





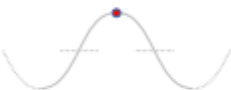





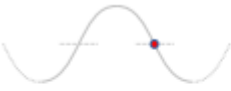

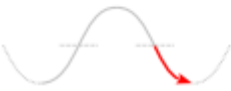



Inductor EMF Vs. Current Flow

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- [Interpreting Voltage & Current Waveforms](#)

Interpreting Voltage & Current Waveforms

Current	Inductor voltage	Comments
		<p>The current increase and its rate of change $\frac{di}{dt}$ increase too (acceleration).</p> <p>The emf voltage of the inductor increases, but its rate of change $\frac{dv}{dt}$ slow down (deceleration).</p>
		<p>Inflection point¹ of the increasing current curve: The current rate of change $\frac{di}{dt}$ is at its maximum¹ and emf voltage of the inductor reach a maximum <u>positive</u> voltage. $\frac{dv}{dt}=0$</p>
		<p>The current increase but its rate of change $\frac{di}{dt}$ now slow down (deceleration).</p> <p>The emf voltage of the inductor start to decreases, but its rate of change $\frac{dv}{dt}$ increases (acceleration).</p>
		<p>The current value reach a maximum amplitude, but the rate of change of the current $\frac{di}{dt}=0$</p> <p>The emf voltage of the inductor = 0 (The waveform have a zero crossing)</p>
		<p>The current start to decrease and its rate of change $\frac{di}{dt}$ increase (acceleration).</p> <p>The emf voltage of the inductor decreases, and its rate of change $\frac{dv}{dt}$ slow down (deceleration).</p>

		<p>Inflection point of the decreasing current curve: The current rate of change $\frac{di}{dt}$ is at its maximum and emf voltage of the inductor reach a maximum <u>negative</u> voltage.</p>
		<p>The current decrease and its rate of change $\frac{di}{dt}$ now slow down (deceleration). The emf voltage of the inductor start to increases, and its rate of change $\frac{dv}{dt}$ increases too (acceleration).</p>
		<p>The current value reach a minimum value (but maximum amplitude), the rate of change of the current $\frac{di}{dt} = 0$. The emf voltage of the inductor = 0 (The waveform have a zero crossing)</p>