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Frequency Response 8

THD 8

가 10

..... 13

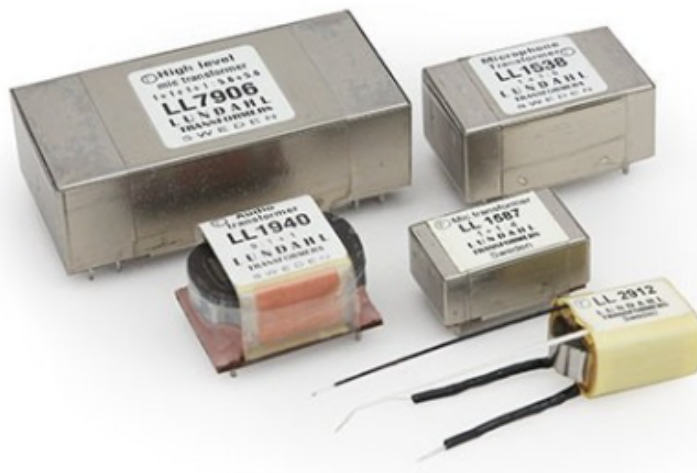
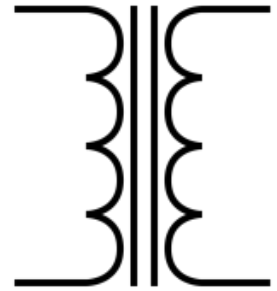
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(Transformer)

2 (1 2)
가

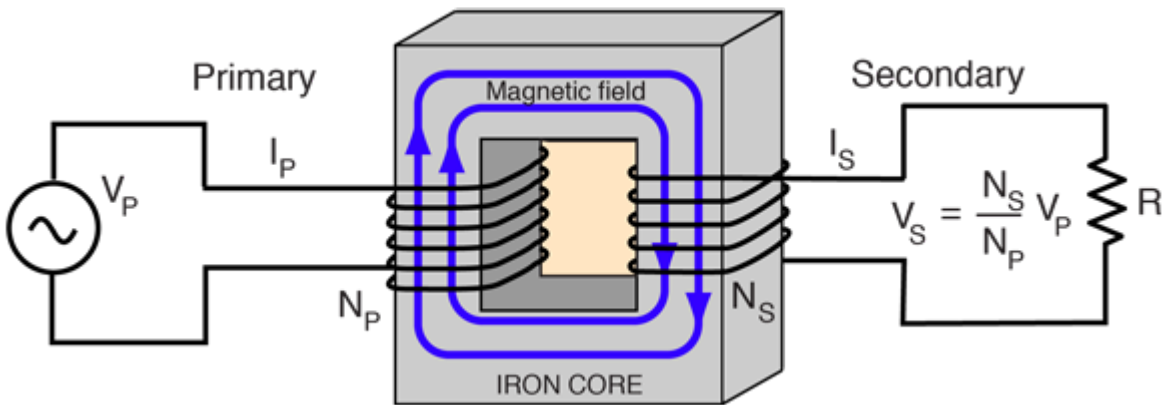
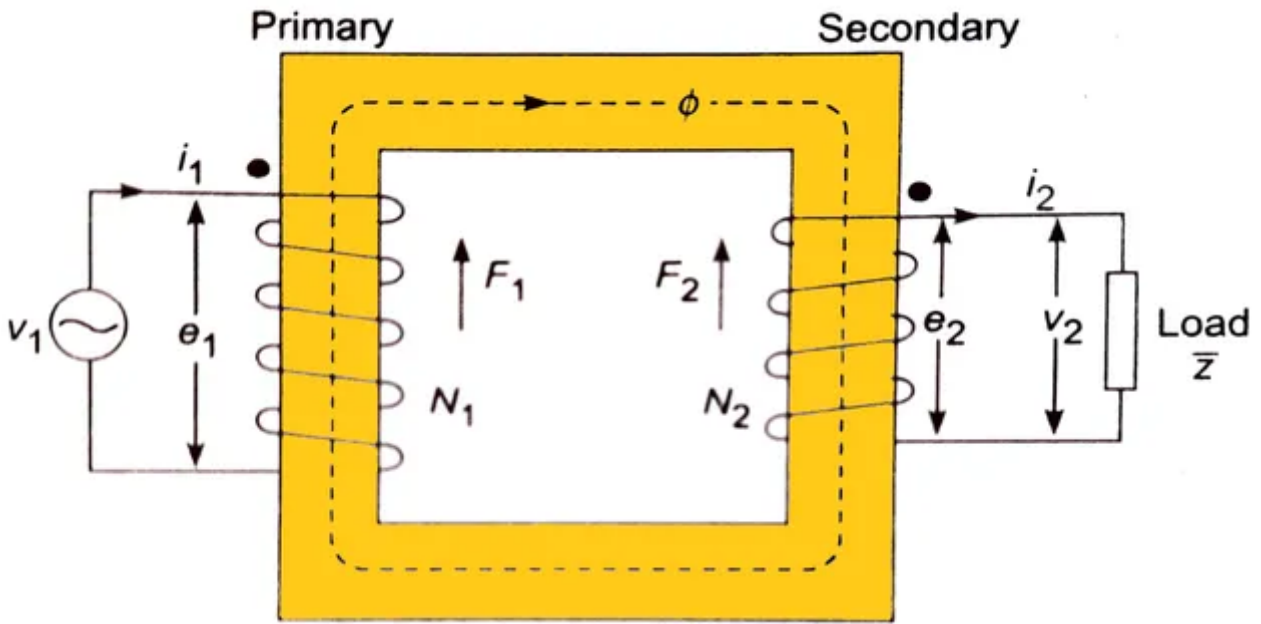


= 2 : 1 = 2 : 1

- : 가 1 ,
- : 가 1 ,

1 400 , 2 1200 , 120V 1 가 2

1200 : 400 = X : 120V
1200 / 400 = X / 120V,
X=360V



Ohm's law

$$R_P = \frac{V_P}{I_P}$$

Transformer relationship

$$V_P = V_S \frac{N_P}{N_S}$$

Power in = power out

$$I_P = \frac{I_S V_S}{V_P}$$

$$R_P = \frac{V_S \frac{N_P}{N_S}}{\frac{I_S V_S}{V_P}} = R \left(\frac{N_P}{N_S} \right) \left(\frac{V_P}{V_S} \right) = R \left(\frac{N_P}{N_S} \right)^2$$

가

(Watt)

¹⁾

가 100:200

100V,

1000Ω²⁾

$$V=100V \times \frac{200}{100}, V=200V$$

$$Z=1000 \times \frac{200^2}{100} = 40000\Omega$$

가 ³⁾

⁴⁾

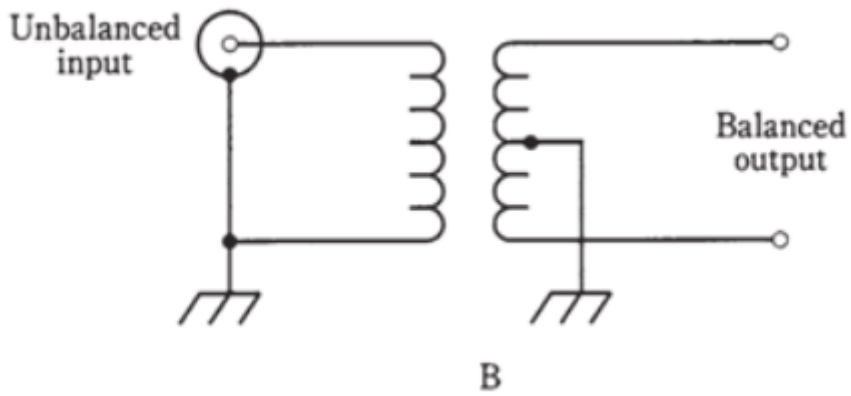
⁵⁾

, DI

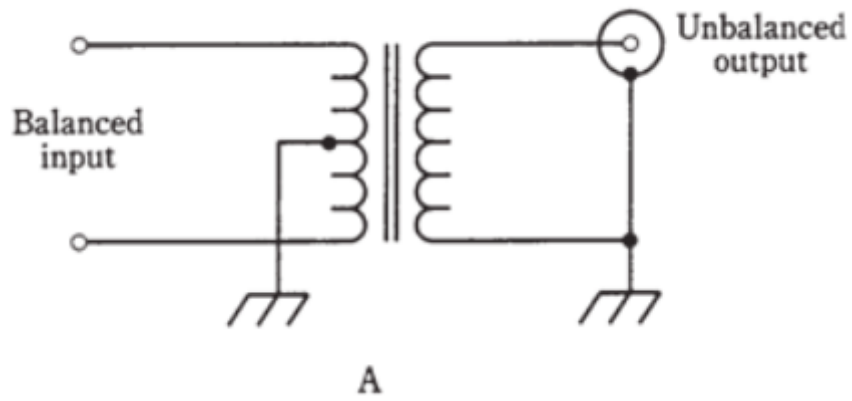
가

가

⁶⁾



가



Frequency Response

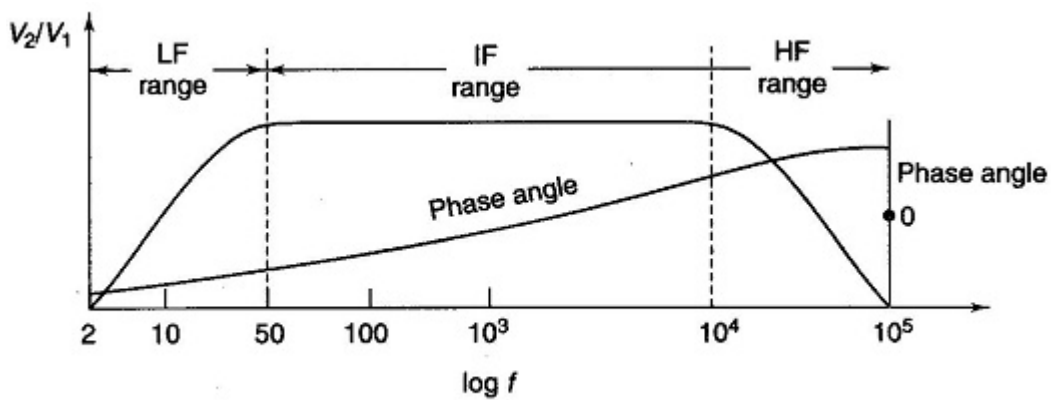
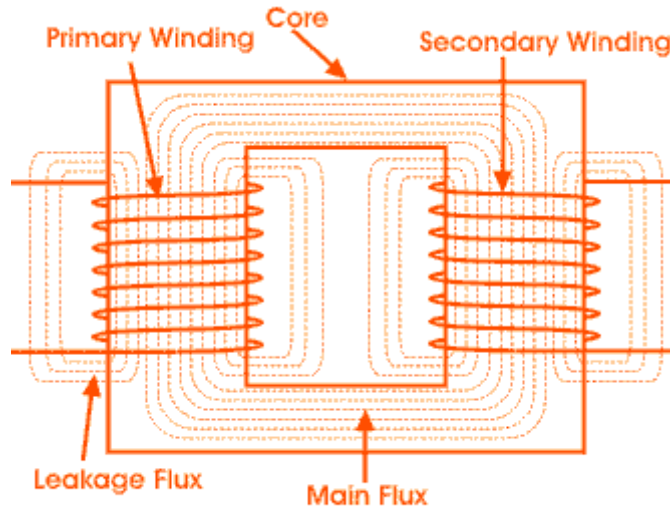


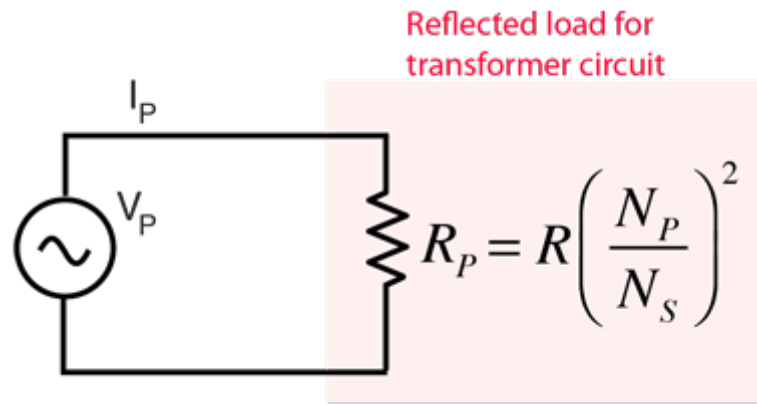
Fig. 3.73 Frequency response (V_2/V_1 vs $\log f$) of a transformer

THD

가 1 2 가 , , 2
가 1 , 2
. , THD가 .

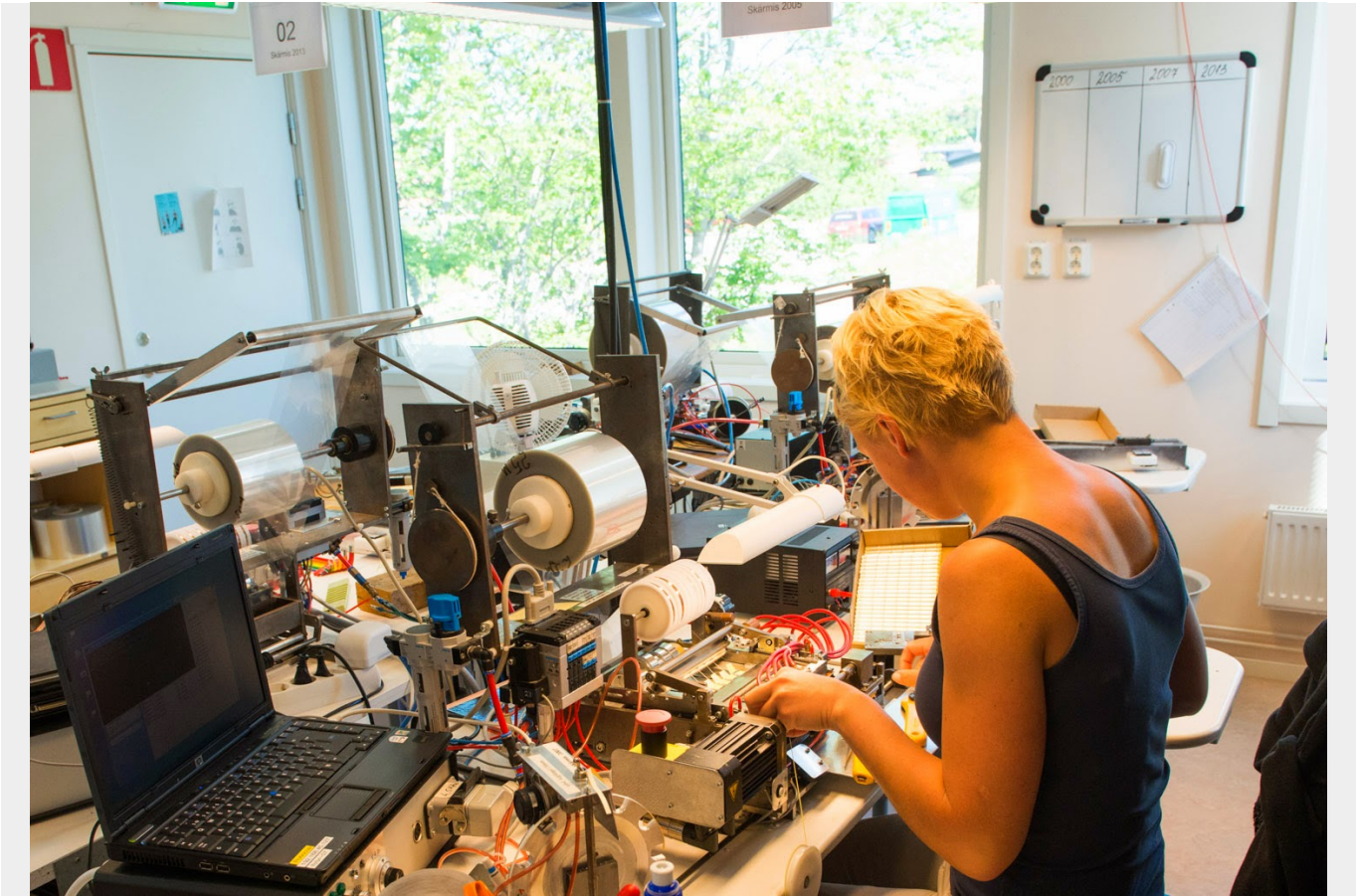


1 , 2 가 2 , 2 2 1
 , 2 가 2 , 2 2
 2 2 , 2 가 2 ,
 2 1 , 2 가 2 ,
 THD



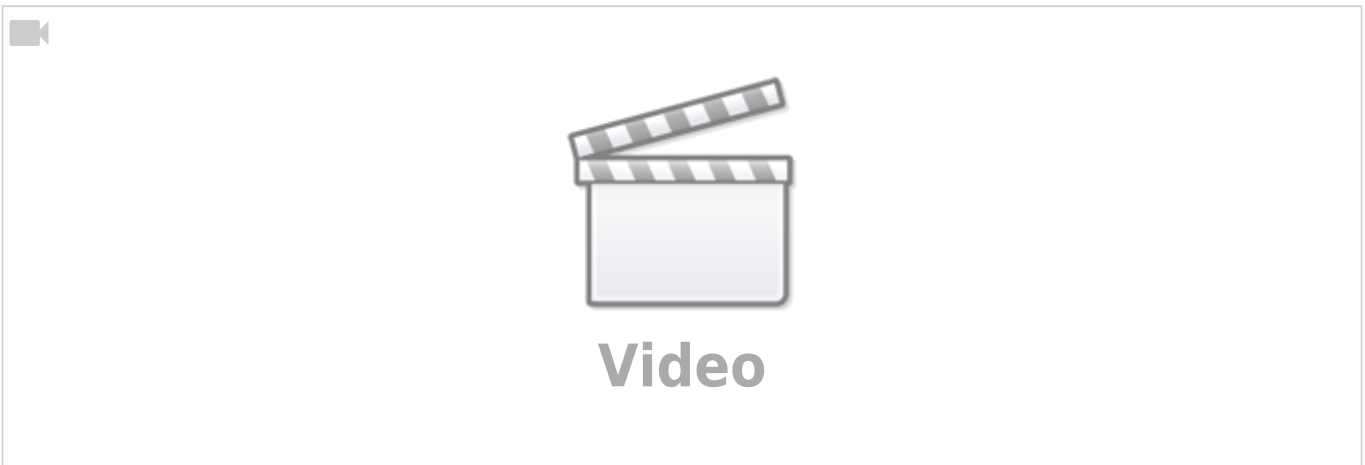


가 , 1 2 THD가
 “ ” 가 ,
 THD가 .
 가
 가 가 가
 THD 가 Troidal
 가



lundahl transformer

, 가 가 .



1)

2)

$$Watt = \frac{V^2}{R} = 10W$$

3)

$$Watt = \frac{V^2}{R} = \frac{40000}{4000} = 10W$$

4)

5)

6)

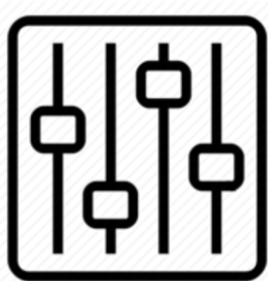
7)

High voltage plate

,

가

THD



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