Alternating Current

1 Oscilloscopes

x-axis - Time base
y-axis - Y Sensitivity

The advantage of calculating peak to peak voltage over peak voltage is that it reduces the uncertainty in calculating the peak voltage.

2 Alternating and direct current

AC - Alternating Current - Current continuously changes direction
DC - Direct Current - Current flows in one(same) direction

Frequency - The number of waves passing a point per second (Hz)

3 Root mean square

Root mean square values are used to calculate average values for alternating current that are not zero

Peak voltage $= V_0$ Peak current$=I_0$

$$V_{RMS} = \frac{V_0}{\sqrt{2}}$$

$$I_{RMS} = \frac{I_0}{\sqrt{2}}$$

Power, $P = IV$

$$P_{RMS} = I_{RMS}V_{RMS} = \frac{I_0}{\sqrt{2}} \times \frac{V_0}{\sqrt{2}} = \frac{P_0}{2}$$