

# Device Modeling Report

COMPONENTS: CAPACITOR/ ELECTROLYTIC  
PART NUMBER: UUG1E332MNR1M5  
MANUFACTURER: Nichicon  
THERMAL: Ta= 40C (degree)



**Bee Technologies Inc.**

## Theory: Auto Balancing Bridge Method

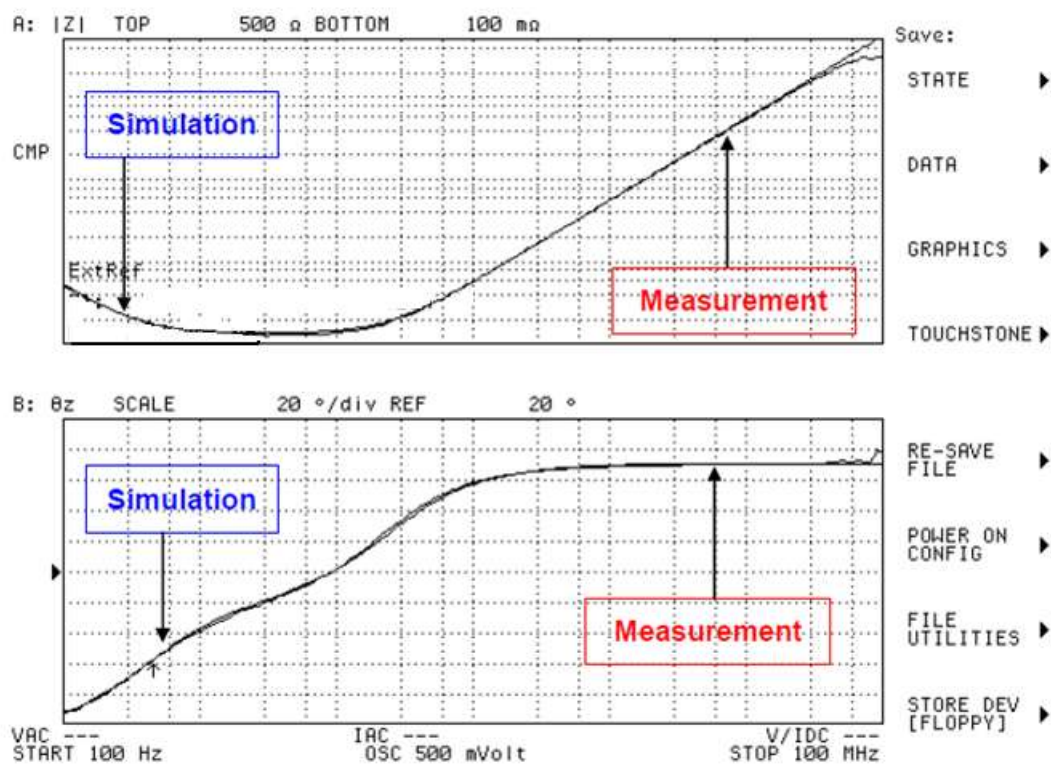
### Optimization of Simulation

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

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

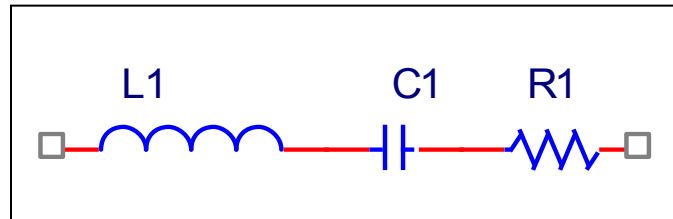
Attention)

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



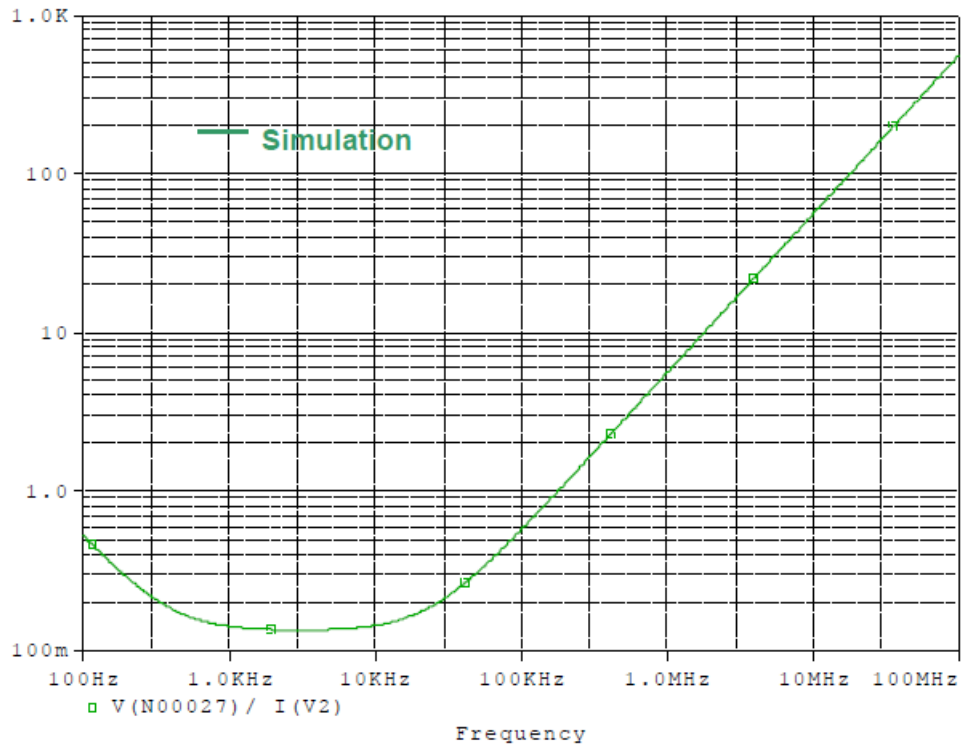
	Measurement	
R1		
C1		
L1		

Equivalent circuit

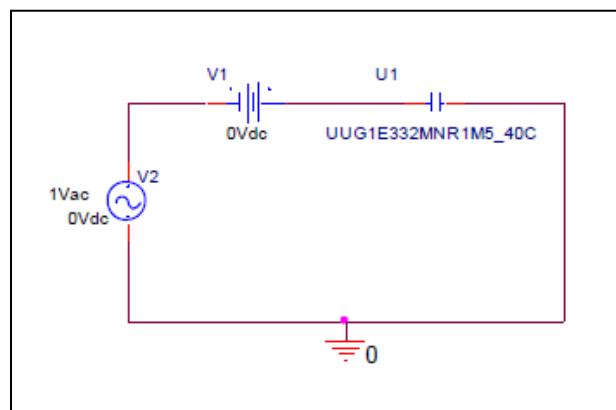


# Frequency vs. |Z| Characteristic

## Circuit Simulation result



## Evaluation Circuit



Simulation result

Frequency (Hz)	IZI ( $\Omega$ )		% Error
	Measurement	Simulation	
100	513.982m	529.280m	2.976
1K	138.952m	142.369m	2.459
10K	134.460m	144.294m	7.314
100K	561.688m	570.534m	1.575
1M	5.597	5.643	0.818
10M	53.447	56.415	5.554