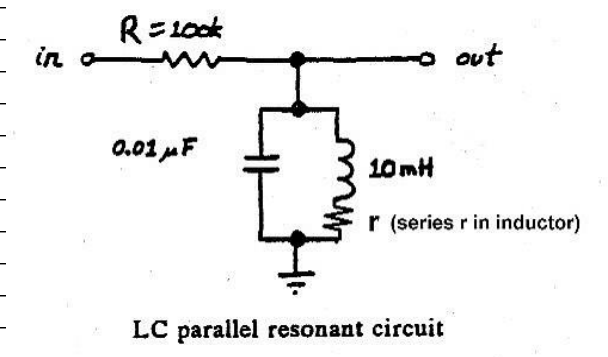
RLC Bandpass with real inductor

r (ohm)	C (F)	L (H)	R (ohm)	Vout/Vin	f_0 (Hz)	Q	f_{3dB} low	f_{3dB} high	phase shift, ϕ @f--> 0	@f = f_0	@f--> high	
0	1.00E-08	1.00E-02	100000	1.0000	15916	100.000	15836	15995	-90	0	+90	IDEAL
25	1.00E-08	1.00E-02	100000	0.2857	15911	100.000	15836	15995				ACTUAL
25	1.00E-08	1.00E-02	100	0.9975	15911	0.100	1576	160731				
0	1.00E-07	1.00E-03	100000	1.0000	15916	1000.000	15908	15923				
25	1.00E-07	1.00E-03	100	0.8000	15410	1.000	9836	25752				
25	1.00E-07	1.00E-03	100000	0.0040	15410	1000.000	15908	15923				



LC parallel resonant circuit

$$|H|(\omega) = \left[1 + \frac{rR}{(\omega L)^2 + r^2} + jR\left(\omega C - \frac{1}{\omega L + (r^2/\omega L)}\right)\right]^{-1}$$

$$\emptyset = -\tan^{-1} R(\omega C - \frac{1}{\omega L})$$
(ideal case)

$$Q = R\sqrt{\frac{C}{L}}$$ (ideal case)