

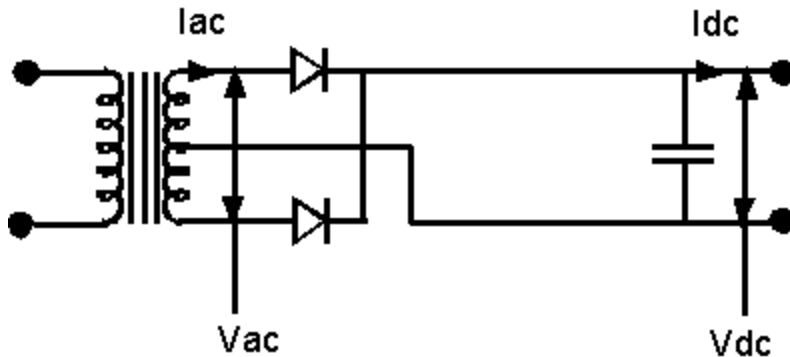
## 75 YEARS OF AUDIO TRANSFORMERS

### How to calculate your mains transformer ht voltage

[Click here for information about Sowter Custom designed mains transformers](#)

The voltage and current ratings for the HT winding can be calculated from the dc voltage and current using the formula below appropriate to your rectifier and smoothing circuit. The power rating for determining the size of the transformer is shown below as Pac (Watts).

#### CAPACITOR INPUT FILTER FULL WAVE



The formulae below allowances for the voltage difference due to the wave form factor. The voltage drop across the diodes and the resistance of the choke must be allowed for. We specify the Vac on full load so you do not need to allow for resistance of the transformer windings

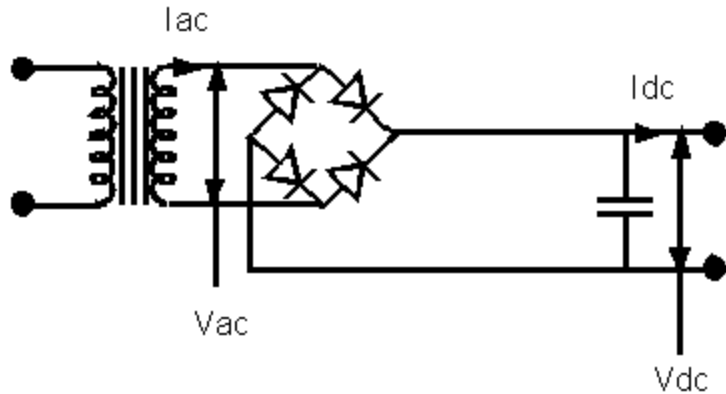
#### FULL WAVE

$$V_{ac} = V_{dc} \times 1.41$$

$$I_{ac} = I_{dc}$$

$$P_{ac} = P_{dc} \times 1.41$$

### CAPACITOR INPUT FILTER BRIDGE



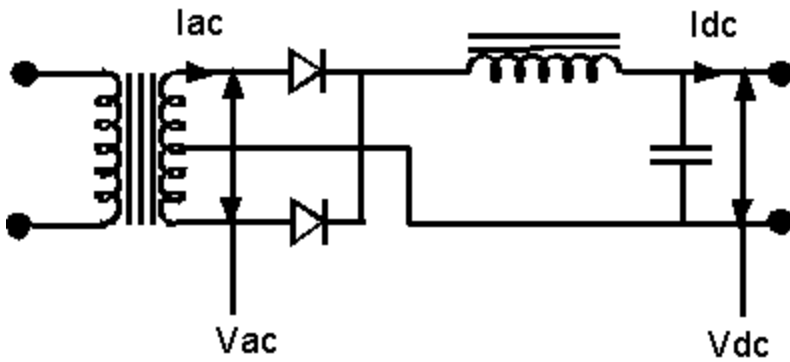
#### BRIDGE

$$V_{ac} = V_{dc} \times 0.71$$

$$I_{ac} = I_{dc} \times 1.61$$

$$P_{ac} = P_{dc} \times 1.14$$

### CHOKE INPUT FILTER(Special choke must be used) FULL



#### FULL WAVE

$$V_{ac} = V_{dc} \times 2.22$$

$$I_{ac} = I_{dc} \times 0.65$$

$$P_{ac} = P_{dc} \times 1.44$$

#### WAVE

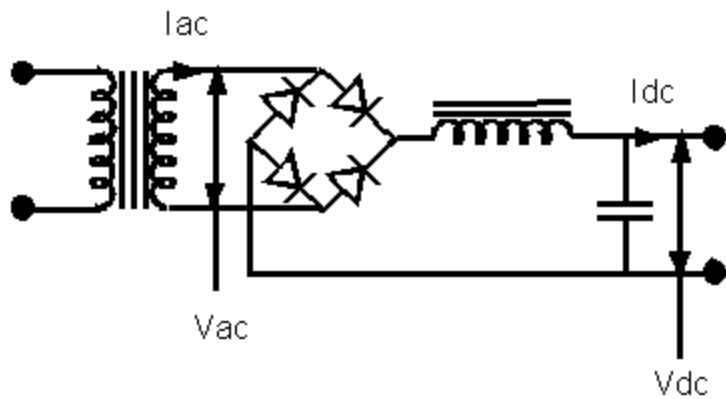
### CHOKE INPUT FILTER(Special choke must be used) BRIDGE

#### BRIDGE

$$V_{ac} = V_{dc} \times 1.11$$

$$I_{ac} = I_{dc} \times 1.06$$

$$P_{ac} = P_{dc} \times 1.18$$



EA Sowter Ltd Carnhill Transformers  
5 Burrell Road, St Ives, Cambridgeshire  
PE27 3LE United Kingdom

[sales@sowter.co.uk](mailto:sales@sowter.co.uk)  
Tel: +44(0)1480 462978  
Fax: +44(0)1480 496196