

# Device Modeling Report

COMPONENTS: CAPACITOR/ ELECTROLYTIC  
PART NUMBER: UUG1A103MRR1MS  
MANUFACTURER: Nichicon  
REMARK: TA=40C



**Bee Technologies Inc.**

## Theory: Auto Balancing Bridge Method

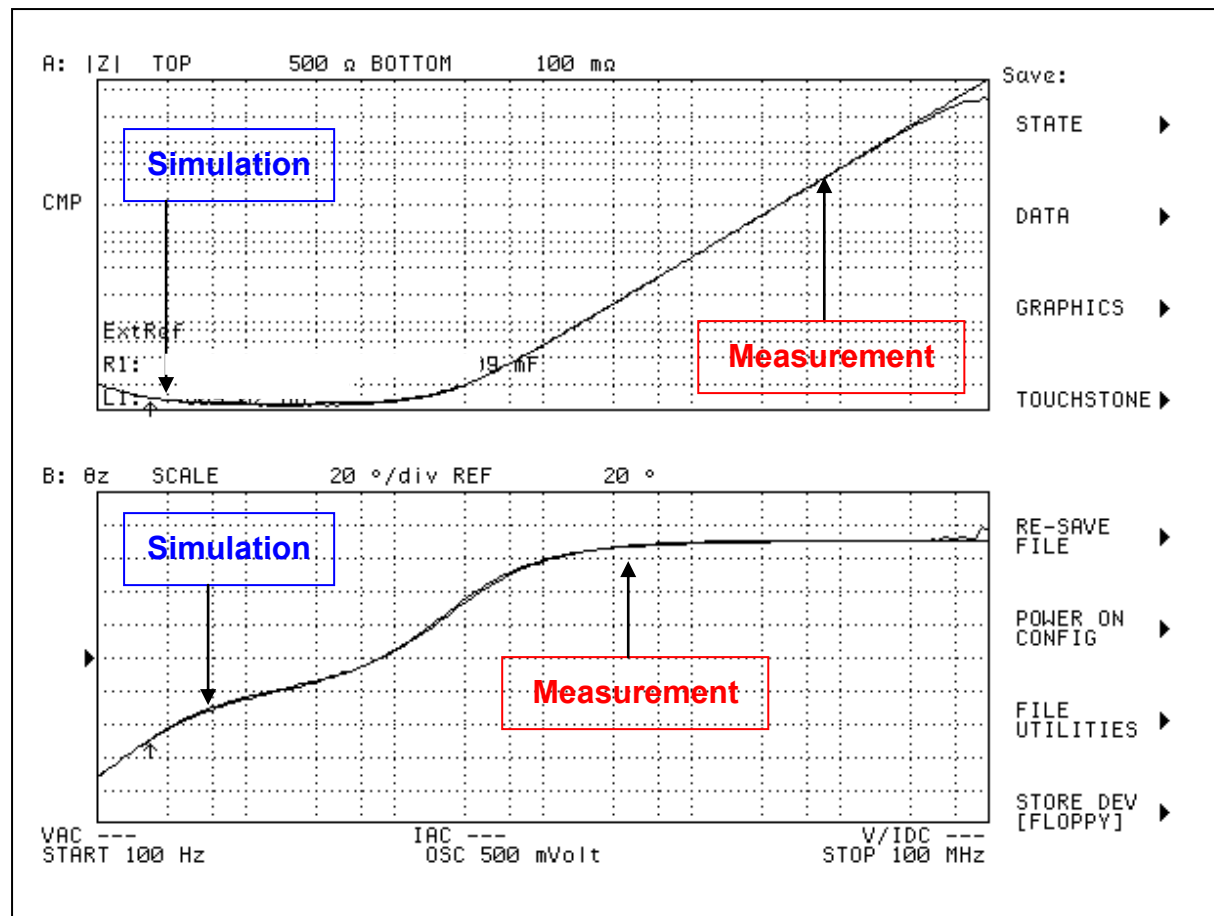
### Optimization of Simulation

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

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

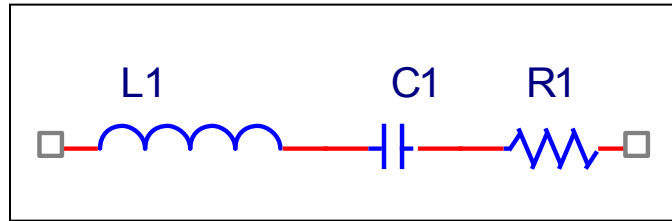
Attention)

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



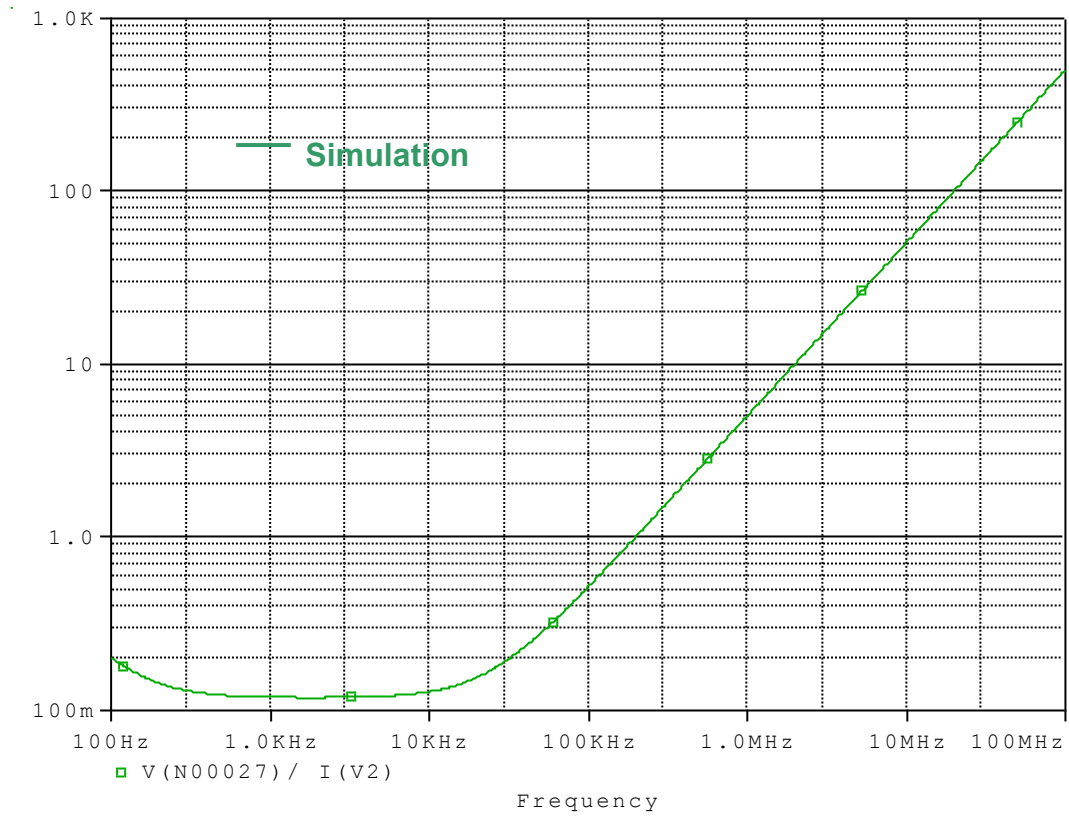
	Measurement	
R1		
C1		
L1		

Equivalent circuit

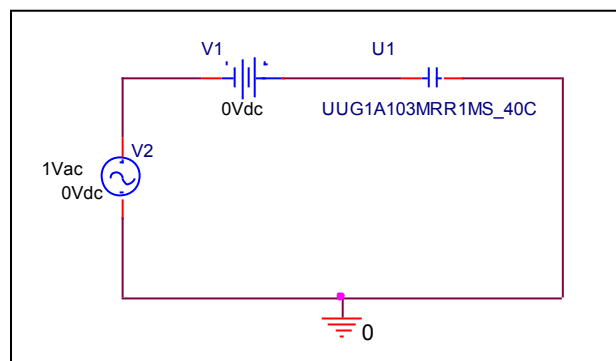


## Frequency vs. |Z| Characteristic

### Circuit Simulation result



### Evaluation Circuit



# Simulation result

Frequency (Hz)	IZI ( $\Omega$ )		% Error
	Measurement	Simulation	
100	200.900	202.112	0.603
1K	117.369	119.375	1.709
10K	124.256	128.494	3.411
100K	528.170	518.810	- 1.772
1M	5.299	5.053	- 4.636
10M	50.603	50.519	- 0.166