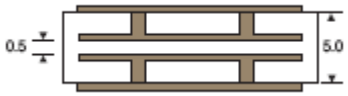
Buried Single Layer™ Capacitors

Presidio Advantage

- Presidio's patented thick film technology buries electrodes into the ceramic body

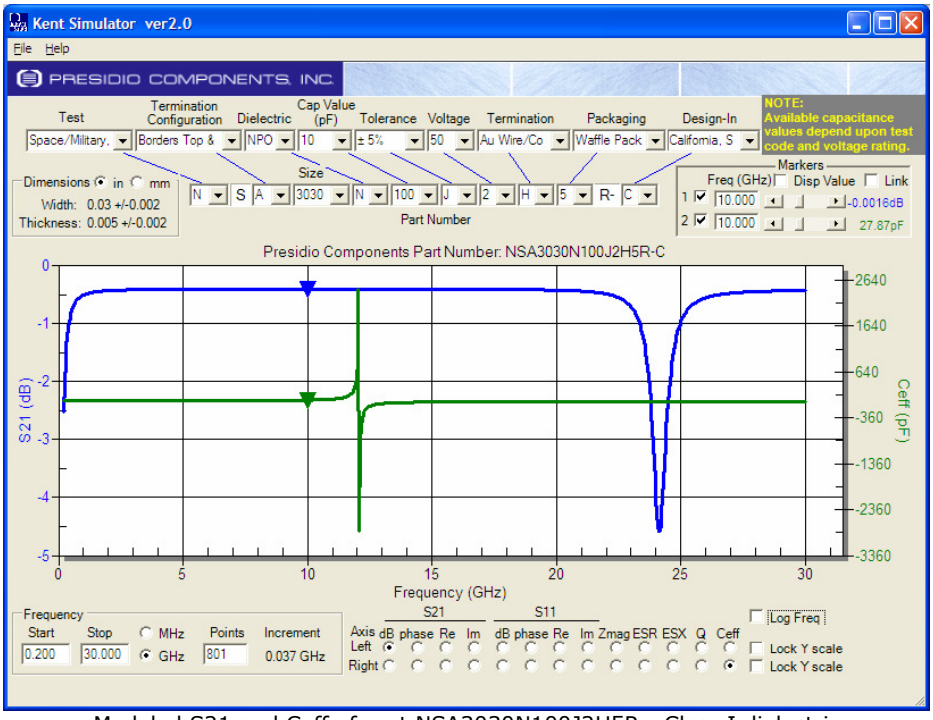


allowing a 10:1 advantage over a conventional construction.

It offers the designer:
(a) more bandwidth through increased device capacitance,
(b) more stable capacitance over temperature and
(c) more capacitance in smaller case sizes for increased board density.

Filled vias connect the buried electrodes with the outside top and bottom metallization pads; 99.99% pure Au is standard for all metal connections allowing proven wire bond techniques with AuSn or conductive epoxy die attach techniques.

- Excellent low loss performance for high Q applications as demonstrated with a 10 pF NPO capacitor shown below.



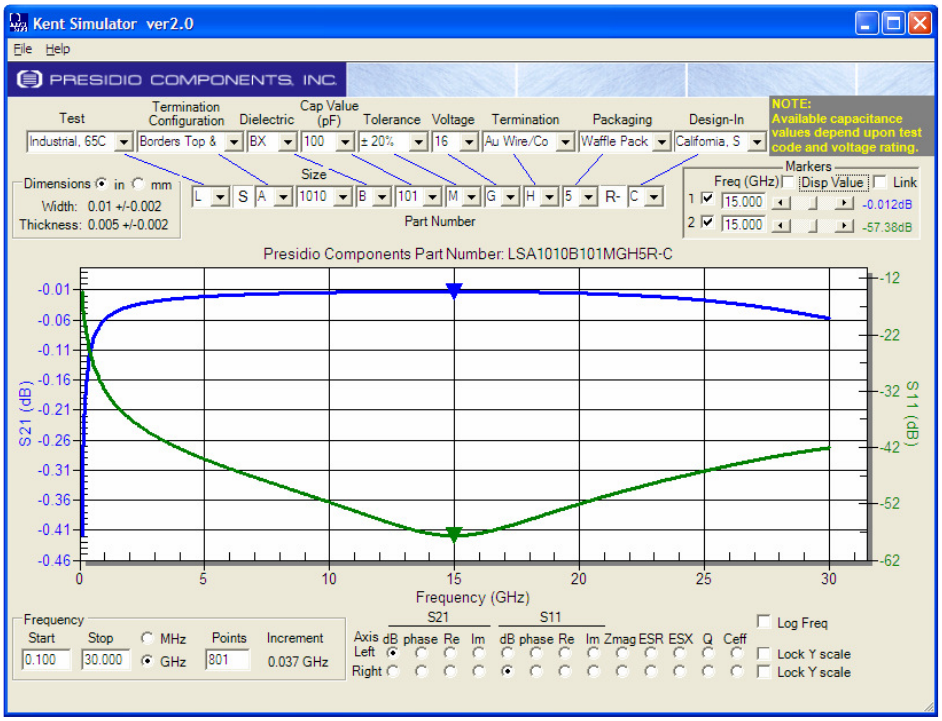
Modeled S21 and Ceff of part NSA3030N100J2H5R-, Class I dielectric.

PRESIDIO COMPONENTS, INC.
7169 Construction Court, San Diego, CA 92121 USA • Tel: 858-578-9390 • Fax: 800-538-3880 or 858-578-6225
Web: www.presidiocomponents.com • Email: info@presidiocomponents.com

- Ease of dielectric material selection: Presidio offers 3 ceramic materials while most other suppliers offer more than 15.
- RoHS compliant

Kent Simulator

Using the KENT SIMULATOR, a designer can obtain commonly needed RF capacitor parameters in graphical format for popular Presidio Components RF capacitors. In addition, S-parameters for selected capacitors can be saved in S2P format. All device parameters are derived from a series transmission line model developed by Dr. Gordon Kent and is available for download. A technical discussion of the simulation used in the Kent Simulator is presented by Dr. Kent in the "Summary of the Capacitor Simulator."



Kent Simulator Version 2.0: LSA1010B101MGH5R-

Typical Applications

Filter Capacitor

A filter design requires a specific capacitance value, C_F and at the upper end of the filter response, f_F, the effective capacity must not exceed C_F by more than a specified amount of ΔC. Once C_F is determined, case size, voltage rating and temperature characteristics can be selected. Typically, lower loss Class I materials like NPQ and NPO are first choice.

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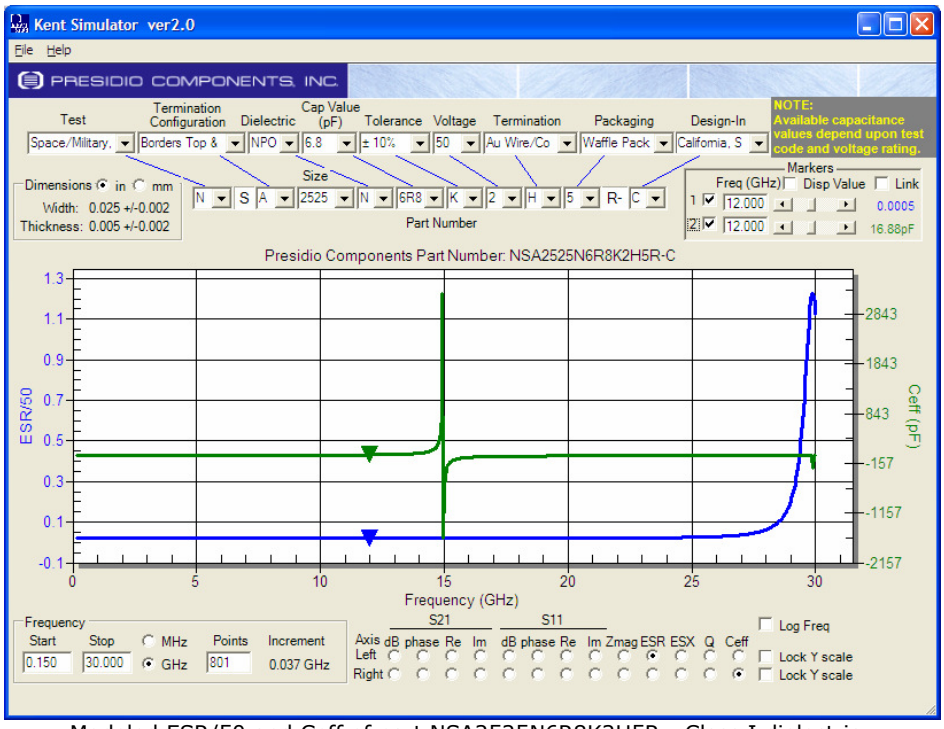
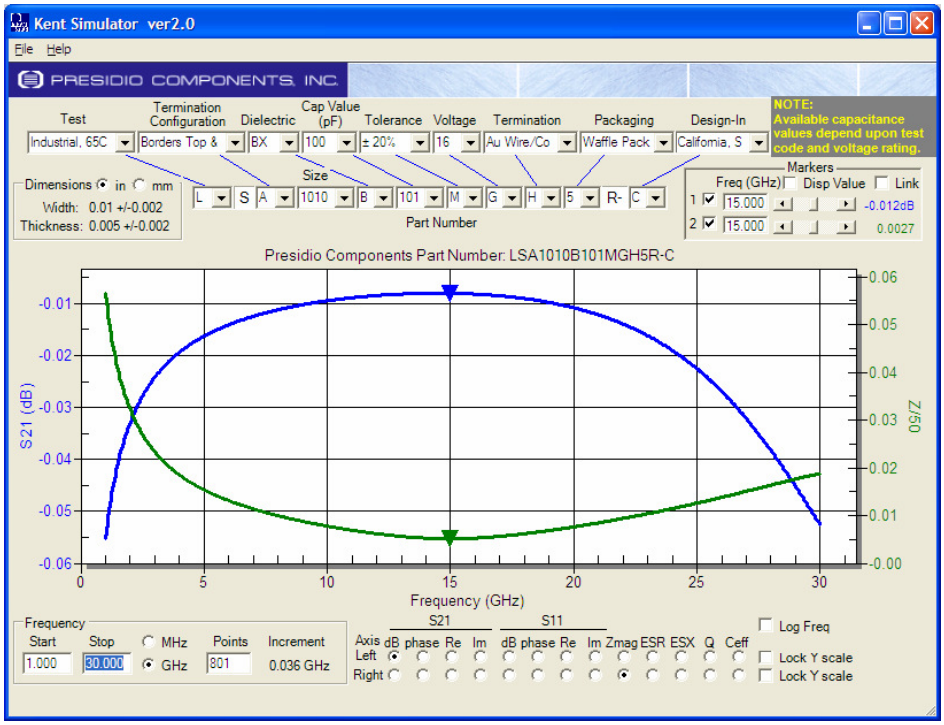


Modeled ESR/50 and Ceff of part NSA2525N6R8K2H5R-, Class I dielectric.

Resonance-Free Broadband Coupling/Decoupling Capacitor

Class II "BX" dielectric is typical for DC block or RF bypass applications to operate resonance free over a specified broad frequency range. Low impedance is typically more important than the capacitance value which should be large enough to cover the 3 dB low edge of the bandwidth.



Modeled S21 and Z/50 of part LSA1010B101MGH5R-, Class II dielectric.

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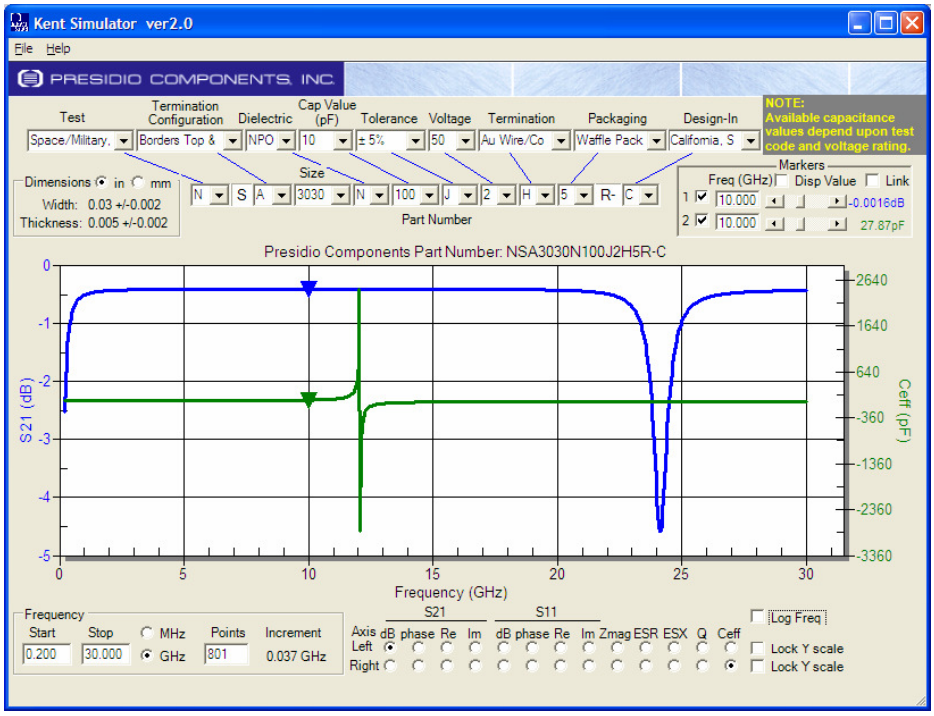
Minimum Loss, Finite Band Coupling Capacitor

When minimum loss is required, e.g. a low noise circuit, a high Q capacitor with Class I dielectric (NPQ or NPO) is recommended. Any parallel resonance frequency of the capacitor should be outside of the use frequency band. The best capacitor choice puts the series resonance at the band center (approximately f_0 / 2).



Modeled S21 and Ceff of part NSA3030N100J2H5R-, Class I dielectric.

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