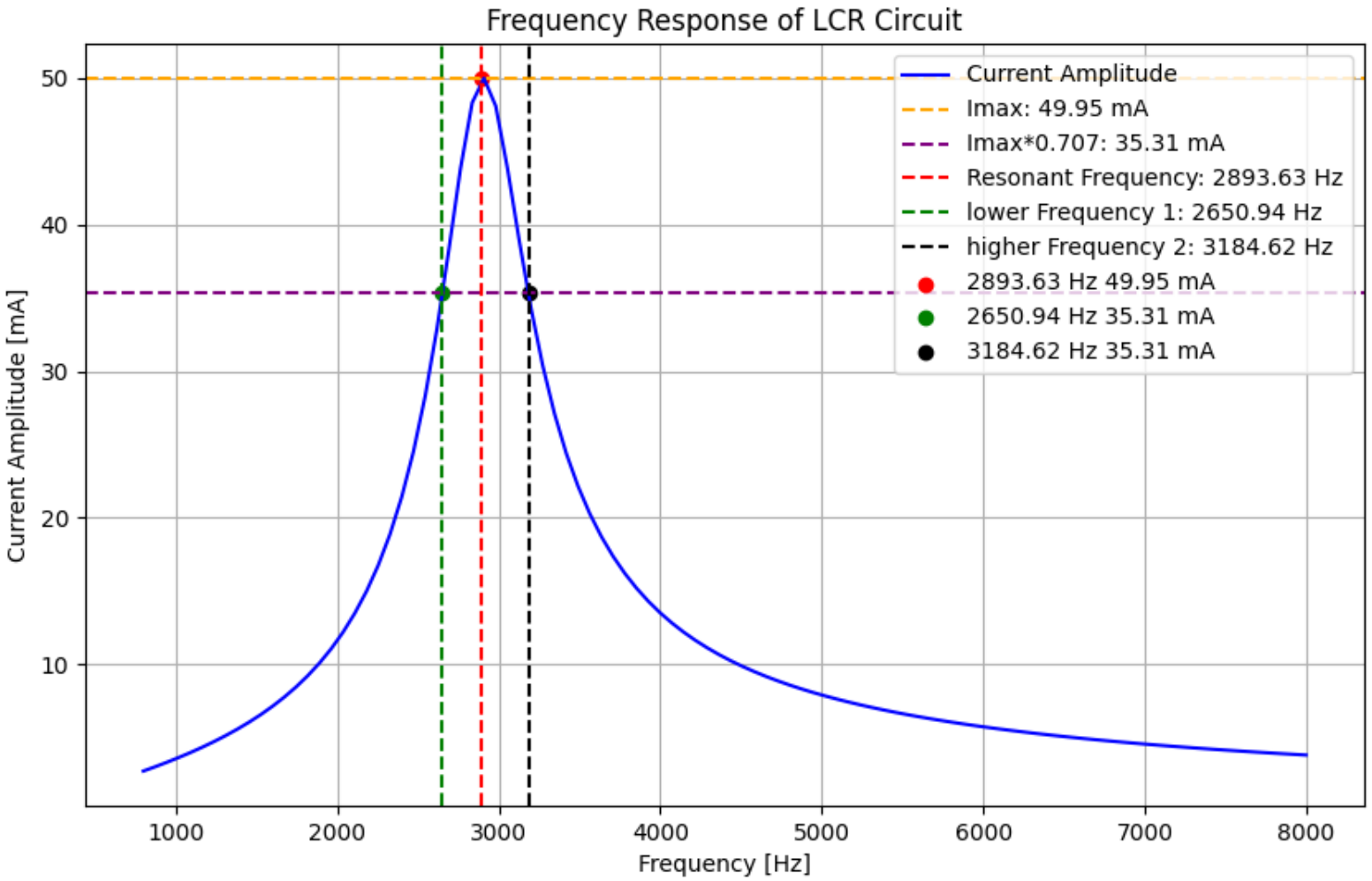
electrical damping for an LCR circuit R= 100.0

frequency hz	Current (mA)
800.0	2.7153876227695615
872.7272727272727	3.0081411566733873
945.4545454545455	3.314608304242754
1018.1818181818182	3.636766343337203
1090.909090909091	3.9768643011522387
1163.6363636363637	4.337479591498615
1236.3636363636365	4.721588091462553
1309.090909090909	5.132651592991717
1381.818181818182	5.574727888162486
1454.5454545454545	6.052610579412937
1527.2727272727275	6.5720082650013225
1600.0	7.139776351693116
1672.7272727272727	7.764219851866539
1745.4545454545455	8.455492797210212
1818.1818181818182	9.226130291908767
1890.909090909091	10.09176402080222
1963.6363636363637	11.072092801245171
2036.3636363636365	12.19220794062101
2109.090909090909	13.484408264380162
2181.818181818182	14.990673825823663
2254.545454545455	16.765968666928767
2327.2727272727275	18.882407732572794
2400.0	21.433738287003738
2472.727272727273	24.537652987302124
2545.4545454545455	28.327745251392866
2618.181818181818	32.91183707571431
2690.909090909091	38.24193441359169
2763.636363636364	43.81885760603956
2836.3636363636365	48.333986734440415
2909.0909090909095	49.996059132294235
2981.818181818182	48.1095123935568
3054.545454545455	43.861578260448894

3127.2727272727275	38.938498990309306
3200.0	34.34073414460227
3272.727272727273	30.39911378047795
3345.4545454545455	27.122596386714932
3418.1818181818185	24.41686450295275
3490.909090909091	22.173494007292238
3563.636363636364	20.29777981558757
3636.3636363636365	18.713843641720402
3709.0909090909095	17.36272314494276
3781.818181818182	16.198976673042637
3854.545454545455	15.187517957819763
3927.2727272727275	14.301077560234546
4000.0000000000005	13.518275720895389
4072.727272727273	12.822189371008372
4145.454545454546	12.199292493146823
4218.181818181818	11.638671068884278
4290.909090909091	11.131438122341814
4363.636363636364	10.670294504891395
4436.363636363636	10.249196265783679
4509.09090909091	9.863100483547747
4581.818181818182	9.507769306704246
4654.545454545455	9.179617543590707
4727.272727272728	8.87559311467713
4800.0	8.593082516428694
4872.727272727273	8.329835481711086
4945.454545454546	8.083904493934169
5018.181818181819	7.853595884893799
5090.909090909091	7.637430034186015
5163.636363636364	7.434108771389081
5236.363636363637	7.24248851747162
5309.09090909091	7.06155802917862
5381.818181818182	6.89041985810166
5454.545454545455	6.728274825351587
5527.272727272728	6.574408958149098
5600.0	6.428182447129129

5672.727272727273	6.289020270734442
5745.454545454546	6.156404201687921
5818.181818181819	6.029865964609004
5890.909090909091	5.9089813567016725
5963.636363636364	5.793365177600577
6036.363636363637	5.682666841828573
6109.09090909091	5.576566569354214
6181.818181818182	5.474772067566017
6254.545454545455	5.377015632471867
6327.272727272728	5.283051608763544
6400.000000000001	5.192654158087889
6472.727272727273	5.105615292853599
6545.454545454546	5.0217431395051175
6618.181818181819	4.940860400673374
6690.909090909091	4.862802990175338
6763.636363636364	4.787418818647229
6836.363636363637	4.714566710793516
6909.09090909091	4.644115437923801
6981.818181818182	4.5759428517201055
7054.545454545455	4.509935107099055
7127.272727272728	4.445985963665462
7200.000000000001	4.383996156643349
7272.727272727273	4.323872829357099
7345.454545454546	4.2655290203511385
7418.181818181819	4.208883199108609
7490.909090909092	4.153858845079694
7563.636363636364	4.100384065377519
7636.363636363637	4.048391247059114
7709.09090909091	3.9978167403938194
7781.818181818182	3.9486005699426885
7854.545454545455	3.900686170638946
7927.272727272728	3.854020146379322
8000.0	3.808552048915394



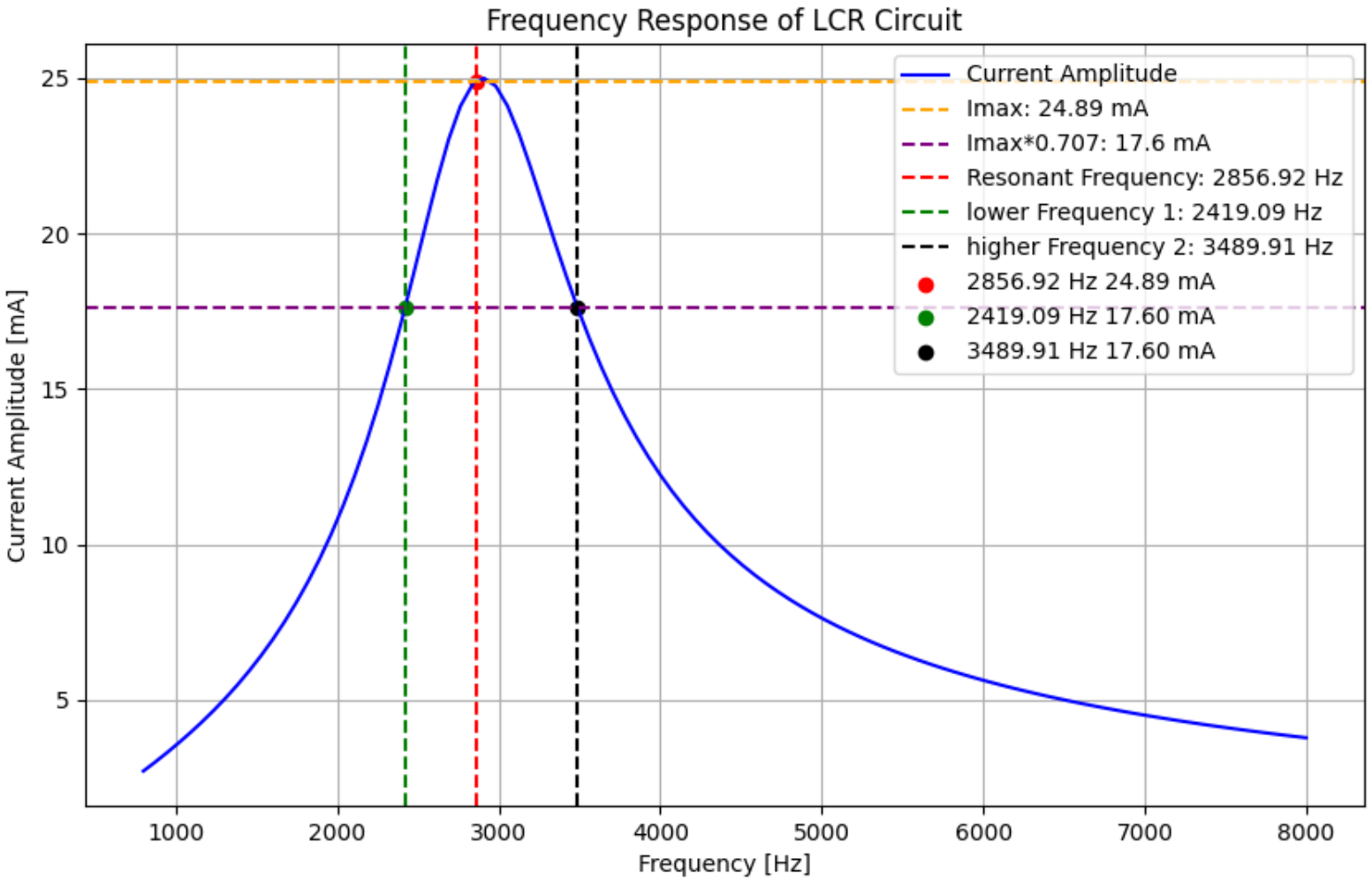
L = 0.03 H, R= 100.0 ohm C = 1e-07 F , V = 5.0 V,
I max = 49.948 mA
I max * 0.707 = 35.313 mA
Resonant frequency = 2893.626 Hz
Resonant frequency = 2893.626 Hz
Band width= fh -fl = 3184.622 - 2650.944 hz
Band width = 533.678 Hz
Quality factor = fr/band width = 2893.626/533.678
Quality factor = 5.422

electrical damping for an LCR circuit R= 200.0

frequency hz	Current (mA)
800.0	2.7034538875482395
872.7272727272727	2.991940729596366
945.4545454545455	3.2929721864571113
1018.1818181818182	3.6082453222390565
1090.909090909091	3.9396555587551516
1163.6363636363637	4.289330846561887
1236.3636363636365	4.659671521369779
1309.090909090909	5.053396738095594
1381.818181818182	5.473598365533354
1454.5454545454545	5.923803079831938
1527.2727272727275	6.408042992872529
1600.0	6.930934280315489
1672.7272727272727	7.4977615686119155
1745.4545454545455	8.114562678399468
1818.1818181818182	8.788202654724792
1890.909090909091	9.52641610425172
1963.6363636363637	10.337779900360237
2036.3636363636365	11.231549981545122
2109.090909090909	12.217250129034037
2181.818181818182	13.30383009618592
2254.545454545455	14.49811123434274
2327.2727272727275	15.802122029550427
2400.0	17.20885455192195
2472.727272727273	18.696117388941563
2545.4545454545455	20.218876309133908
2618.181818181818	21.70223975167344
2690.909090909091	23.040091583843296
2763.636363636364	24.106477442115807
2836.3636363636365	24.783697310778166
2909.0909090909095	24.999507347854266
2981.818181818182	24.753278608769797
3054.545454545455	24.113583246404843

3127.2727272727275	23.189808284079103
3200.0	22.097244950336755
3272.727272727273	20.932934481443112
3345.4545454545455	19.766670214738124
3418.1818181818185	18.642522154224483
3490.909090909091	17.584743363746526
3563.636363636364	16.604092002423407
3636.3636363636365	15.702929070983762
3709.0909090909095	14.878804395306986
3781.818181818182	14.12677940920293
3854.545454545455	13.440845370880263
3927.2727272727275	12.814745197152801
4000.0000000000005	12.242421919972596
4072.727272727273	11.718242038589192
4145.454545454546	11.237087652105801
4218.181818181818	10.794374961009284
4290.909090909091	10.386033628862583
4363.636363636364	10.00846721419648
4436.363636363636	9.658506221136804
4509.09090909091	9.333360142144214
4581.818181818182	9.030571817954476
4654.545454545455	8.747975674282436
4727.272727272728	8.483660395935255
4800.0	8.23593605401212
4872.727272727273	8.003305422670508
4945.454545454546	7.7844390958541005
5018.181818181819	7.578153974343655
5090.909090909091	7.383394699892224
5163.636363636364	7.199217642896884
5236.363636363637	7.024777089753215
5309.09090909091	6.859313318316248
5381.818181818182	6.702142290799494
5454.545454545455	6.552646731050235
5527.272727272728	6.410268386671226
5600.0	6.274501305783144

5672.727272727273	6.144885983542913
5745.454545454546	6.021004255212552
5818.181818181819	5.9024748310316015
5890.909090909091	5.788949383805998
5963.636363636364	5.680109113382737
6036.363636363637	5.57566172338912
6109.09090909091	5.475338755090594
6181.818181818182	5.3788932312324
6254.545454545455	5.286097569508017
6327.272727272728	5.196741731037469
6400.000000000001	5.110631574105974
6472.727272727273	5.027587387546682
6545.454545454546	4.947442581666842
6618.181818181819	4.870042517611985
6690.909090909091	4.795243458619069
6763.636363636364	4.722911628795595
6836.363636363637	4.652922366934343
6909.09090909091	4.585159364480618
6981.818181818182	4.519513978151245
7054.545454545455	4.455884608895328
7127.272727272728	4.394176139914879
7200.000000000001	4.334299427352462
7272.727272727273	4.27617083802345
7345.454545454546	4.219711829239198
7418.181818181819	4.1648485663491535
7490.909090909092	4.111511574136571
7563.636363636364	4.059635418644892
7636.363636363637	4.009158416398513
7709.09090909091	3.960022368320437
7781.818181818182	3.9121723159463935
7854.545454545455	3.865556317796223
7927.272727272728	3.820125243993187
8000.0	3.775832587424493



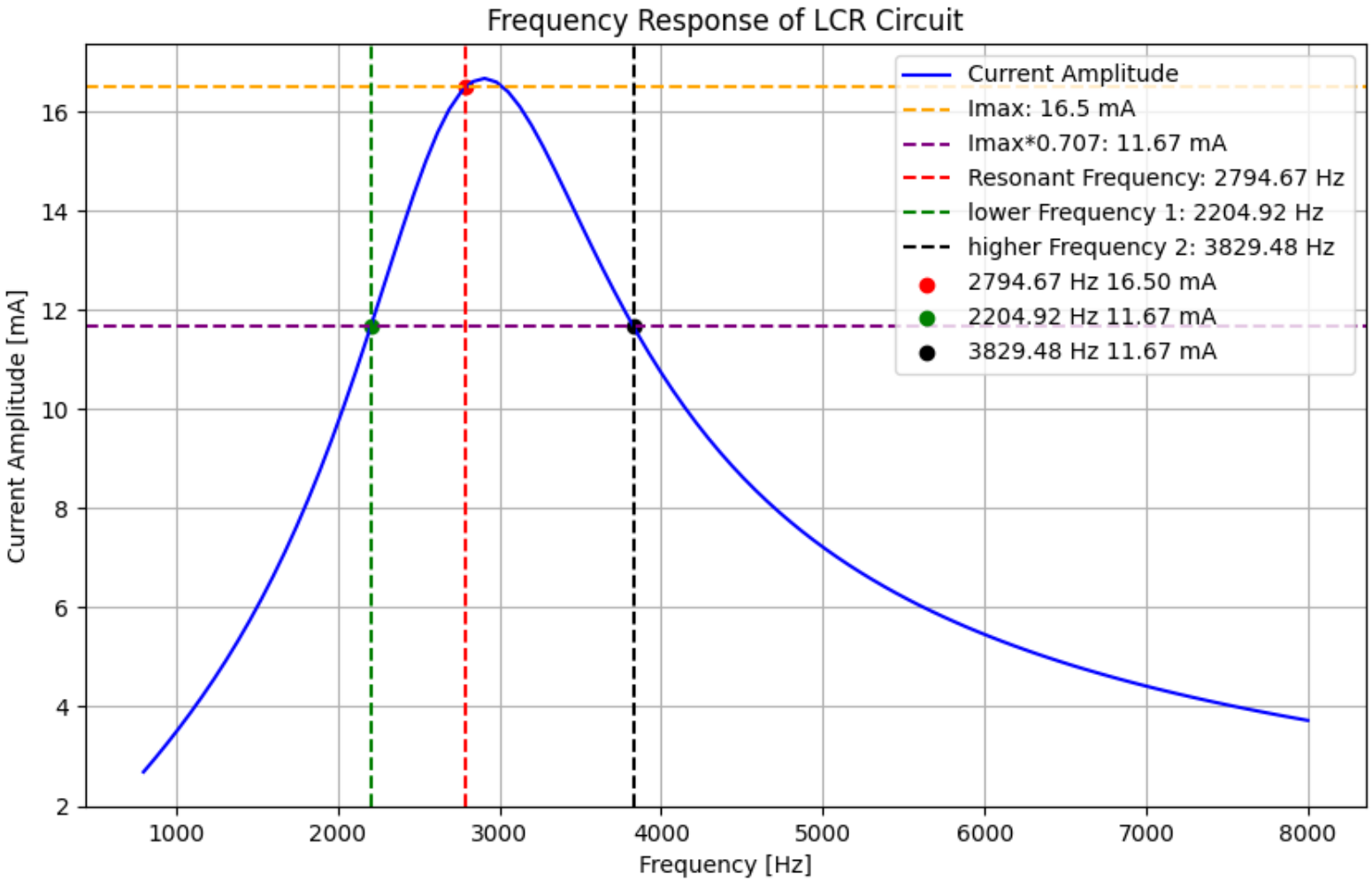
L = 0.03 H, R= 200.0 ohm C = 1e-07 F , V = 5.0 V,
I max = 24.893 mA
I max * 0.707 = 17.599 mA
Resonant frequency = 2856.919 Hz
Resonant frequency = 2856.919 Hz
Band width= fh -fl = 3489.908 - 2419.093 hz
Band width = 1070.815 Hz
Quality factor = fr/band width = 2856.919/1070.815
Quality factor = 2.668

electrical damping for an LCR circuit R= 300.0

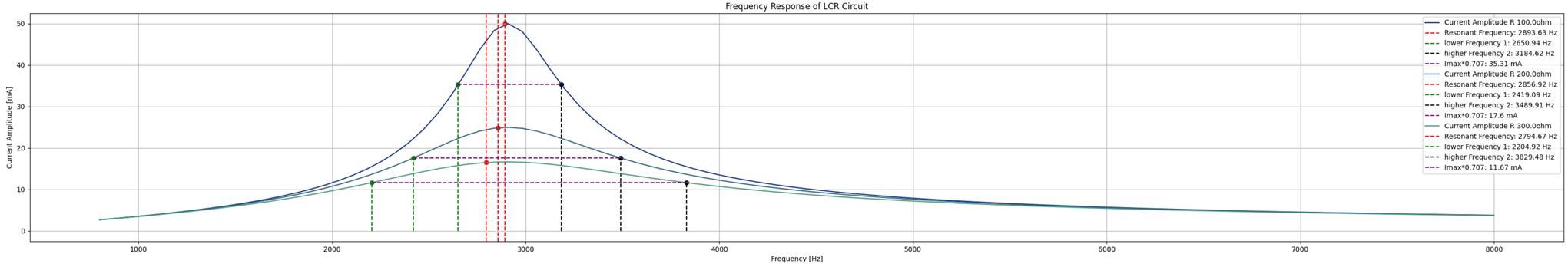
frequency hz	Current (mA)
800.0	2.6839092628581063
872.7272727272727	2.9655120932943824
945.4545454545455	3.2578348017394267
1018.1818181818182	3.5621659722518277
1090.909090909091	3.879896344020309
1163.6363636363637	4.212527400778977
1236.3636363636365	4.561678436011715
1309.090909090909	4.9290908629007015
1381.818181818182	5.316627940153245
1454.5454545454545	5.726267241406001
1527.2727272727275	6.160082022530173
1600.0	6.620206038857747
1672.7272727272727	7.108774232438484
1745.4545454545455	7.627828979459833
1818.1818181818182	8.1791782974795
1890.909090909091	8.764188848464231
1963.6363636363637	9.383493528519766
2036.3636363636365	10.036592609099806
2109.090909090909	10.721331941398386
2181.818181818182	11.43325677613902
2254.545454545455	12.164872300176976
2327.2727272727275	12.904899089951755
2400.0	13.637694854314448
2472.727272727273	14.343108511503498
2545.4545454545455	14.99709530410717
2618.181818181818	15.573377261262438
2690.909090909091	16.046205362008646
2763.636363636364	16.393864918072133
2836.3636363636365	16.60211251225899
2909.0909090909095	16.666520693263397
2981.818181818182	16.592959304807778
3054.545454545455	16.396099276416056

3127.2727272727275	16.096527230099618
3200.0	15.717422207972252
3272.727272727273	15.281649631457233
3345.4545454545455	14.80974605650461
3418.1818181818185	14.318866413072872
3490.909090909091	13.822508772917075
3563.636363636364	13.330744151439903
3636.3636363636365	12.850703966155384
3709.0909090909095	12.387148467087115
3781.818181818182	11.943011514314223
3854.545454545455	11.519871771060435
3927.2727272727275	11.11833504260909
4000.0000000000005	10.738331251878439
4072.727272727273	10.379337829250794
4145.454545454546	10.040543565237536
4218.181818181818	9.720966236748902
4290.909090909091	9.419535356206884
4363.636363636364	9.135149156283198
4436.363636363636	8.86671285414594
4509.09090909091	8.613163501659294
4581.818181818182	8.37348534681063
4654.545454545455	8.146718570863252
4727.272727272728	7.931963469512493
4800.0	7.728381558120415
4872.727272727273	7.535194651515754
4945.454545454546	7.3516826577637735
5018.181818181819	7.177180601544898
5090.909090909091	7.011075232723935
5163.636363636364	6.85280146179354
5236.363636363637	6.701838783247486
5309.09090909091	6.557707791194771
5381.818181818182	6.419966851869324
5454.545454545455	6.2882089702217545
5527.272727272728	6.1620588689772156
5600.0	6.041170285880128

5672.727272727273	5.925223486513488
5745.454545454546	5.8139229847846785
5818.181818181819	5.706995459988107
5890.909090909091	5.604187857631219
5963.636363636364	5.5052656604775425
6036.363636363637	5.410011316188218
6109.09090909091	5.318222808299733
6181.818181818182	5.229712357897227
6254.545454545455	5.144305244117056
6327.272727272728	5.061838732461715
6400.000000000001	4.982161100782535
6472.727272727273	4.905130753646467
6545.454545454546	4.830615416630788
6618.181818181819	4.758491402870683
6690.909090909091	4.688642944912282
6763.636363636364	4.620961585595129
6836.363636363637	4.555345622302778
6909.09090909091	4.491699599480146
6981.818181818182	4.429933844823972
7054.545454545455	4.369964045011711
7127.272727272728	4.311710857247889
7200.000000000001	4.255099553279343
7272.727272727273	4.200059692865369
7345.454545454546	4.1465248239892185
7418.181818181819	4.094432207366805
7490.909090909092	4.043722563050222
7563.636363636364	3.994339837140241
7636.363636363637	3.9462309868162566
7709.09090909091	3.8993457820662787
7781.818181818182	3.853636622655726
7854.545454545455	3.8090583690139197
7927.272727272728	3.7655681858429704
8000.0	3.7231253973665934



L = 0.03 H, R= 300.0 ohm C = 1e-07 F , V = 5.0 V,
I max = 16.5 mA
I max * 0.707 = 11.666 mA
Resonant frequency = 2794.669 Hz
Resonant frequency = 2794.669 Hz
Band width= fh -fl = 3829.482 - 2204.924 hz
Band width = 1624.559 Hz
Quality factor = fr/band width = 2794.669/1624.559
Quality factor = 1.72


Frequency Response of LCR Circuit
Current Amplitude [mA]
Frequency [Hz]
0
10
20
30
40
50
1000
2000
3000
4000
5000
6000
7000
8000
Current Amplitude R 100.0ohm
Resonant Frequency: 2893.63 Hz
lower Frequency 1: 2650.94 Hz
higher Frequency 2: 3184.62 Hz
Imax*0.707: 35.31 mA
Current Amplitude R 200.0ohm
Resonant Frequency: 2856.92 Hz
lower Frequency 1: 2419.09 Hz
higher Frequency 2: 3489.91 Hz
Imax*0.707: 17.6 mA
Current Amplitude R 300.0ohm
Resonant Frequency: 2794.67 Hz
lower Frequency 1: 2204.92 Hz
higher Frequency 2: 3829.48 Hz
Imax*0.707: 11.67 mA