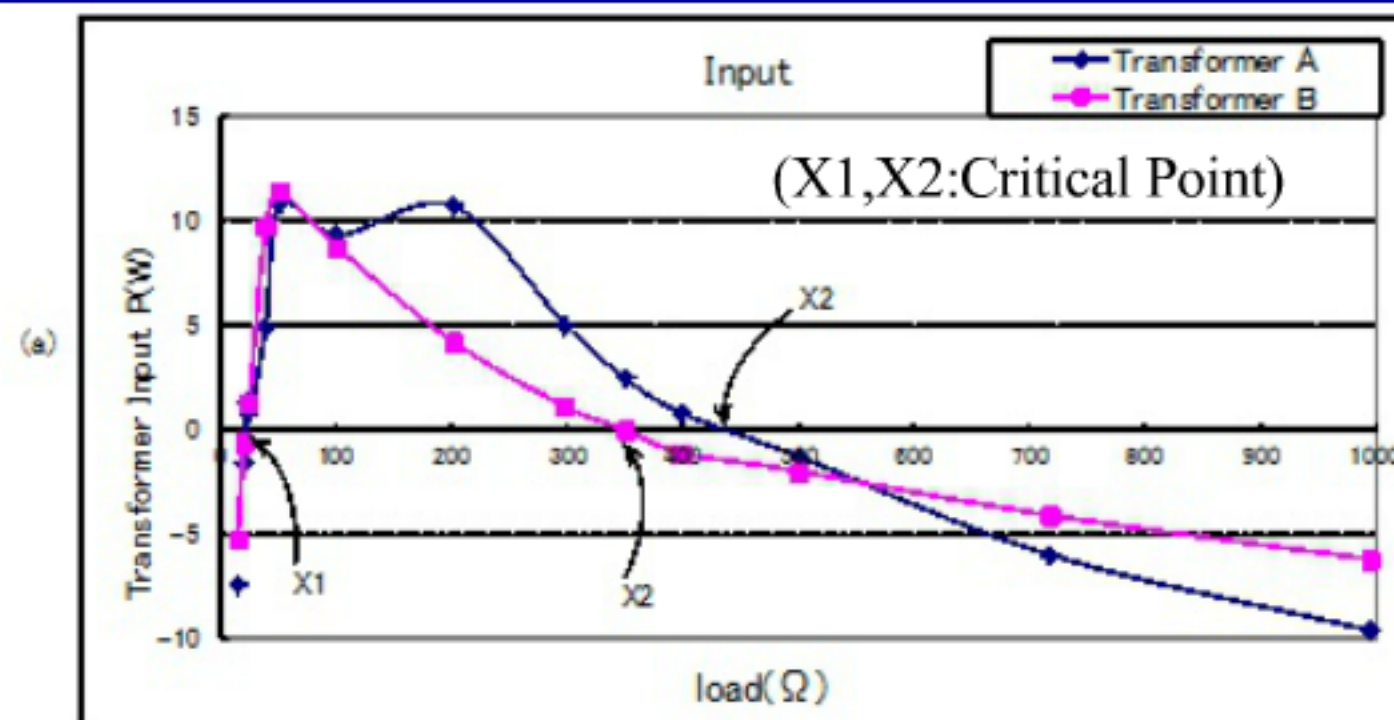
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Input and Output of the Transformer



22

Video



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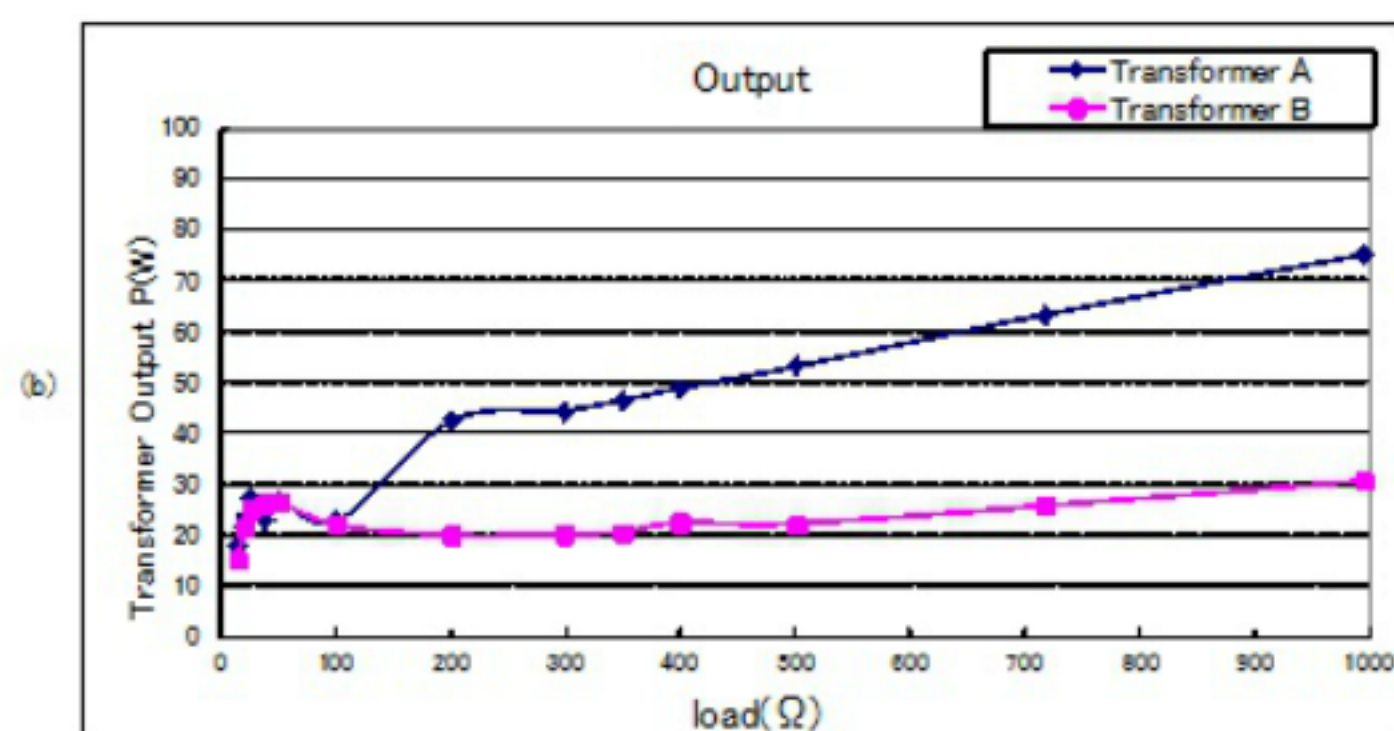
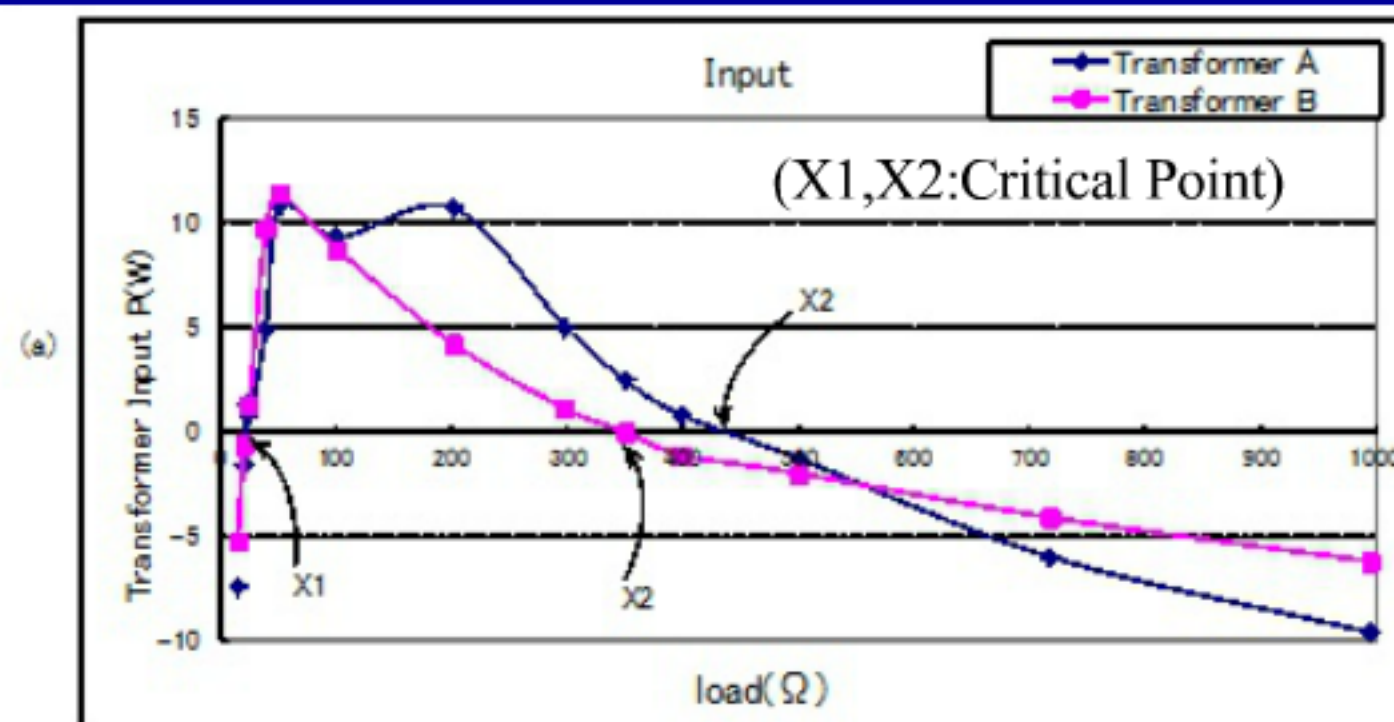
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Input and Output of the Transformer



22

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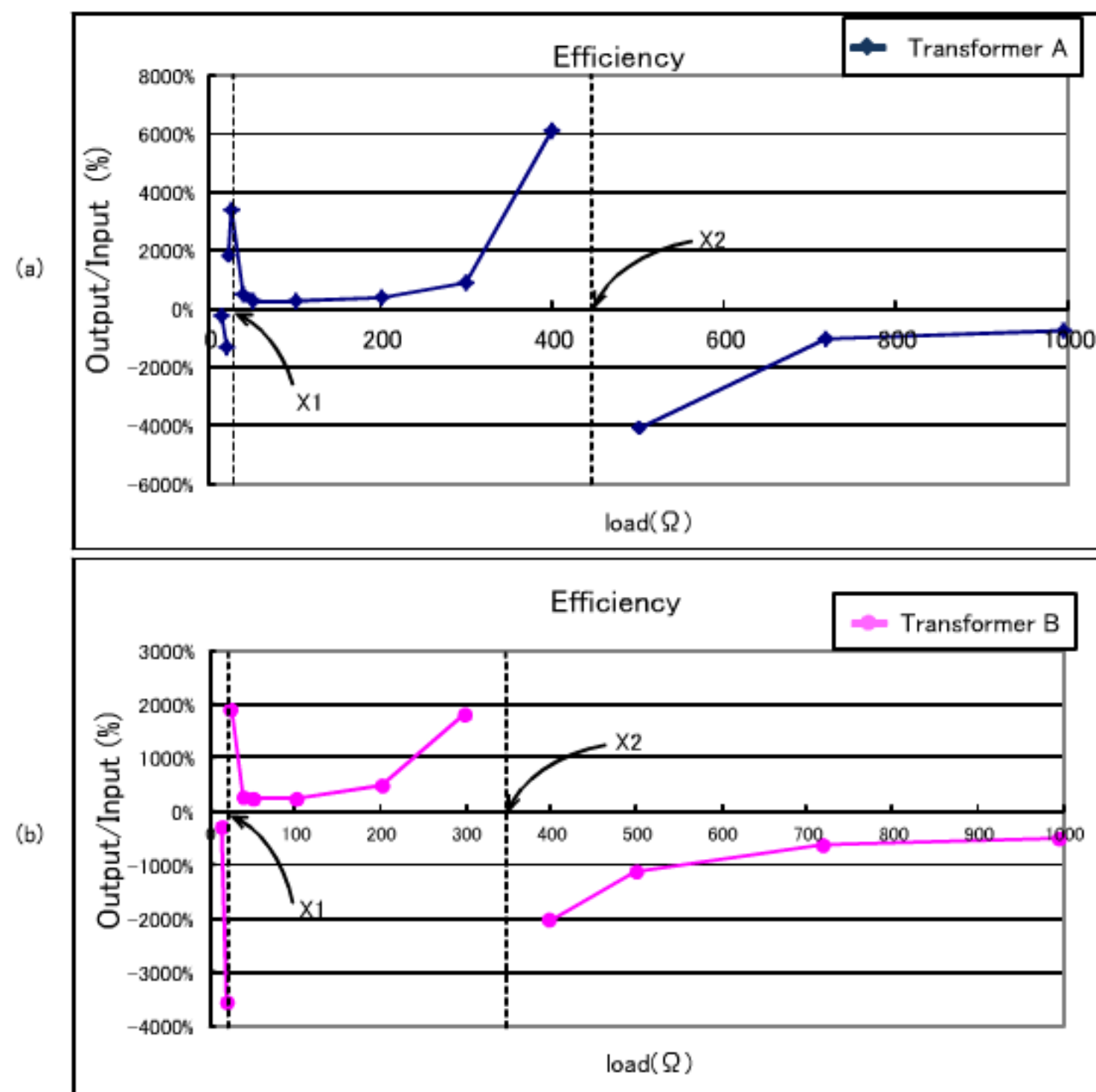
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Efficiency of the Transformer



23

Video



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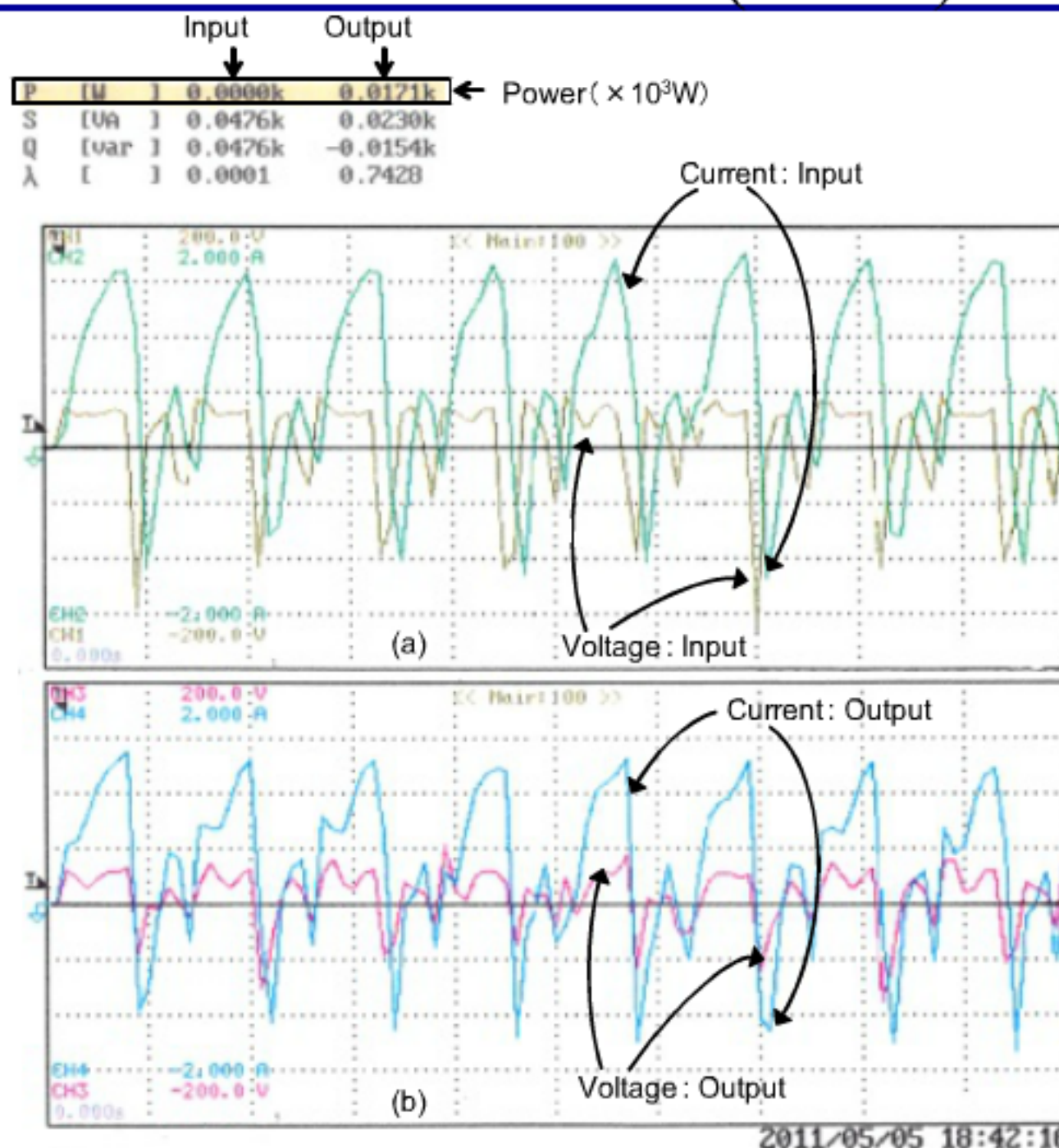
Steve Katinsky: Sound on here as well

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Input and Output Wave Form of the Transformer (At X1)



Transformer A load: R=22.3Ω (X1)

24

Video



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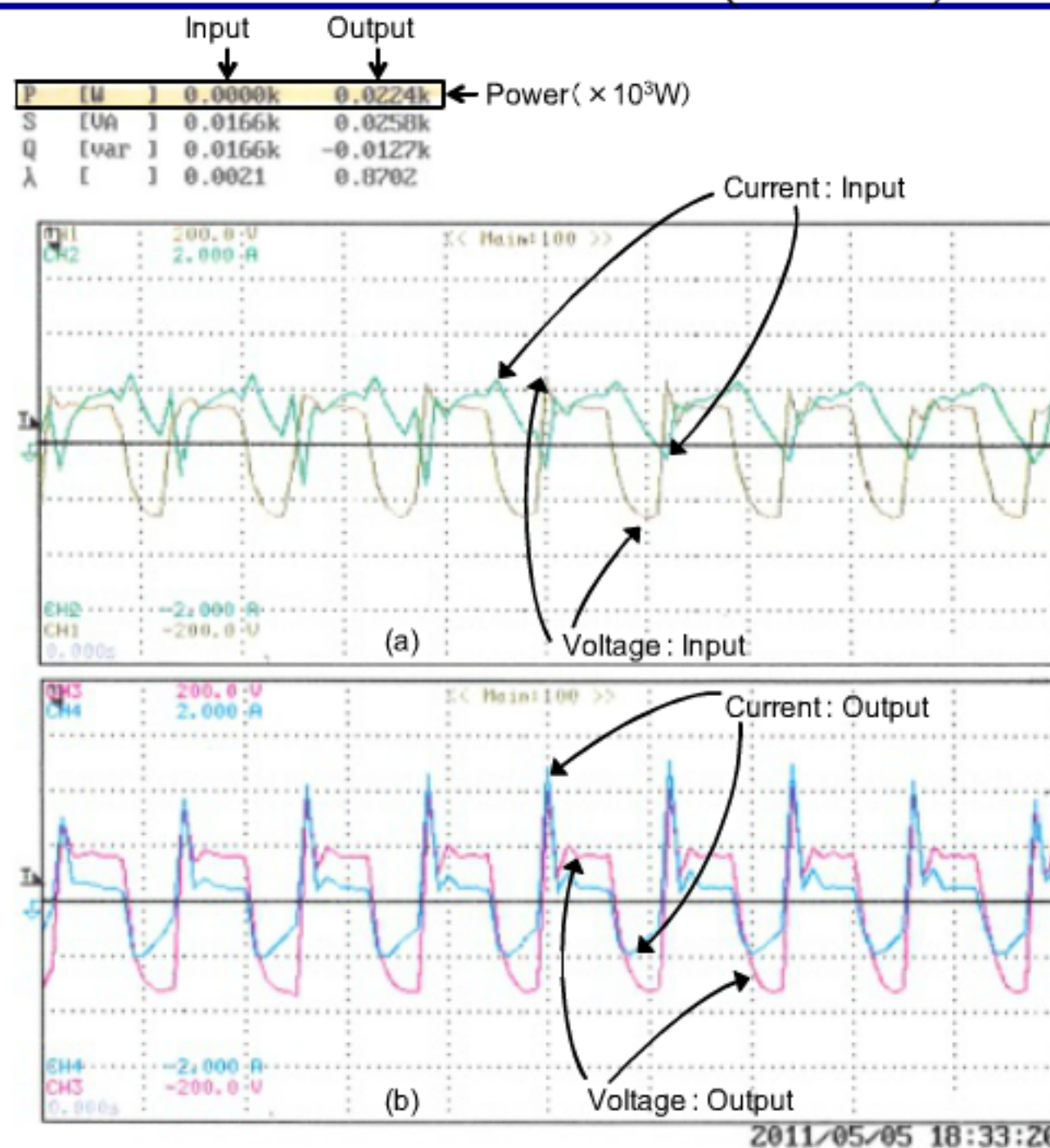
Steve Katinsky: Sound on here as well

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Speaker icon

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Input and Output Wave Form of the Transformer (At X2)

Transformer B load: $R=349.5\Omega$ (X2)

25

Video



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Thomas Valone

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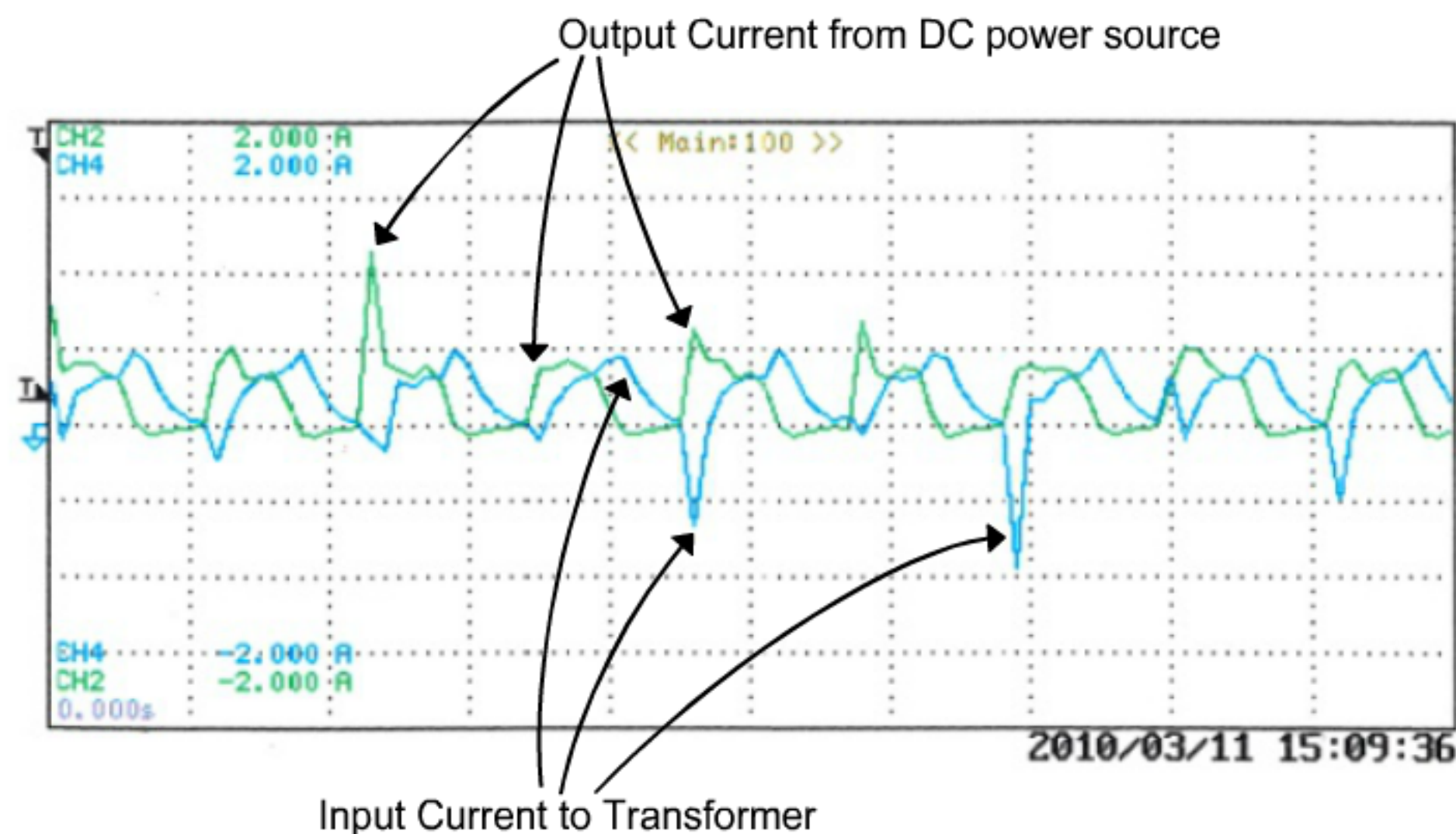
Steve Katinsky: Sound on here as well

0:31:17/6:40:43

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Input and Output Current of MCS Transistor



Video



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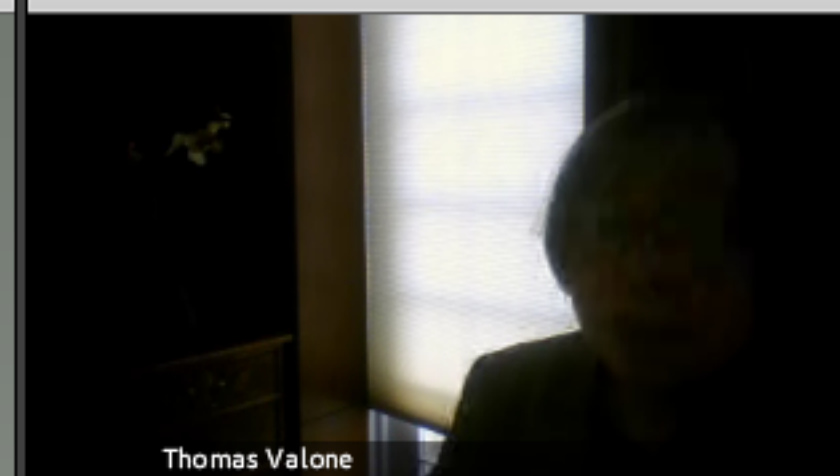
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CONCLUSION


1. Phase shift that cannot occur for an ordinary transformer to be driven with sine waves, is caused between the observed waves of the input voltage to the transformer and the input current to the same.
2. The degree of the phase shift between the voltage wave and the current wave to be input to the transformer, varies depending on the value of the load resistance existing on the secondary of the transformer.
3. Accordingly, the RMS value of the input power to the transformer, can vary in the range from the positive to the negative zone, encompassing zero.
4. Consequently, the apparent power efficiency of the transformer itself as a single unit, can take not only a positive value, but also a negative or even infinite value.

Video



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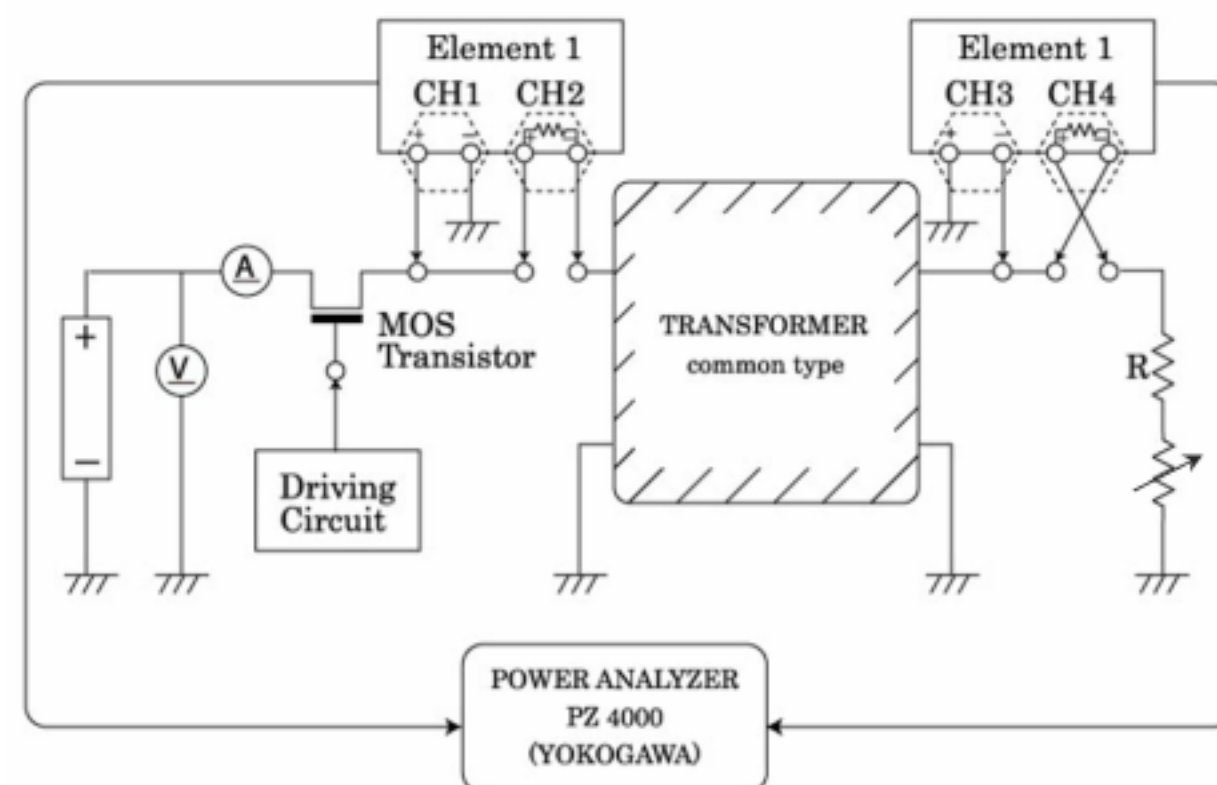
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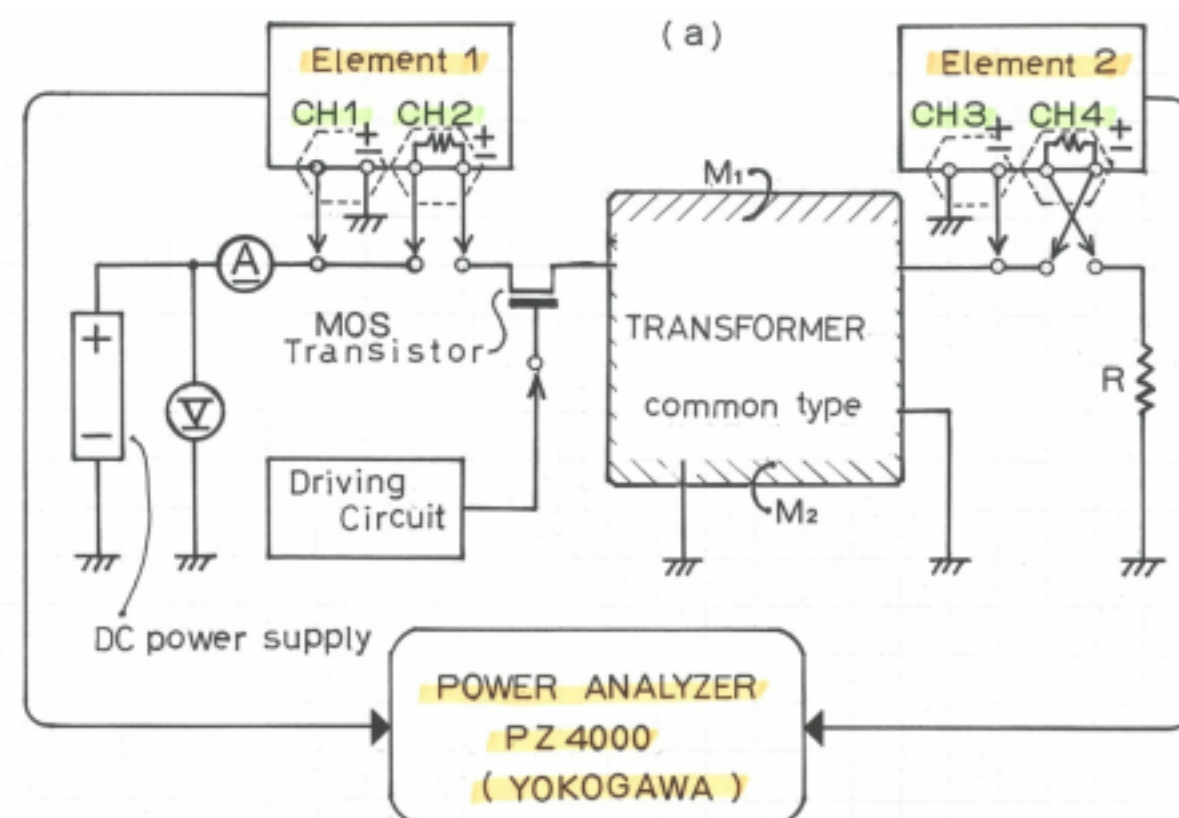
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Share

Electrical Circuit



Electrical Circuit of Reference 3



21

Video



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David Cagle: Not getting sound

Steve Katinsky: Same here, no sound.

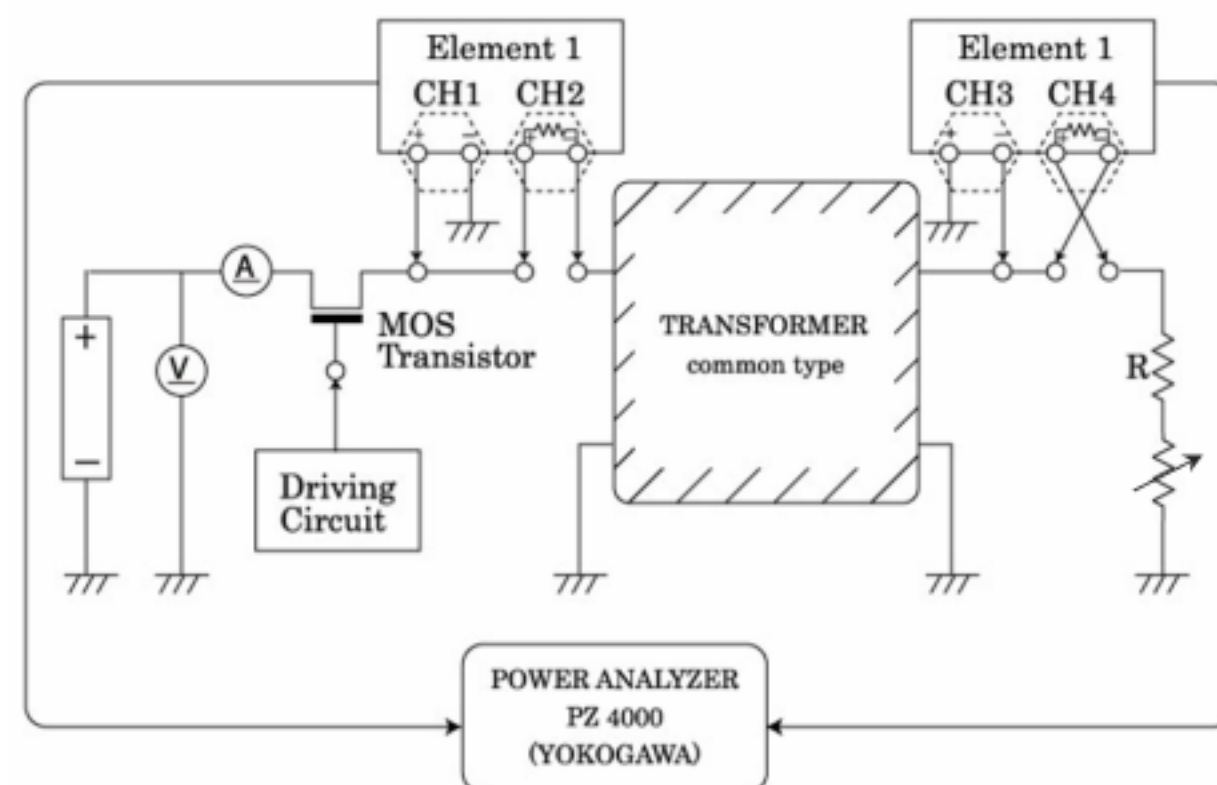
David Cagle: Still no sound

David Cagle: Sound on - Thanks

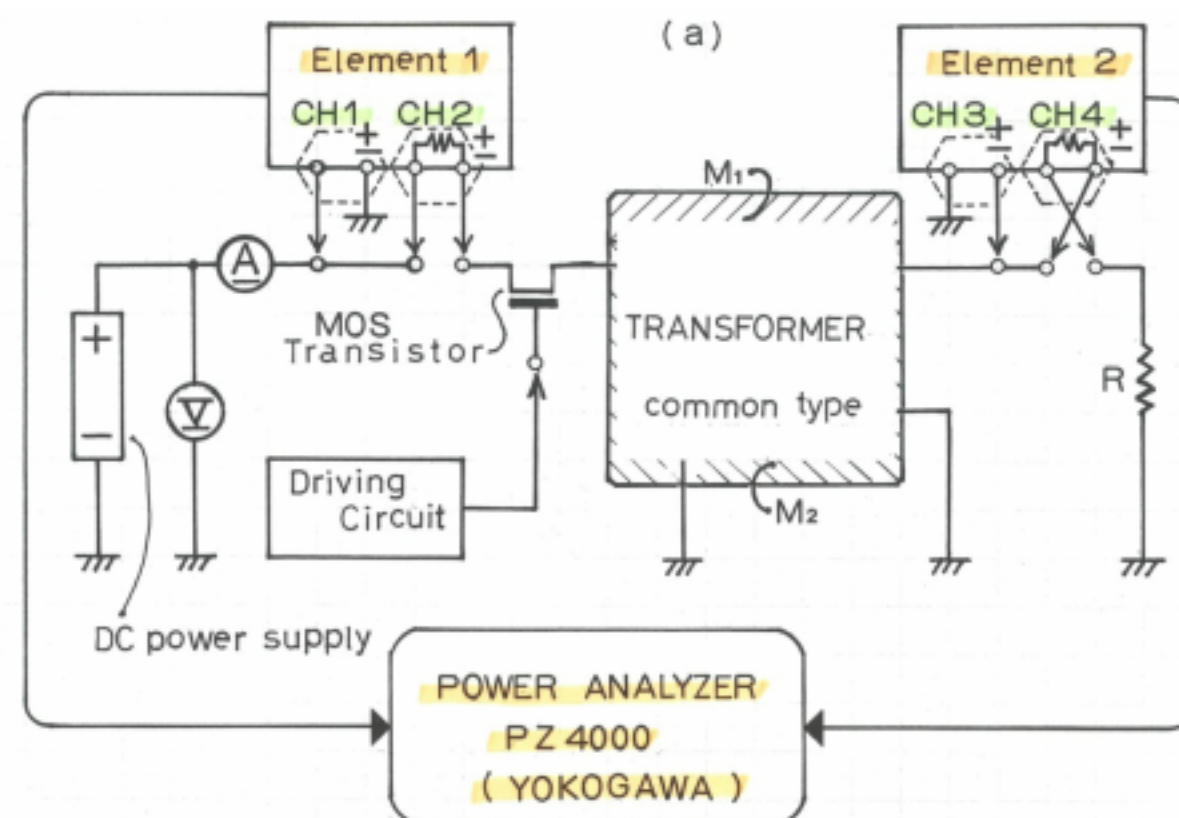
Steve Katinsky: Sound on here as well

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Electrical Circuit

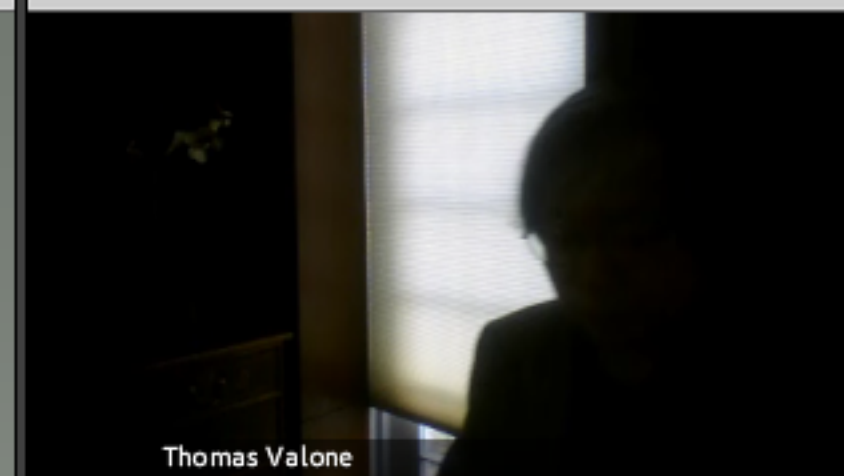


Electrical Circuit of Reference 3



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Video



Attendees (6)

▼ Hosts (1)

Thomas Valone

► Presenters (0)

▼ Participants (5)

David Cagle

Jason Owens

jay

the lovely brenda 2

Tom V

Chat (Everyone)

Miley/

David Cagle: Not getting sound

Steve Katinsky: Same here, no sound.

David Cagle: Still no sound

David Cagle: Sound on - Thanks

Steve Katinsky: Sound on here as well