

# Device Modeling Report

COMPONENTS: CAPACITOR/ ELECTROLYTIC  
PART NUMBER: ECEA0JKG470  
MANUFACTURER: Panasonic  
THERMAL: Ta= 80C (degree)



**Bee Technologies Inc.**

## Theory: Auto Balancing Bridge Method

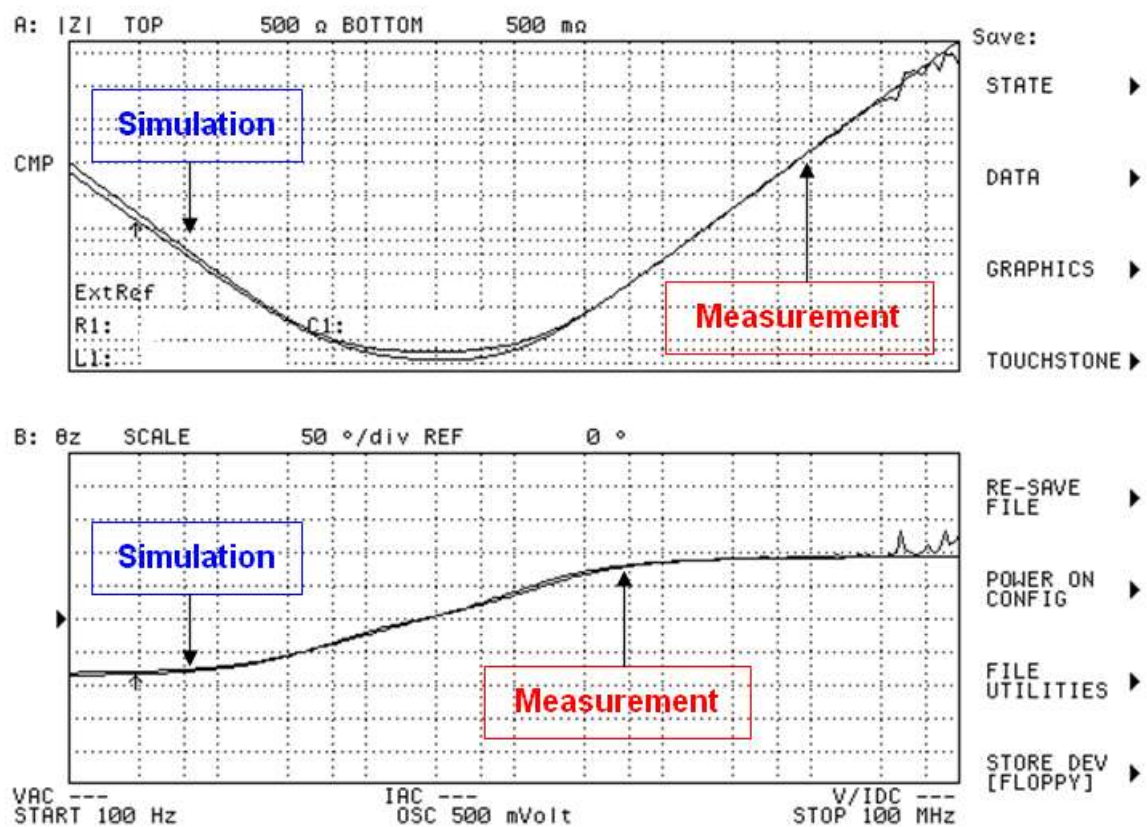
### Optimization of Simulation

Range of adjustment Frequency: 100 Hz to 100 MHz

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

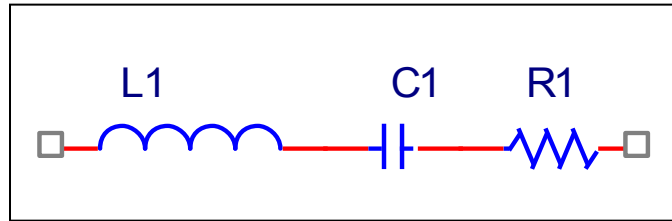
Attention)

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



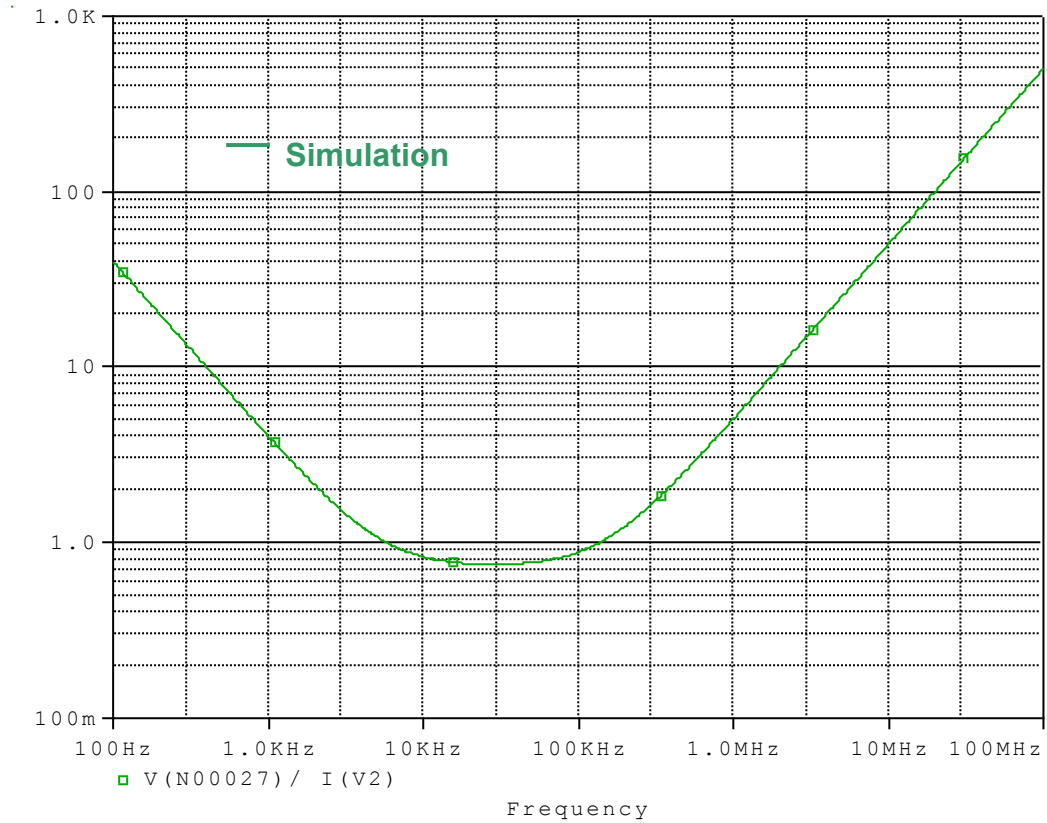
	Measurement	
R1		
C1		
L1		

Equivalent circuit

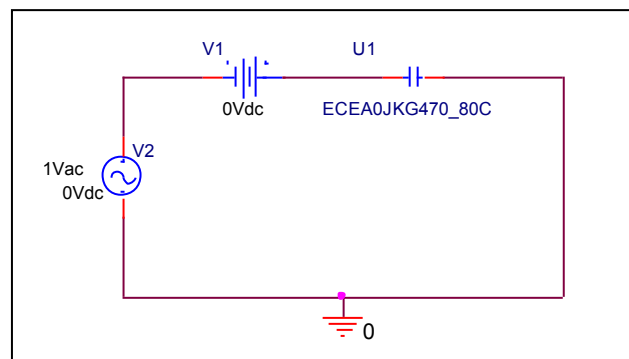


## Frequency vs. |Z| Characteristic

### Circuit Simulation result



### Evaluation Circuit



# Simulation result

Frequency (Hz)	IZI ( $\Omega$ )		% Error
	Measurement	Simulation	
100	31.844	40.004	25.626
1K	3.404	4.065	19.437
10K	660.695m	830.388m	25.684
100K	707.016m	883.456m	24.956
1M	5.308	5.071	- 4.472
10M	49.718	50.189	0.948