

Device Modeling Report

COMPONENTS: CAPACITOR/ CERAMIC
PART NUMBER: DE1E3KX221KA5B
MANUFACTURER: MURATA
REMARK: TA=80C



Bee Technologies Inc.

Theory: Auto Balancing Bridge Method

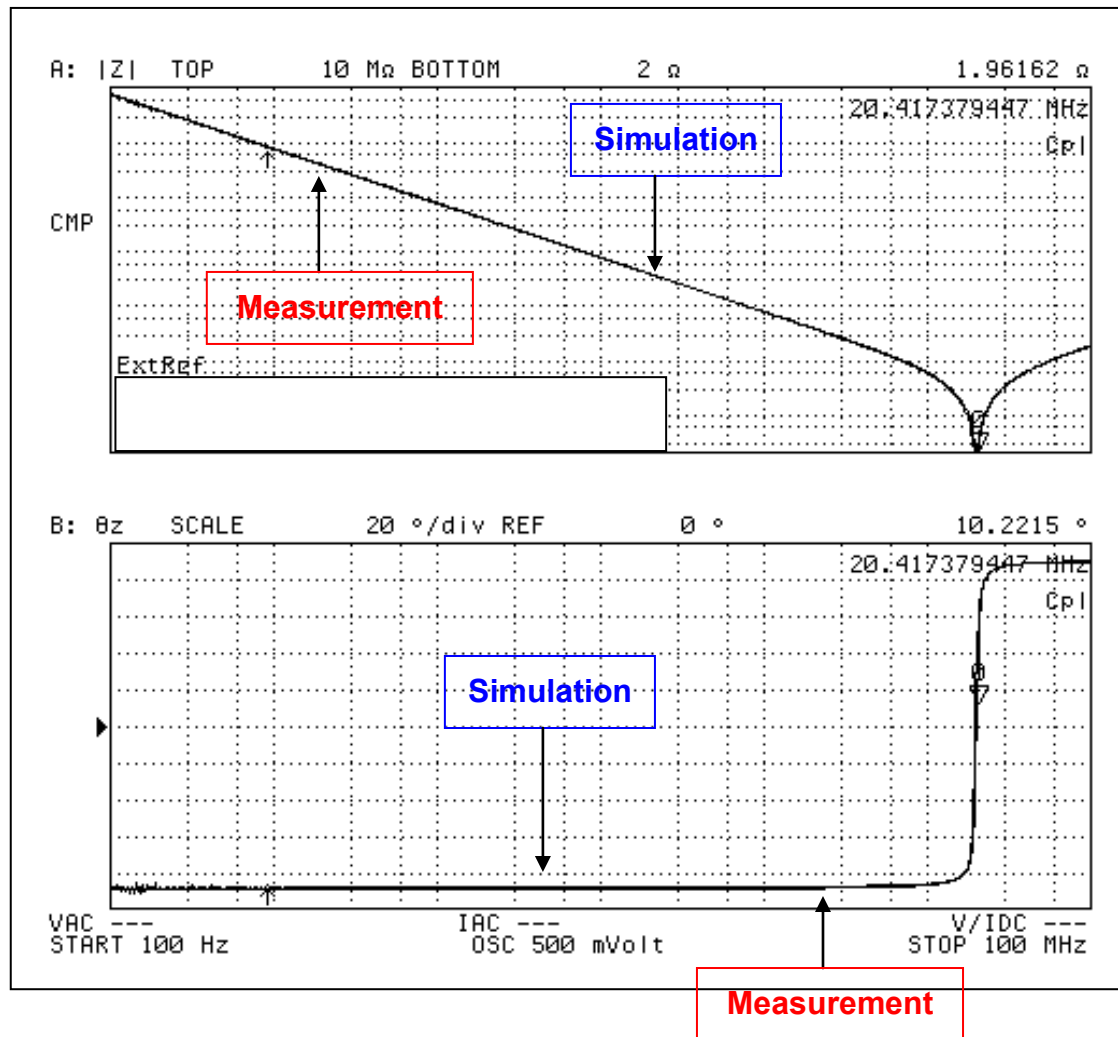
Optimization of Simulation

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

Frequency vs. $|Z|$ and Frequency vs. θ_z Characteristic

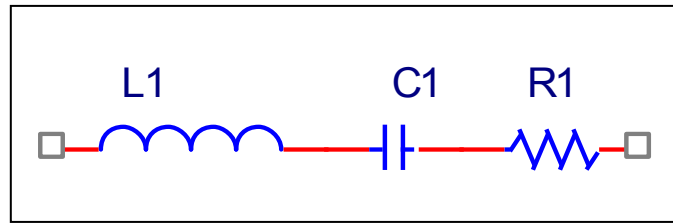
Attention)

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



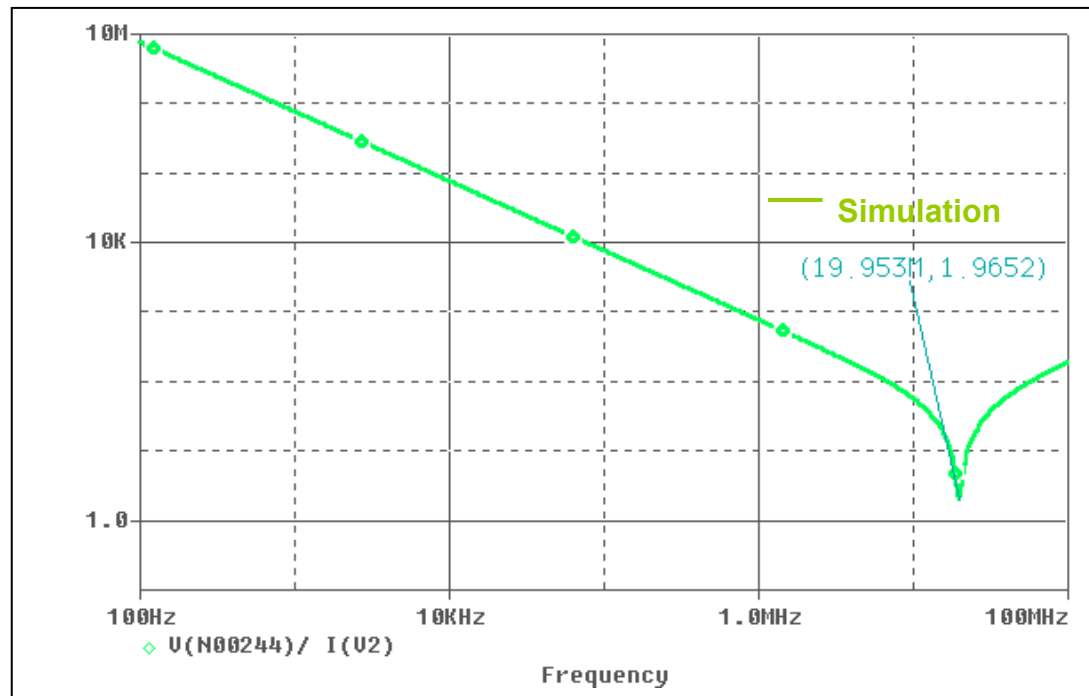
L1	
C1	
R1	

Equivalent circuit

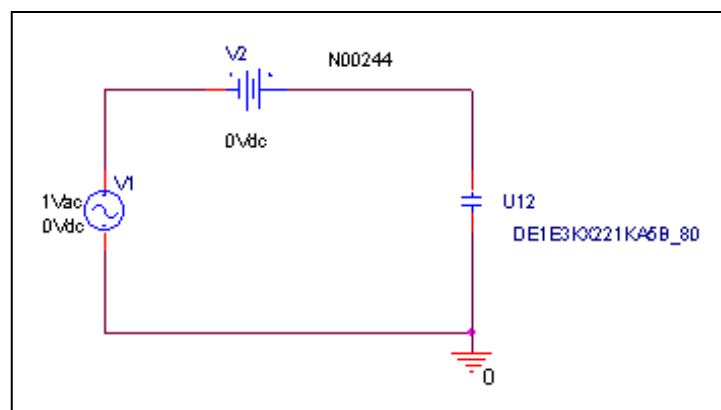


Frequency vs. |Z| Characteristic

Circuit Simulation result



Evaluation Circuit



Simulation result

Frequency (Hz)	IZI (ohm) :Measurement	IZI (ohm) :Simulation	% Error
100	7.2401M	7.6637M	5.8507
1K	747.474K	766.366K	2.5274
10K	75.0455K	76.637K	2.1207
100K	7.61871K	7.664K	0.5879
1M	775.253	764.7380	1.3563
10M	60.5394	57.375	5.2270
100M	173.395	185.301	6.8664

	Measurement	Simulation	%Error
FSRF(Hz)	20.4173M	19.953M	2.2741
IZI (ohm)	1.96162	1.9652	0.1825