

# Device Modeling Report

COMPONENTS: CAPACITOR/Films

PART NUMBER: ECQ-B1H102JF3

MANUFACTURER: Matsushita Electric Industrial Co.,Ltd.



**Bee Technologies Inc.**

## Theory: Auto Balancing Bridge Method

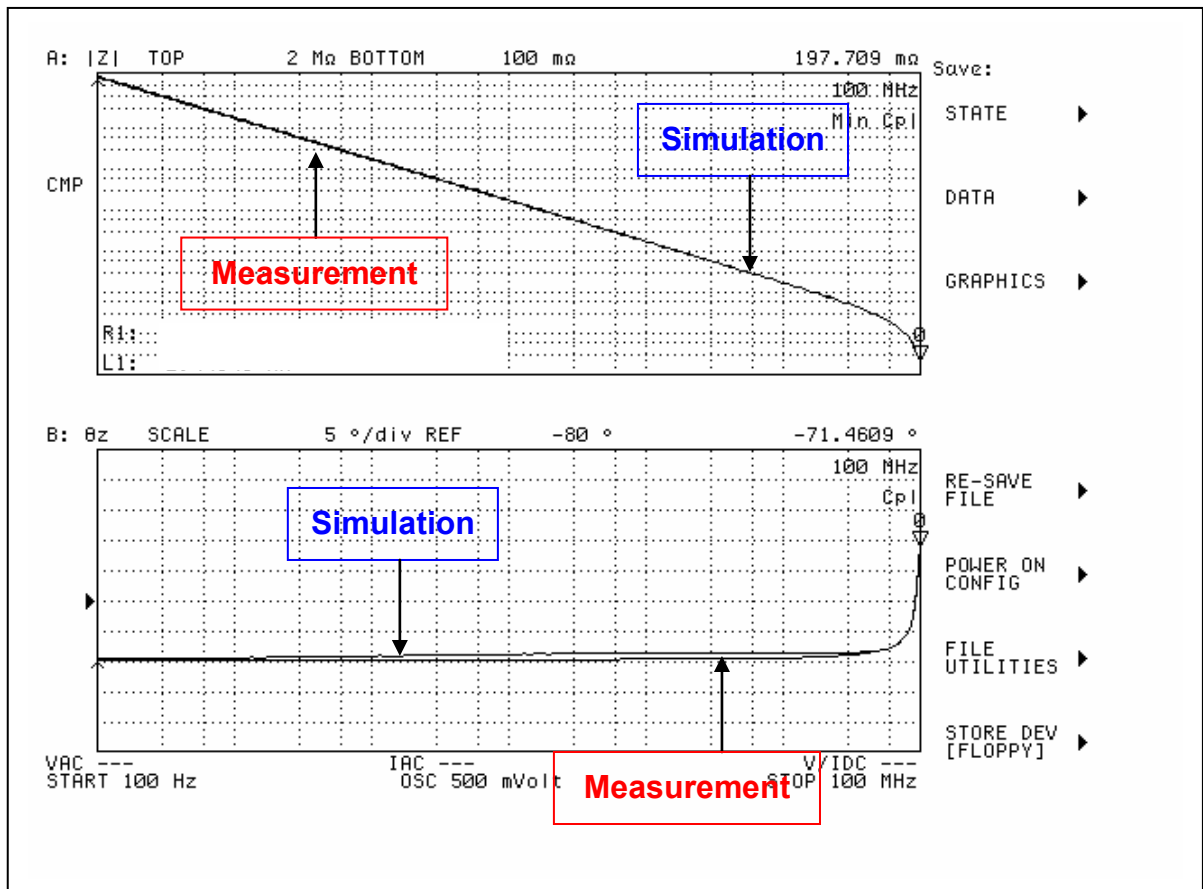
### Optimization of Simulation

Range of adjustment Frequency: 100Hz to 100M(Hz)

Frequency vs.  $|Z|$  and Frequency vs.  $\theta_z$  Characteristic

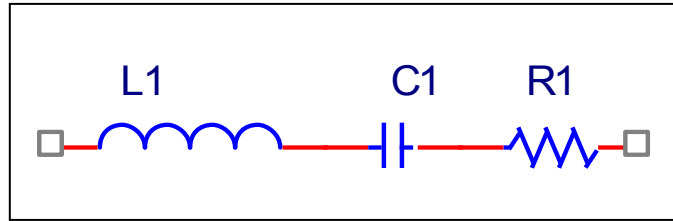
Attention)

*Please use SPICE MODEL within the range from 100Hz to 100M(Hz)*



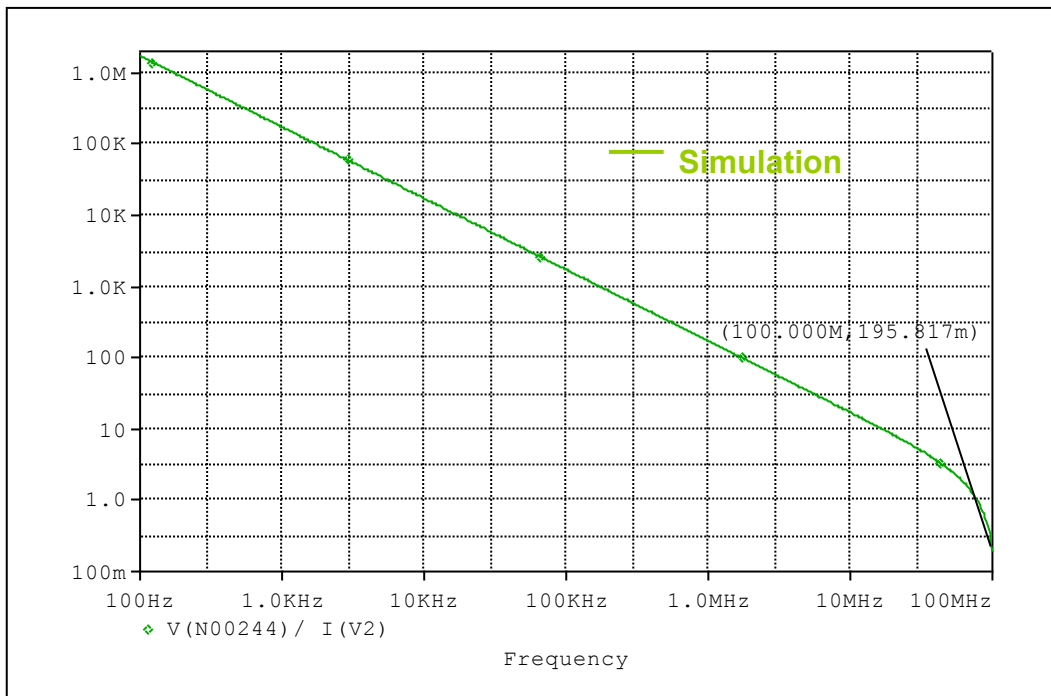
L1	
C1	
R1	

Equivalent circuit

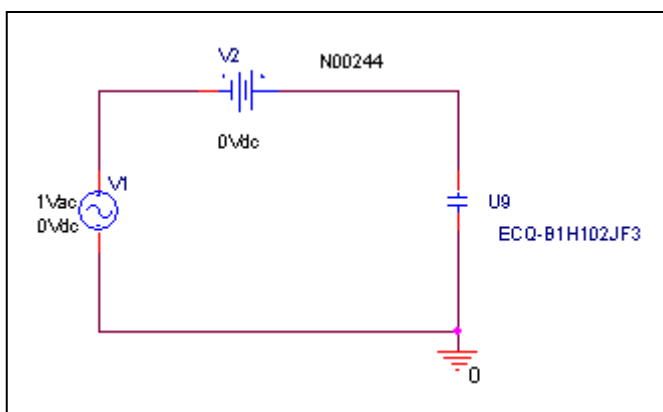


## Frequency vs. IZI Characteristic

### Circuit Simulation result



### Evaluation Circuit



**Simulation result**

<b>Frequency (Hz)</b>	<b>IZI (ohm) :Measurement</b>	<b>IZI (ohm) :Simulation</b>	<b>% Error</b>
100	1.74543M	1.7241M	-1.2220
1K	172.5642K	172.410K	-0.0894
10K	17.4621K	17.241K	-1.2662
100K	1.76236K	1.7241K	-2.1710
1M	171.9852	172.394	0.2377
10M	17.123	17.087	-0.2102
100M	196.897m	195.817m	-0.5485

	<b>Measurement</b>	<b>Simulation</b>	<b>%Error</b>
<b>FSRF(Hz)</b>	99.8715M	100.000M	0.1287
<b>IZI (ohm)</b>	198.985m	195.817m	-1.5921