



Help Us Get You
Chua's Circuits!!



USING AN INDUCTOR

Although this site recommends using a [gyrator circuit](#), there may be some people who insist on using a real inductor. The circuit we use here requires **around 18mH** inductance, but the internal resistance should be **less than 30Ω**. This type of inductor may be difficult to find and purchase. There are only a few 'one-stop shop' electronics parts suppliers (including: [Digi-Key](#), [Jameco](#), [Mouser](#), and [Newark](#)) but only two of them supply the inductors we need. I have also found suitable inductors on [Coilcraft](#).

There are only 2 Coilcraft inductors that I have found to work so far: the PCH-45X-186KLT and the PCH-45X-226KLT.

Coilcraft Part #	Inductance	Internal Resistance
PCH-45X-186_LT	18mH	13.2 Ω
PCH-45X-226_LT	22mH	15.2 Ω

The PCH series is shown in [Figure A](#) and the inductors listed above are shown on a breadboard in [Figure B](#). You can find a comparison of various PCH inductors [here](#). The inductors use the same cores, with varying wraps of wire.

FIGURE A:
Coilcraft PCH Series

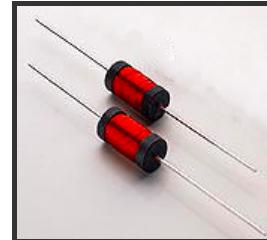


FIGURE B:
Coilcraft PCH inductors

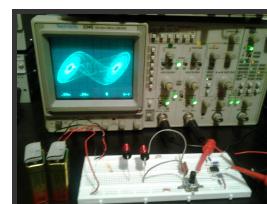
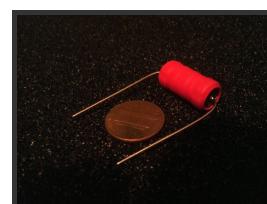


FIGURE C:
Newark 53k4801



There is also one inductor from Newark that works well--the [53K4801](#).

Newark Part #	Mfg.	Mfg. Part #	Inductance	Internal Resistance
53K4801	Vishay Dale	IHD3EB223L	15mH	22 Ω

You can see this inductor in [Figure C](#) with a penny for size-comparison.

FIGURE D:
Mouser inductors A-D

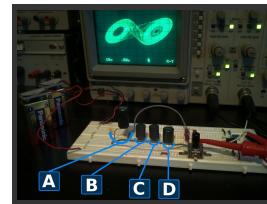
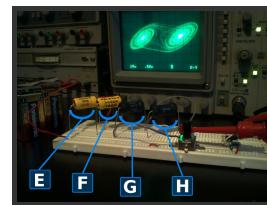


FIGURE E:
Mouser inductors E-H



Finally, I have found a number of inductors from Mouser that work quite well. Their specs are listed below in the table and they are shown in [Figure D](#) and [Figure E](#):

Pic. Ref.	Mouser Part #	Mfg.	Mfg. Part #	Inductance	Resistance
A	580-19R226C	Murata PS	19R226C	22mH	16 Ω
B	434-02-223J	Fastron	07MFG-223J-50	22mH	15 Ω
C	434-02-183J	Fastron	07MFG-183J-50	18mH	18 Ω
D	652-RL181S-183J-RC	Bourns	RL181S-183J-RC	18 mH	14 Ω
E	807-4590R-186K	API Delevan	4590R-186K	18mH	14.5 Ω
F	807-4590R-226K	API Delevan	4590R-226K	22mH	17 Ω
G	542-5900-273-RC	J.W. Miller	5900-273-RC	27mH	19.2 Ω
H	542-5900-223-RC	J.W. Miller	5900-223-RC	22mH	17.5 Ω

A special thanks to [www.chuacircuit.com](#) for recommending Coilcraft for good inductors! If anyone has any other experience with ordering inductors for Chua circuits, [please contact me](#).