

General Description

HGXXL series of spiral inductors are formed by photolithography and plating techniques on fused quartz substrates. They eliminate the need for hand forming and “staking” of coil in hybrid circuits. They provide uniformity, durability and repeatability in circuit fabrication.

The coils are SiN coated to protect from ambient contaminants, and to eliminate the need for conformal coating. Quartz substrates are rugged to reduce dielectric losses. Chips may be bonded using either conductive or non conductive epoxies, and wire bonded with gold wire or ribbon by thermo-compression bonding.

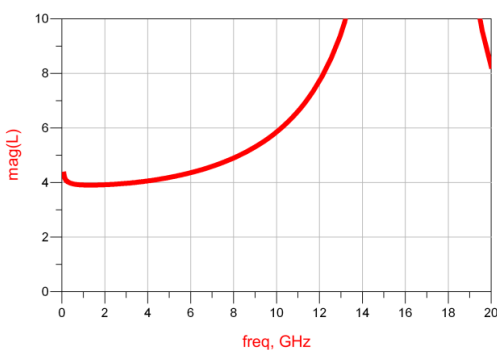
The spiral inductors are ideally suited for bias injection into oscillators, amplifiers and microwave switches (bias tees). They can also be used to bias tuning variactors, PIN diodes, transistors and monolithic circuits. Generally they can be used for RF and microwave circuit input and output matching. These spiral elements provide extreme freedom from in band resonance to very smooth wide frequency response.

Electrical Specifications($T_A=25\text{ }^\circ\text{C}$)

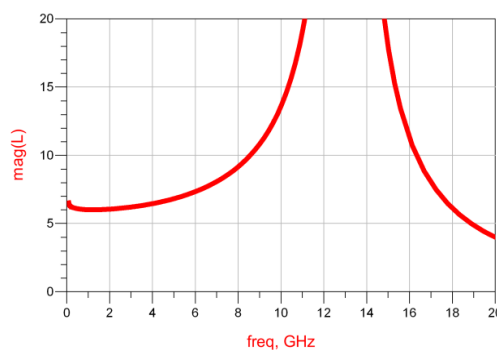
Part Number	Inductance (nH)(typ.)	Rs@DC (Ohm)	Rs@GHz (Ohm)	Q@GHz	Resonant Frequency (GHz)	Chip Size (mm×mm)
HG05L	5	1.0	3.7/4.0	26.5/4	16.5	0.75×0.75
HG07L	7.5	1.3	6.0/4.0	27/4	12.8	0.8×0.8
HG10L	10	1.6	8.0/4	26/4	11.3	0.8×0.8
HG15L	15	2.1	5.6/4	26.5/4	8.5	0.8×0.8
HG20L	20	2.6	7.5/2	28.5/2	7	0.8×0.8
HG50L	50	5.1	10.6/1	28.5/1.5	2.8	0.95×0.95
HG90L	90	8	26.3/1	26.5/1	1.8	1.1×1.1
HG200L	200	14	30/1	23/1	1.0	1.37×1.37

Inductor Value vs. Frequency

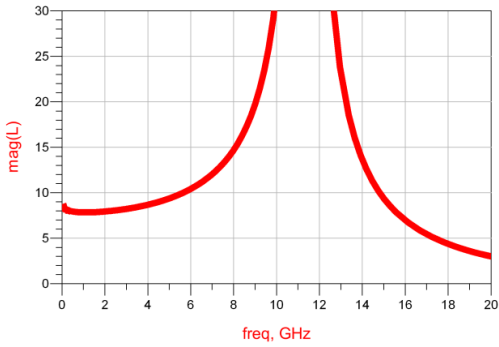
(1)HG05L



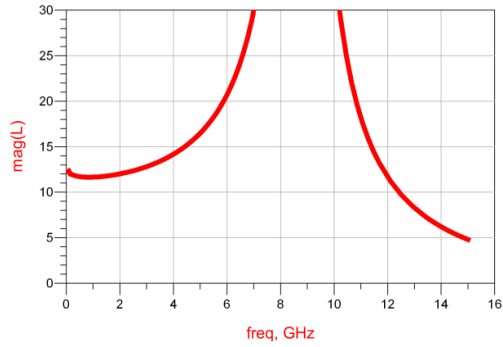
(2) HG07L



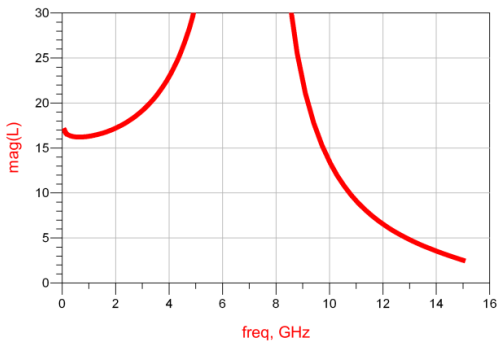
(3)HG10L



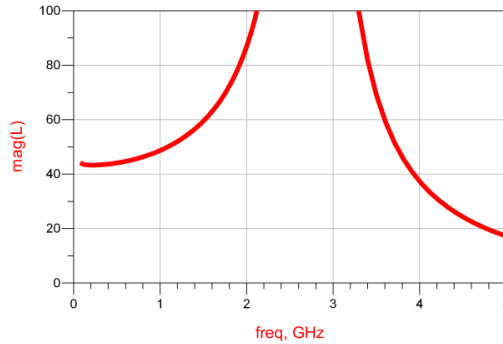
(4)HG15L



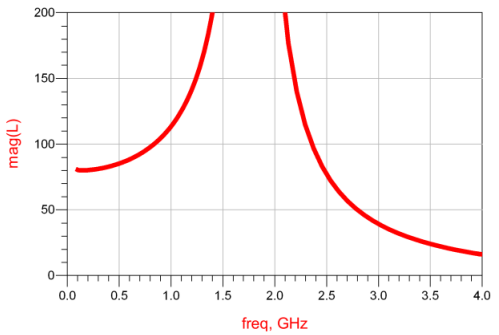
(5)HG20L



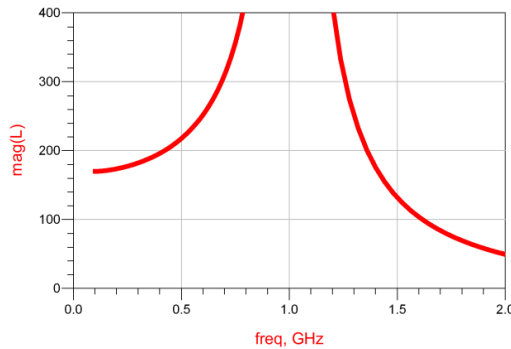
(6)HG50L



(7)HG90L

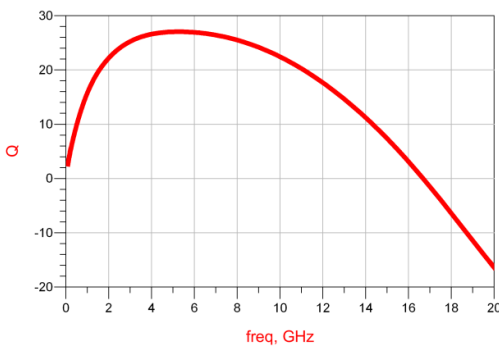


(8)HG200L

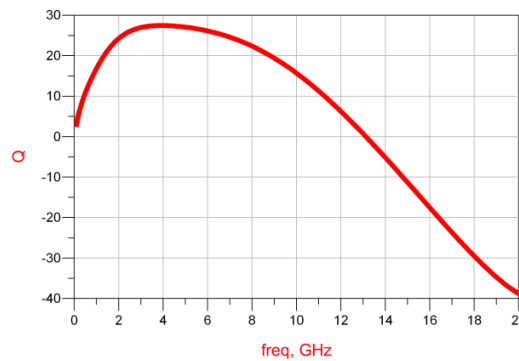


Q Value vs. Frequency

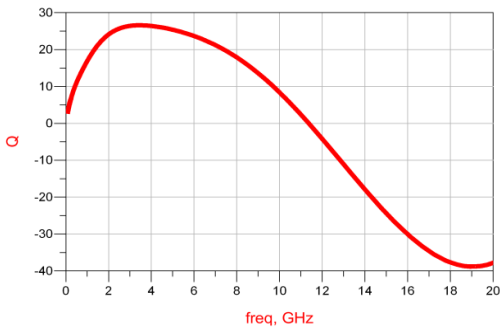
(1)HG05L



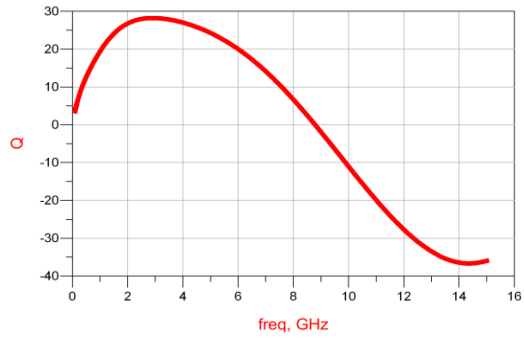
(2)HG07L



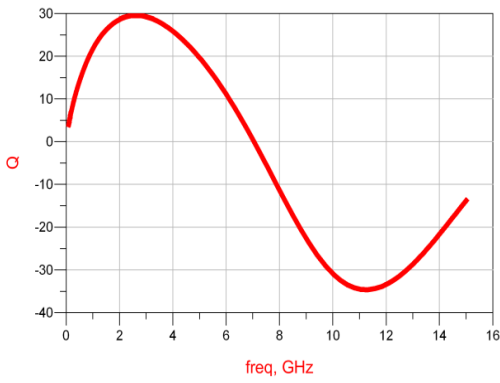
(3)HG10L



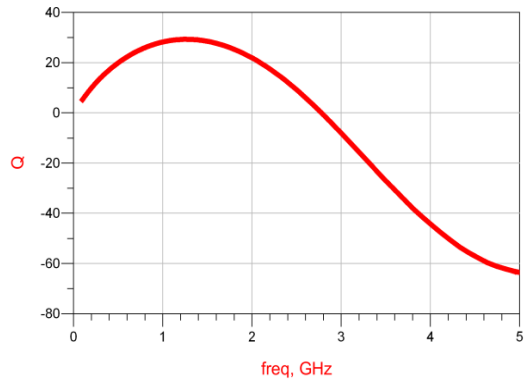
(4)HG15L



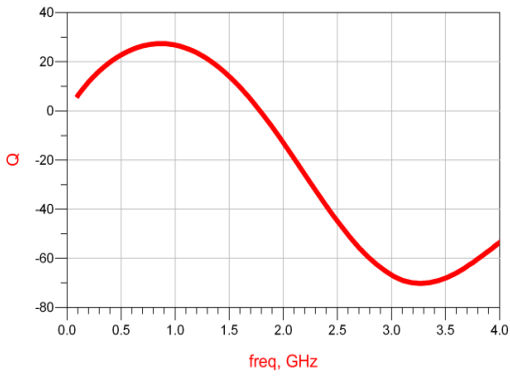
(5)HG20L



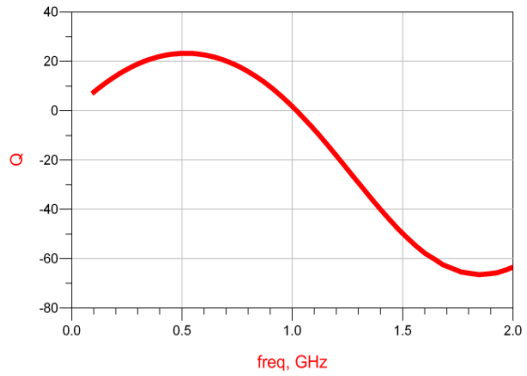
(6)HG50L



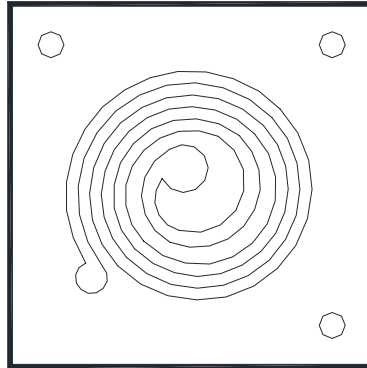
(7)HG90L



(8)HG200L

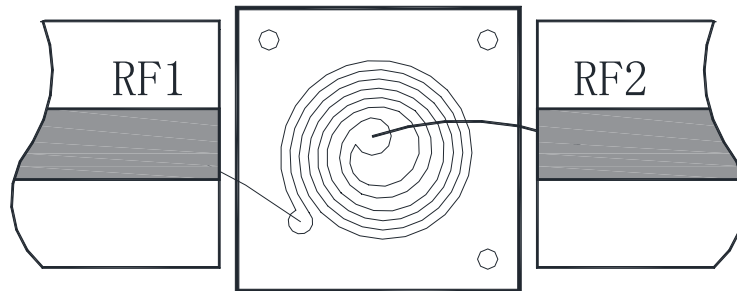


Outline Drawing

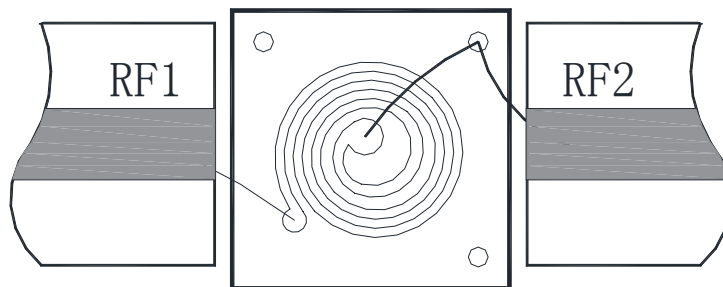


Assembly Diagram

(1)



(2)



Notes:

1. The inductors should be stored in a dry and nitrogen environment, and used in a clean environment.
2. Quartz material is brittle, can not touch the surface of the chip, must be careful when using.
3. The back of the inductor is not metalized, bonding with conductive adhesive.
4. The inductors use $\Phi 25\mu\text{m}$ gold wire bonding, suggested length of gold wire 250~400 μm .