

Problems on AC

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The current amplitude in a pure inductor in a radio receiver is to be $250 \mu\text{A}$ when the voltage amplitude is 3.60 V at a frequency of 1.60 MHz (at the upper end of the AM broadcast band). If the voltage amplitude is kept constant, what will be the current amplitude through this inductor at 16.0 MHz ?

A pure inductance of 1.0H is connected across a 110V , 70Hz Source. Find the (a) reactance, (b) current and (c) peak value of current.

An alternating voltage, $E_{(\text{volts})} = 220\sqrt{2}\sin(100t)$ is connected to one microfarad capacitor through an ac ammeter. The reading of the ammeter shall be

Current in an ac circuit is given by $i = 2\sqrt{2}\sin[(\pi t + (\pi)/4)]$. Then find the average value of current during time $t=0$ to $t=1$ s.

Two alternating voltage generators produce emfs of the same amplitude E_0 but with a phase difference of $\frac{\pi}{3}$. The resultant EMF is

Find the r.m.s. and average values of the saw tooth waveform shown in Fig..

