

Device Modeling Report

COMPONENTS: CAPACITOR/ ELECTROLYTIC
PART NUMBER: ECEA0JKG470
MANUFACTURER: Panasonic
THERMAL: Ta= 25C (degree)



Bee Technologies Inc.

Theory: Auto Balancing Bridge Method

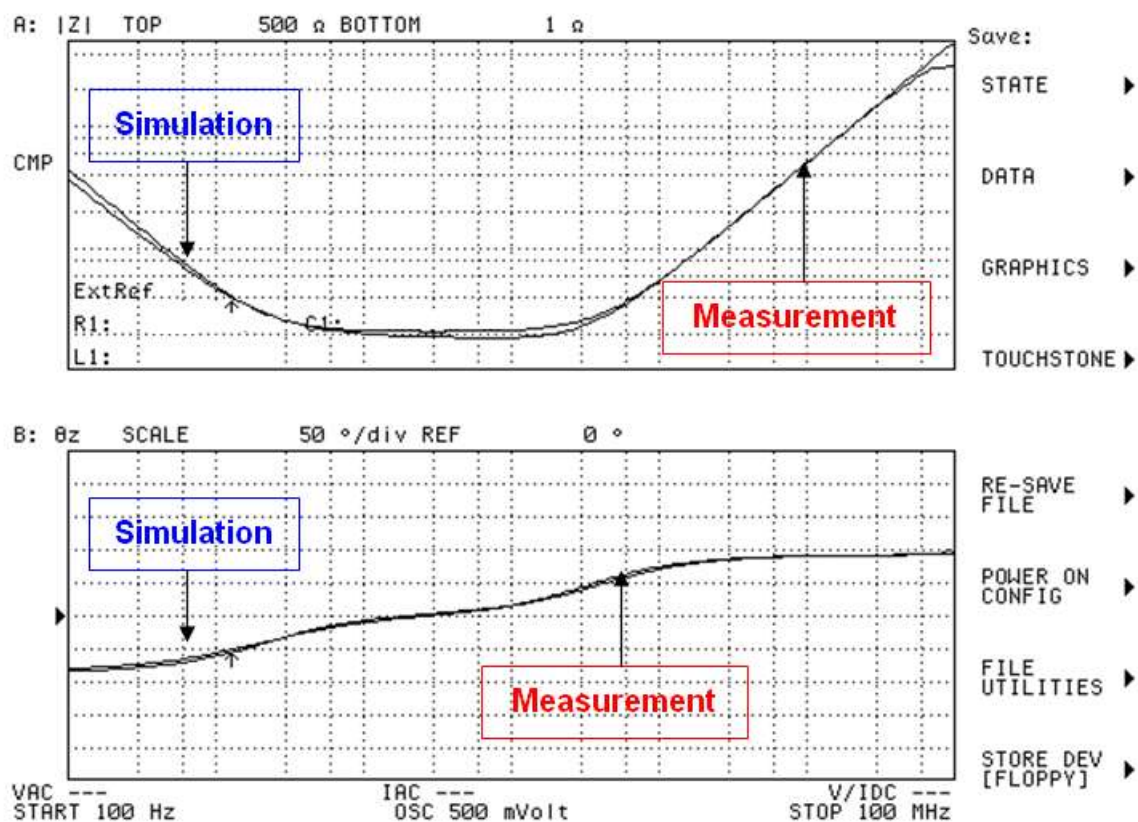
Optimization of Simulation

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

Frequency vs. $|Z|$ and Frequency vs. θ_z Characteristic

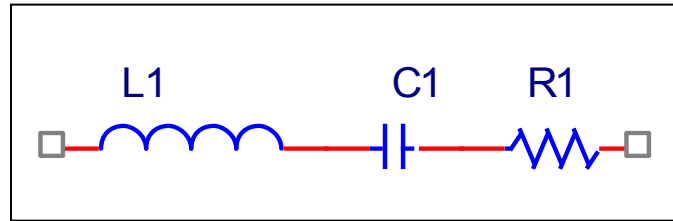
Attention)

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



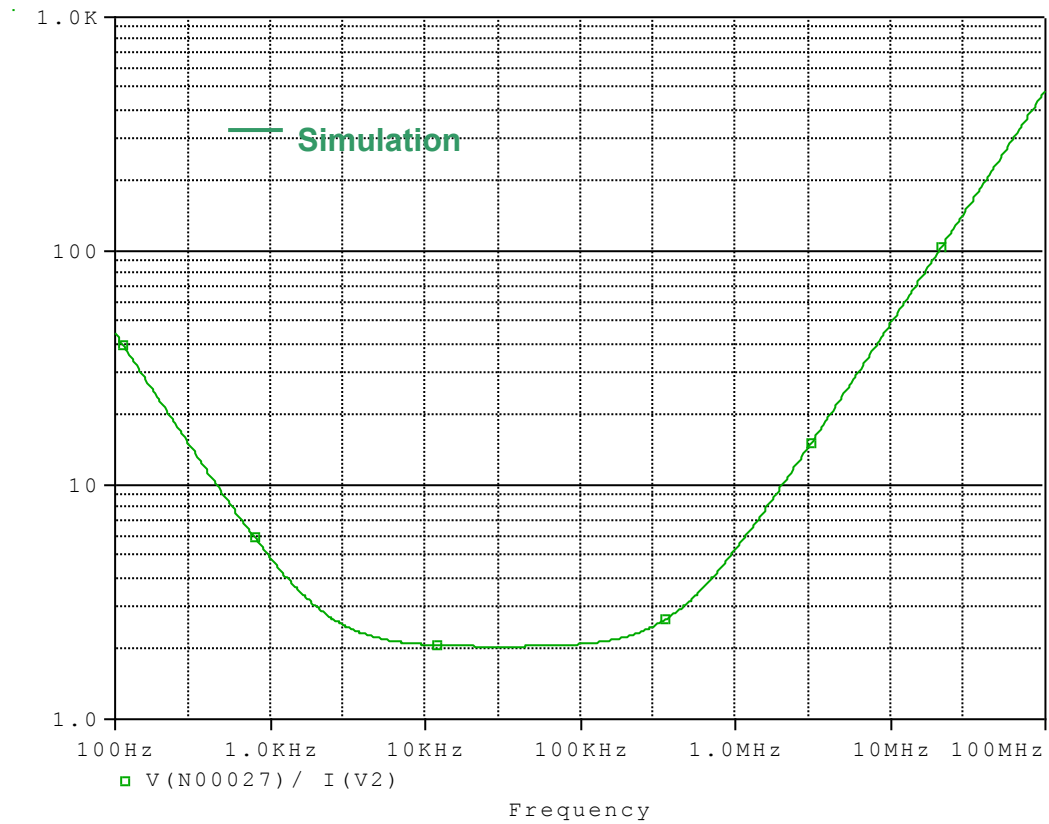
| | Measurement | |
|----|-------------|--|
| R1 | | |
| C1 | | |
| L1 | | |

Equivalent circuit

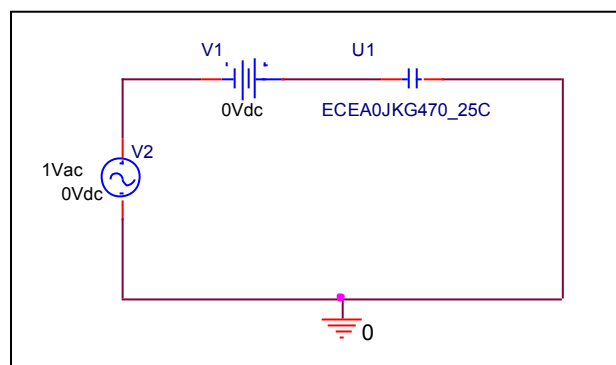


Frequency vs. |Z| Characteristic

Circuit Simulation result



Evaluation Circuit



Simulation result

| Frequency (Hz) | Z (Ω) | | % Error |
|----------------|-----------------|------------|---------|
| | Measurement | Simulation | |
| 100 | 36.728 | 44.451 | 21.029 |
| 1K | 4.448 | 4.894 | 10.047 |
| 10K | 1.858 | 2.086 | 12.280 |
| 100K | 1.722 | 2.095 | 21.678 |
| 1M | 5.399 | 5.281 | - 2.193 |
| 10M | 50.192 | 48.764 | - 2.846 |