

# Device Modeling Report

COMPONENTS: CAPACITOR/ ELECTROLYTIC  
PART NUMBER: UUG1A103MRR1MS  
MANUFACTURER: Nichicon  
REMARK: TA=60C



**Bee Technologies Inc.**

## Theory: Auto Balancing Bridge Method

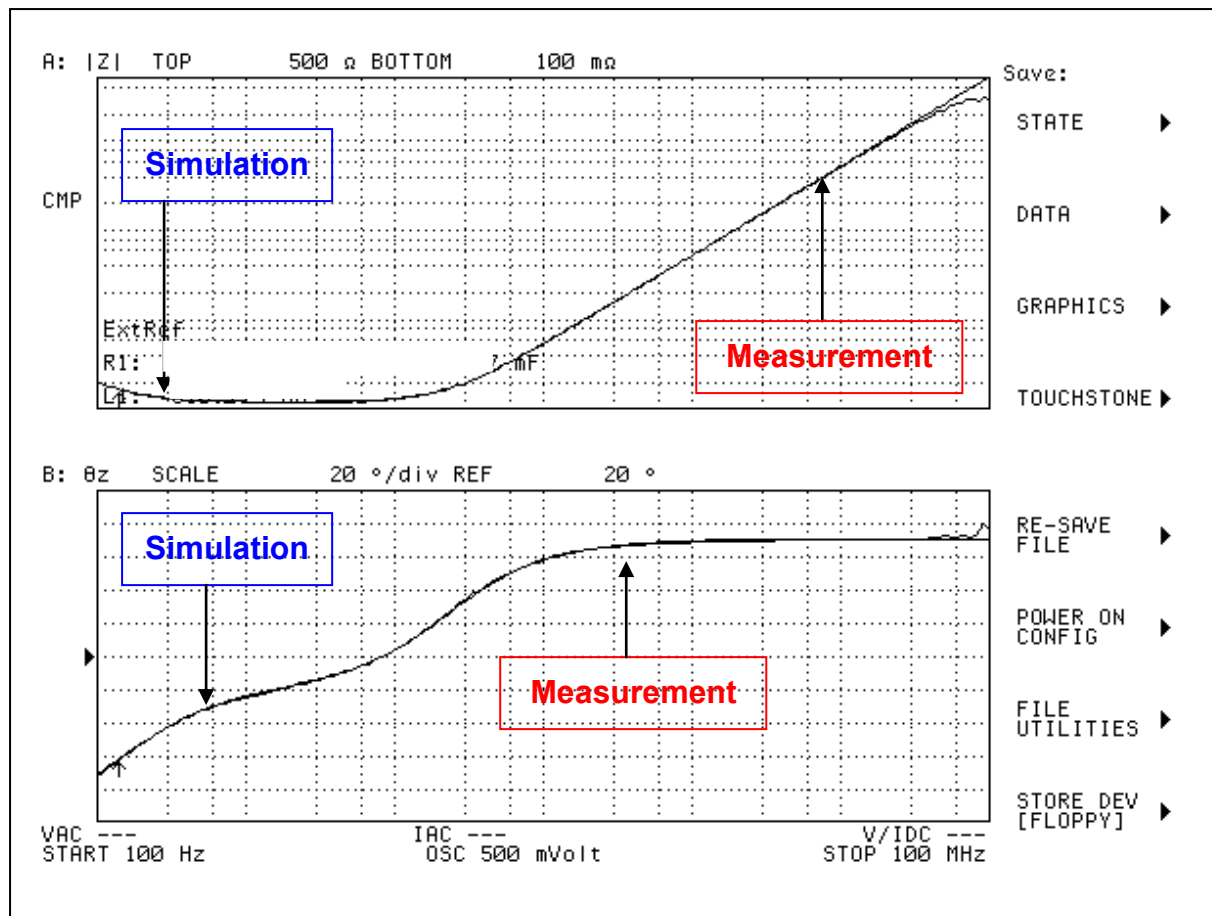
### Optimization of Simulation

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

Frequency vs.  $|Z|$  and Frequency vs.  $\theta z$  Characteristic

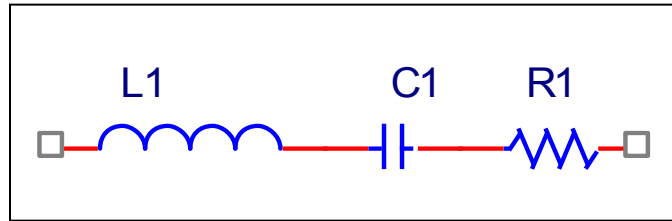
Attention)

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



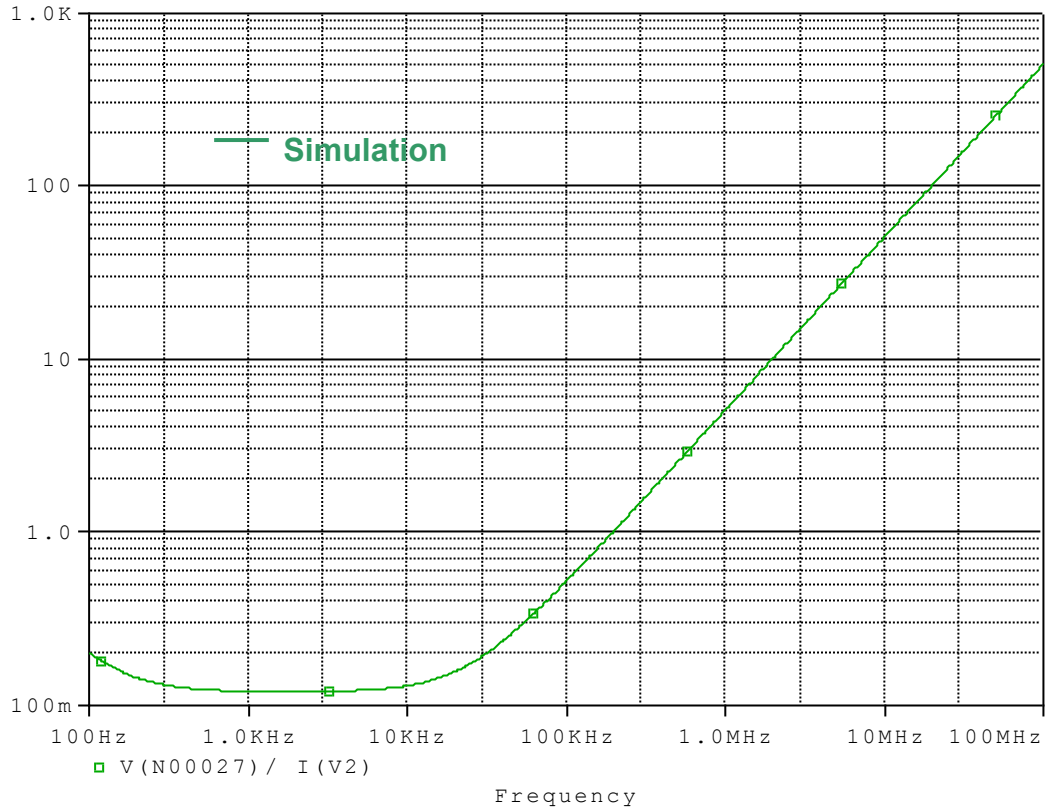
	Measurement	
R1		
C1		
L1		

Equivalent circuit

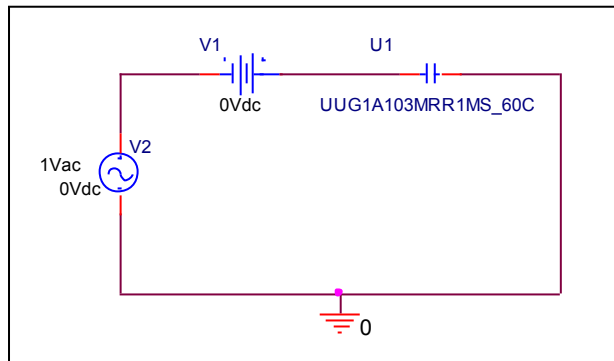


# Frequency vs. IZI Characteristic

## Circuit Simulation result



## Evaluation Circuit



Simulation result

Frequency (Hz)	IZI ( $\Omega$ )		% Error
	Measurement	Simulation	
100	200.355	202.318	0.980
1K	117.491	120.814	2.828
10K	125.506	129.991	3.573
100K	527.793	522.908	- 0.925
1M	5.305	5.091	- 4.029
10M	50.599	50.900	0.595