

# Device Modeling Report

COMPONENTS: CAPACITOR/CERAMIC  
PART NUMBER: DE1B3KX681KA5B  
MANUFACTURER: MURATA  
REMARK: TA=60C



**Bee Technologies Inc.**

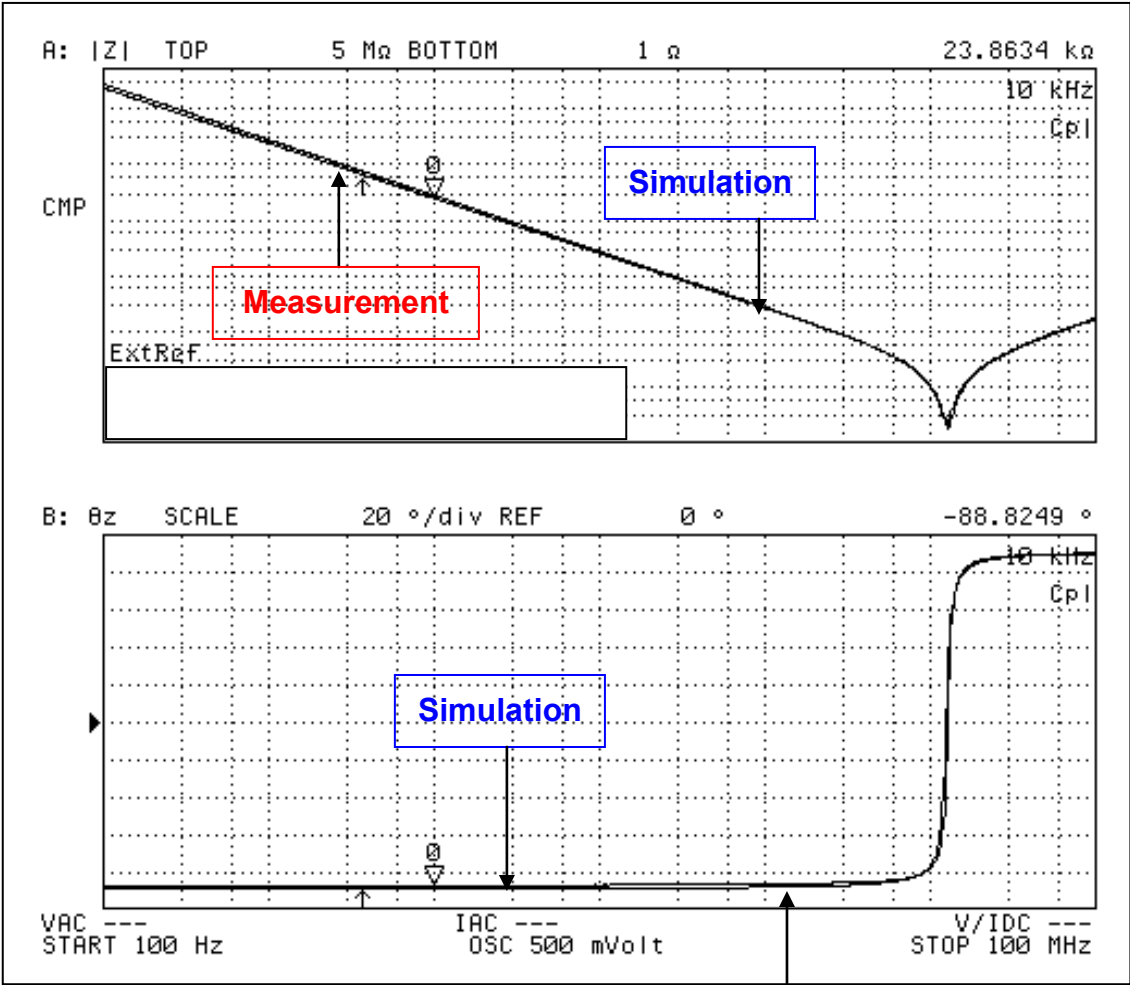
Theory: Auto Balancing Bridge Method

Optimization of Simulation

Range of adjustment Frequency:100Hz to100M(Hz)  
Frequency vs.  $|Z|$  and Frequency vs.  $\theta_z$  Characteristic

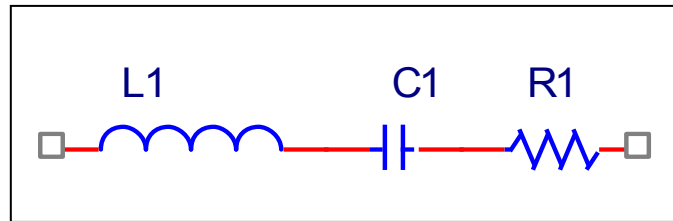
Attention)

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



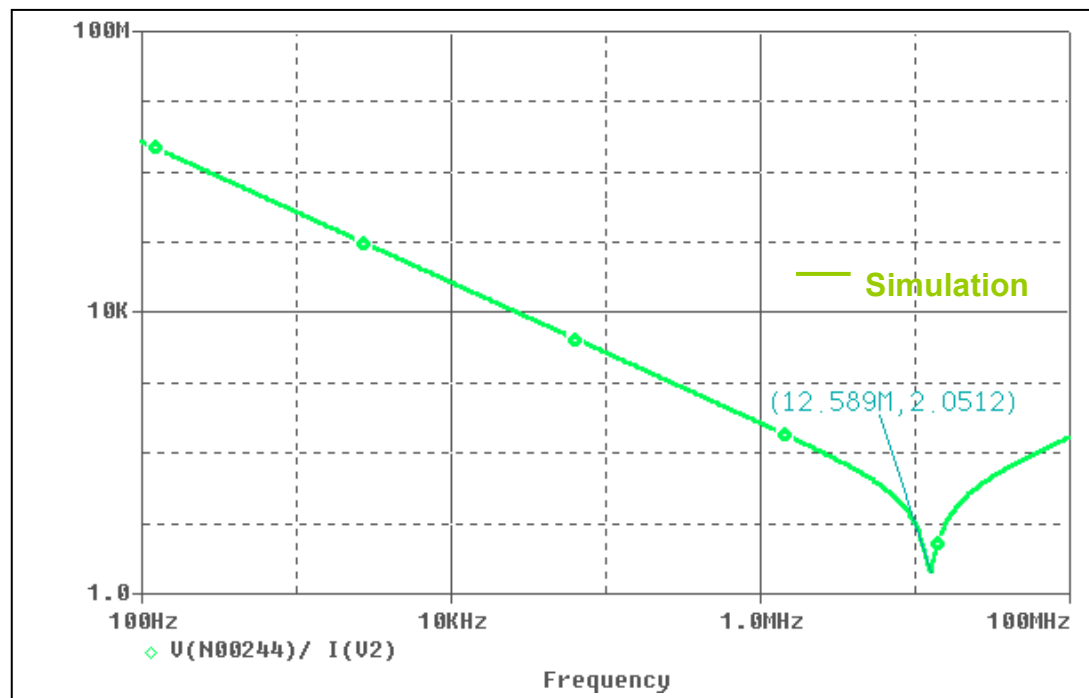
L1	
C1	
R1	

Equivalent circuit

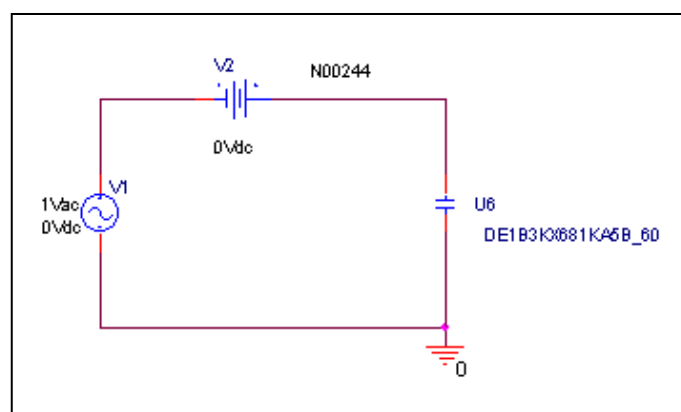


## Frequency vs. |Z| Characteristic

### Circuit Simulation result



### Evaluation Circuit



**Simulation result**

<b>Frequency (Hz)</b>	<b>IZI (ohm) :Measurement</b>	<b>IZI (ohm) :Simulation</b>	<b>% Error</b>
100	2.23849M	2.6844M	19.9201
1K	231.891K	268.436K	15.7596
10K	23.8634K	26.844K	12.4903
100K	2.47018K	2.684K	8.6641
1M	256.622	266.762	3.9513
10M	11.0623	10.231	7.5147
100M	156.082	165.517	6.0449

	<b>Measurement</b>	<b>Simulation</b>	<b>%Error</b>
<b>FSRF(Hz)</b>	12.589M	12.589M	0.0000
<b>IZI (ohm)</b>	2.05653	2.0512	0.2592