Modelithics®
Accelerating Your Design Success!

Modelithics Presidio MVP Library
for High Accuracy Electronic Simulation

Modelithics® Vendor Partner

PRESIDIO

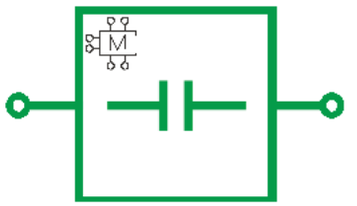
OVERVIEW

The **Modelithics Presidio MVP Library** is a collection of highly accurate measurement-based models that can be simulated in popular Electronic Design Automation (EDA) software tools. These models offer broadband parasitic prediction from DC to 20-60 GHz and offer scalable design parameters such as capacitance value, pad dimensions, and substrate conditions. These state-of-the-art models install seamlessly into the EDA software, placing high accuracy models at your fingertips, which allow for first pass design success!

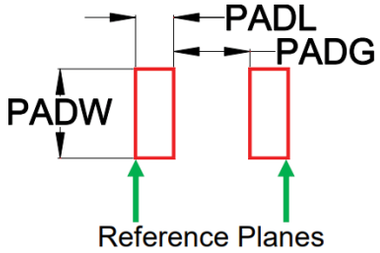
LIBRARY FEATURES

The Modelithics Presidio MVP Library offers a collection of **Microwave Global Models™** that provide many advantages over ideal and S-parameter file-based models. Valuable features of the models include:

- **MEASUREMENT-BASED** — Each global model is developed using highly accurate measurements across multiple conditions including different substrates and pad dimensions. By developing models using measurements, designers can have confidence that their simulations will represent real-world conditions.
- **SCALABLE** — The models can be scaled for capacitance value and substrate properties, allowing designers to simulate based on their specific conditions.
- **OPTIMIZATION AND STATISTICAL ANALYSIS** — Model parameters can be tuned and optimized in the EDA software to provide best case parameter selection rapid achievement of design goals. Model parameters can also be set up for statistical analysis.
- **AVAILABLE FOR POPULAR EDA TOOLS** — Keysight Advanced Design System (ADS), Cadence® AWR Design Environment®, Keysight RF Synthesis (Genesys), Keysight System Design (SystemVue), Keysight RFPro, Ansys® HFSS™, Sonnet® Suites™, Cadence Spectre RF® Option, Cadence® Clarity™ 3D Solver, and Mathworks MATLAB®.
- **COMPLETE DOCUMENTATION** — Each model contains a comprehensive model datasheet that lists recommended model validity parameters, measurement and test fixture details, and model-to-measurement data comparisons.

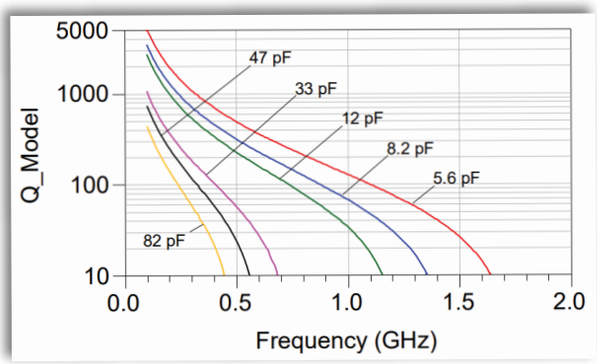


Modelithics Model for Presidio
P/N 0402UP Capacitor Series
CAP-PRS-0402-002
PC Board Footprint



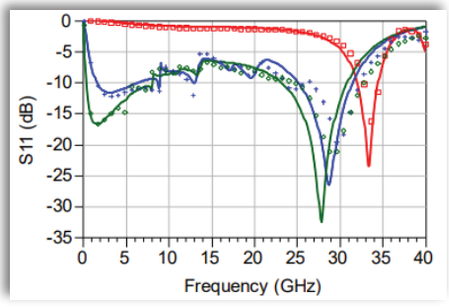
8.0 (0.20) ≤ PADL ≤ 29.5 (0.75)
25.2 (0.64) ≤ PADW ≤ 29.1 (0.74)
9.8 (0.25) ≤ PADG ≤ 30.0 (0.76)
Units in mil (mm)

Modelithics Model for Presidio 0603UP Capacitor Series
CAP-PRS-0603-001 Simulated Q-Factor



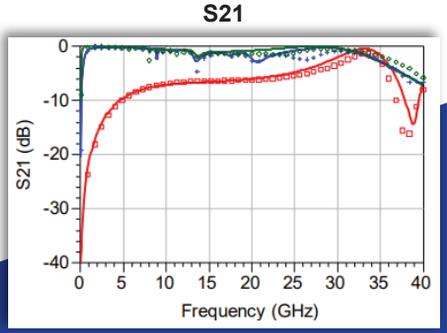
Solid lines - Model response on 60 mil Rogers 4003C

S11



Modelithics model for Presidio 0402UP capacitor series. 0.1 - 13 pF capacitance simulated on 4 mil Rogers 4350B from 0 to 40GHz.
(*S11 Above, S21 Right*)

S21



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List of Components in the Modelithics® Presidio MVP Library

Capacitors		
0402UP	0402UP*	BB0502X7R104M
0505UP	BB0201X7R103M*	BB0502X7R104M
0603UP	BB0402X7R104M2*	SR0402(NPO)

***3D version also available for Ansys HFSS / Keysight RFPro / Cadence Clarity**

Visit our website for an updated complete list of the Modelithics Presidio models:
www.Modelithics.com/MVP/Presidio

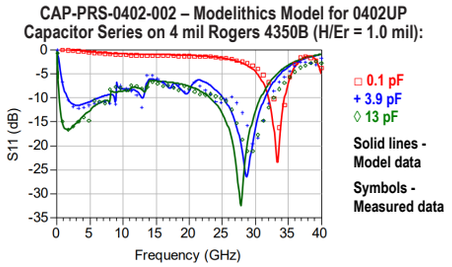
Modelithics® Pre-Release

Capacitors
SR0201(X7R)
SR0402(X7R)
SR0402(BX)

Also, check out the list of Modelithics Pre-Release models:
www.Modelithics.com/Model/PreRelease

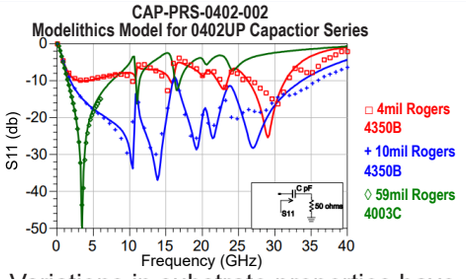
Advanced Model Features for More Accurate High Frequency Design

Part Value Scaling



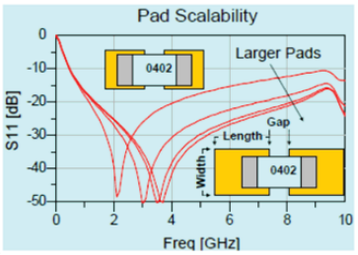
Modelithics Microwave Global Models™ for Presidio components have all values within a part series within one model. This allows for tuning and optimization by inductance and eliminates the need to manually substitute individual models during a design sequence.

Substrate Scaling



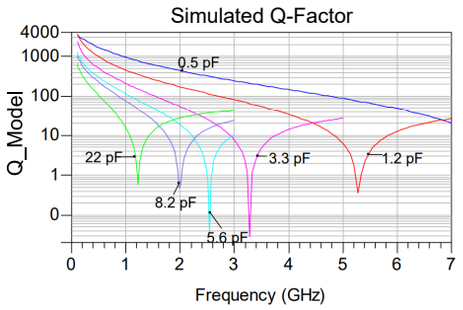
Variations in substrate properties have a significant effect on the response of surface mount components in high frequency designs. Modelithics models are substrate scalable and validated over a continuous range of substrate properties based on board thickness and dielectric constant.

Pad Size Scaling



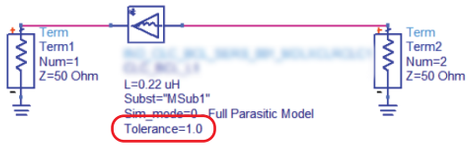
Modelithics models (in default mode) include the PCB pad with reference planes at the outer edges of the pads. The pad scaling feature lets designers adjust the dimensions to match their design, which is important for achieving maximum simulation-to-measurement agreement.

Quality Factor



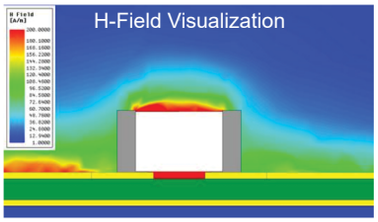
Models in the Presidio MVP Library incorporate precise Effective Series Resistance (ESR) measurements. Accurate ESR is important in determining the loss factor or Q-factor of low loss circuits.

Statistical Analysis



The Presidio models have a "Tolerance" parameter which enables compatibility with statistical analysis tools in some EDA software. Powerful analyses, such as yield prediction and tolerance analysis, can be done to help optimize design performance and reduce production cost.

3D EM Models



The 3D models are based on the physical characteristics of each component and can be used in full wave 3D electromagnetic (EM) simulation, including shielding design, effects of parts in close proximity, and more. Shown above is a 3D EM geometry model for a capacitor on 4 mil Rogers 4350B.

What's in YOUR DREAM LIBRARY?

Help us build ***YOUR*** dream library! Pre-Release models are added based on customer demand. Share your desired models with **sales@modelithics.com**!

Visit the Presidio MVP Page on the Modelithics website to:

- Explore the current list of available Presidio component models
- View model datasheets
- Browse literature collection for application notes, presentations, etc.
- Request a FREE* 90 day trial of the Modelithics Presidio model library:
  www.Modelithics.com/MVP/Presidio

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**with approval and/or valid registration*

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