

Forum for Electronics

C

3/14

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Circuit to Find value of inductor

+ Mark as Solved

cupoftea · Feb 6, 2022

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Feb 6, 2022

#1

C

cupoftea

Advanced Member level 3


Hi,

Please can you offer any improvements to the attached method of finding an inductor value? We dont have a (working) inductance meter. We also dont have a signal generator.

BTW, the scope is on DC coupled, *definetely_not* AC coupled. Scope probe is also on x1.

Apologies, I had a post on this approx 6 months ago, though fail to re-discover it now.

Attachments



Inductor value meas...

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#2

KS

KlausST

Super Moderator

Staff member

Hi,

Simple RL and a scooe coupld work. Switch ON and measure tau.

Or LC and a scope and measure resonance frequency.

A soundcard to generate sinewave and a scope ... and a RL. Measure the voktages across R and L. Even a DVM should do.

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X

Thus it would be interesting what inductors you want to test.


Klaus

Please don't contact me via PM, because there is no time to respond to them. No friend requests. Thank you.

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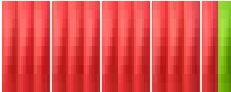
#3



betwixt

Super Moderator

Staff member



One way of doing it - but it would cost more than an inductance meter and risk damaging the inductor.

You don't mention the range of of inductance you want to measure but a simpler method is to feed AC from a signal generator through a variable resistor. Connect one scope input across the generator and across the inductor. Adjust the resistor so you get half the amplitude across the inductor then $R = XL$ so you can do some math based on the frequency to find L.

I would buy a £10 LCR meter!

Brian.

PLEASE – no friends requests or private emails, I simply don't have time to reply to them all.
It's better to share your questions and answers on Edaboard so we can all benefit from each others experiences.

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#4



FvM

Super Moderator

Staff member



<https://www.edaboard.com/threads/measuring-transformer-inductances-without-lcr-meter.400537/>

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Feb 7, 2022

#5

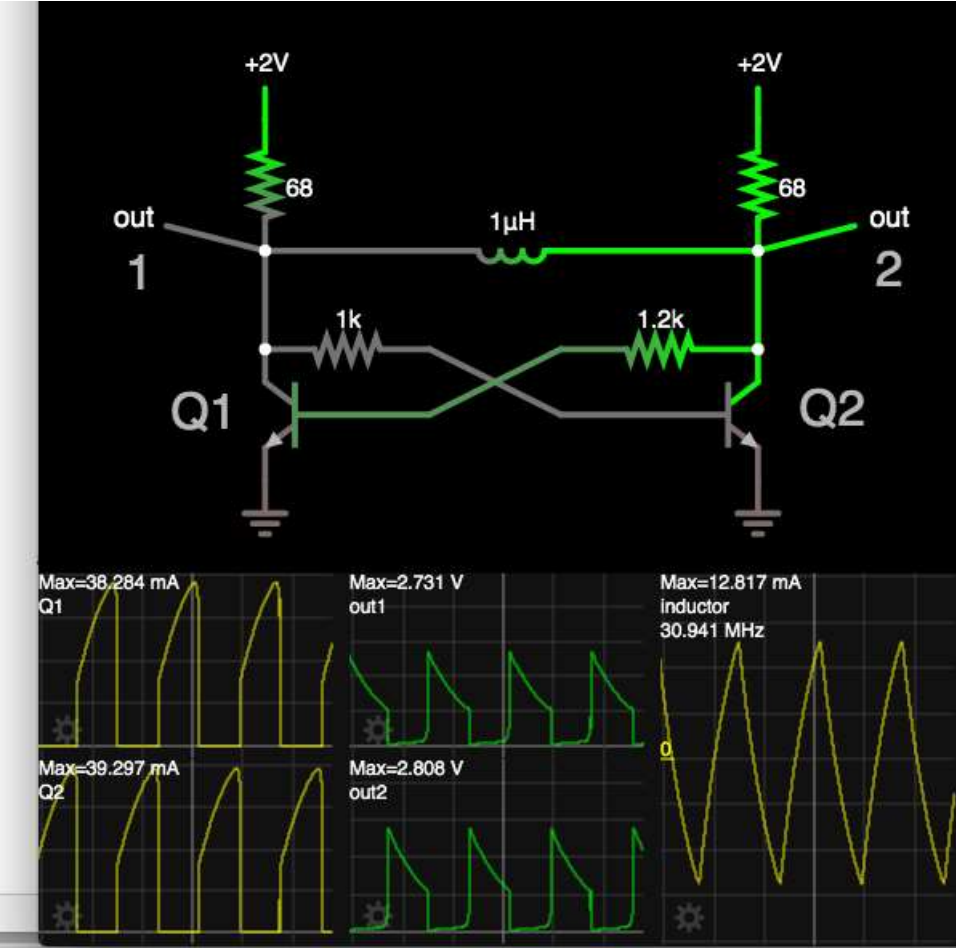
B

BradtheRad

Super Moderator

Staff member

Astable multivibrator based on one Inductor creating oscillations. Frequency is partially determined by Henry value. Frequency also has to do with Ampere level through inductor as well as L/R time constant.



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Saturday at 5:58 PM

#6

B

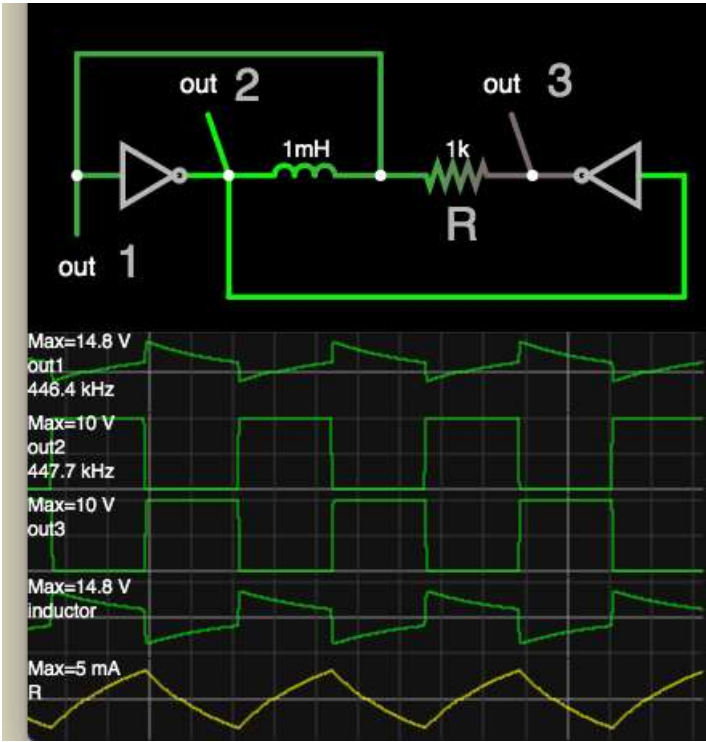
BradtheRad

Super Moderator

Staff member

Another oscillator. Surprisingly simple, easy to get operating. Inductor & resistor bridged between two invert-gates. Frequency

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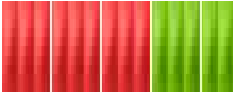


Yesterday at 12:59 AM

#7



cupoftea
Advanced Member level 3



BradtheRad that looks great, And also i think with ferrite inductors, the fact that the inductor current is very low wont matter?

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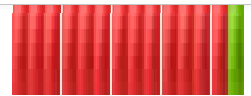
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B

Super Moderator

Staff member

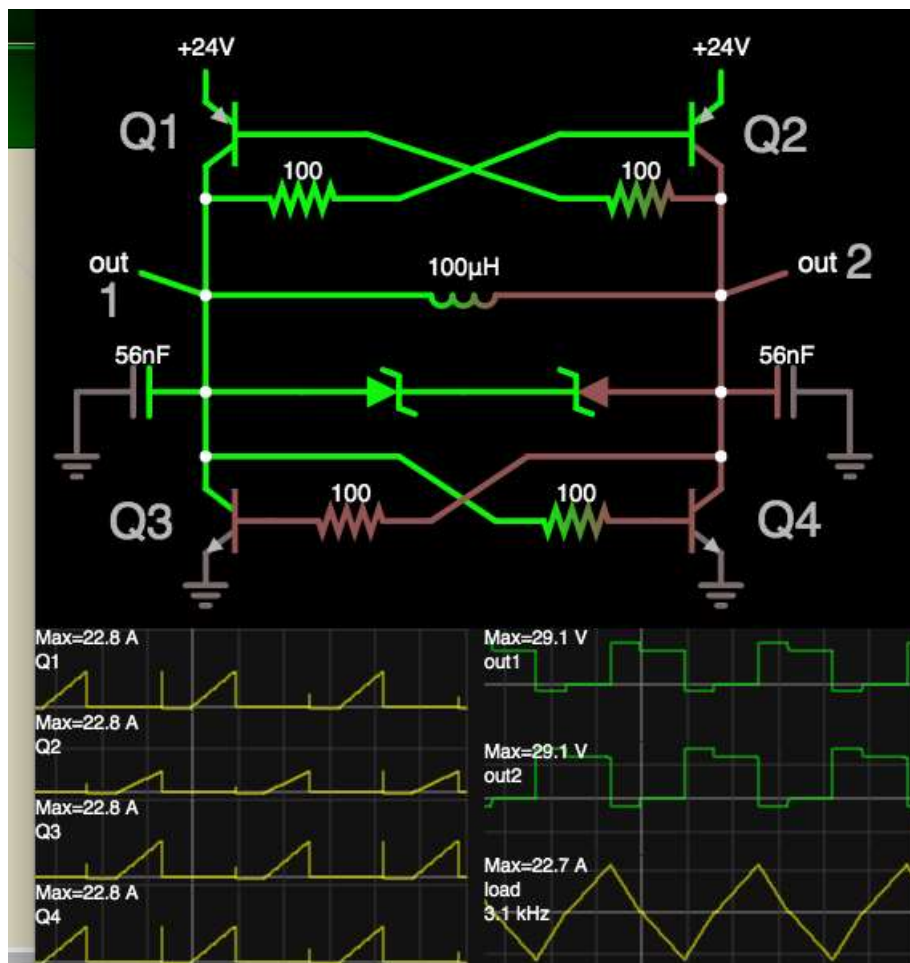
[cupoftea said:](#)

with ferrite inductors, the fact that the inductor current is very low wont matter?

Since a real invert-gate IC (4069) is low power, I put sufficient R value in the simulation to reflect that. In hardware I vary the resistance, down to very low ohm values. This does not draw high current from the 4069 IC, since its output stage can't provide more than a few mA. Oscillations do continue.

To handle greater power, there is the full H-bridge. Oscillations arise from the inductor value. Transistors are cross-biased.

The zener diodes and capacitors are a contrivance in the simulation for reducing inductive spikes. Sinewaves are obtainable by substituting a capacitor for the zeners. This creates an LC tank circuit.

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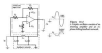
^ 0 v



Today at 8:32 AM

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also building a Colpitts osc with known C values - if you can measure the freq of oscillation - you can calc the L



[Colpitts Oscillator using Op Amp | BJT Colpitts Oscillator](#)

The Colpitts Oscillator using Op Amp circuit show in Fig. 16-4 is similar to the op-amp phase shift oscillator, except that an LC network is used to produce
www.eeeguide.com

" In theory, theory and practice are the same; in practice, the theory is less like practice than the theory suggests ..."

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^ 0 v



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