Modelithics®
Accelerating Your Design Success!

Modelithics Amotech MVP Library
for High Accuracy Electronic Simulation

Modelithics® Vendor Partner

AMO AMOTECH

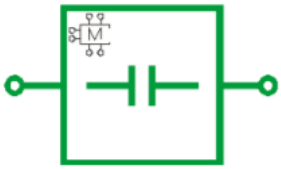
OVERVIEW

The **Modelithics Amotech 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 up 110 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!

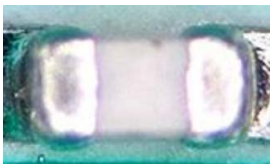
LIBRARY FEATURES

The Modelithics Amotech 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:

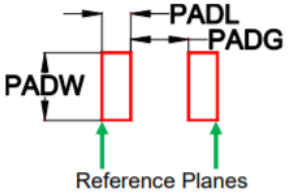
- **MEASUREMENT-BASED** — Each global model is developed using highly accurate measurements across multiple conditions including different substrates and pad dimensions. By developing models using measurements, designers can have confidence that their simulations will represent real-world conditions.
- **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 Technologies' Advanced Design System (ADS), Cadence® AWR Design Environment®, Keysight Technologies' RF Synthesis (Genesys), Ansys® HFSS™, Sonnet® Suites™, Cadence Spectre RF® Option, Mathworks MATLAB®, and SIMULIA® CST Studio Suite®.
- **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.



A60Z Capacitor Series Device Image

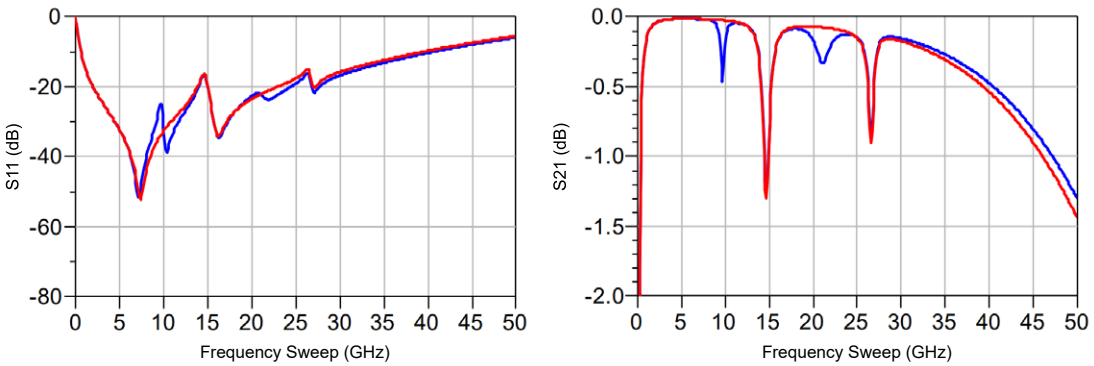


A60L Capacitor Series PC Board Footprint



17.0 (0.43) ≤ PADL ≤ 28.3 (0.72)
20.0 (0.52) ≤ PADW ≤ 28.3 (0.72)
11.0 (0.28) ≤ PADG ≤ 20.1 (0.51)
Units in mil (mm)

CAP-AMH-0201-001 for Amotech A60Z Capacitor: Horizontal vs. Vertical Model Comparison
6.6 mil Rogers 4350B (H/Er = 1.7 mil):



7.5 pF Capacitor. Blue line - Vertical Model performance, Red Line - Horizontal Model performance

Literature Showcasing Modelithics Amotech Models:

Application Note 80: Performing ESR Simulations of Modelithics Microwave Global Models in Keysight PathWave Advanced Design System (ADS)

Application Note 75: Utilizing the Tolerance Parameter of Modelithics Models for Monte Carlo and Yield Simulations in Keysight PathWave Advanced Design System (ADS)

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List of Components in the Modelithics® Amotech MVP Library

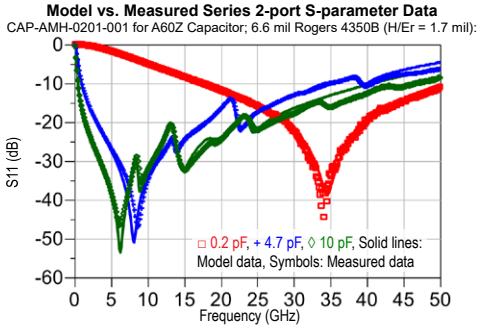
Capacitors			
A60F	A80B	ABCUC 101 0XX 473*	ABCUC 16S 01X 104*
A60L	ABCUA 50S 02X 104*	ABCUC1010XX223MNDG	ABCUC 16S01X223MNDG
A60S	ABCUC 061 0XX 104*	ABCUC 10S 01X 224	ABCUC 161 0XX 103*
A60Z	ABCUC 101 0XX 104	ABCUC 16S 01X 103*	ABCUC 252 01X 103

*3D Brick Model version also available for supported Modelithics simulators

More to come! New models are added continually. Visit our website for an updated complete list.
www.Modelithics.com/MVP/Amotech

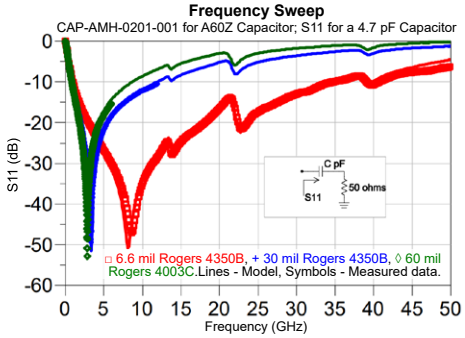
Advanced Model Features for More Accurate High Frequency Design

Part Value Scaling



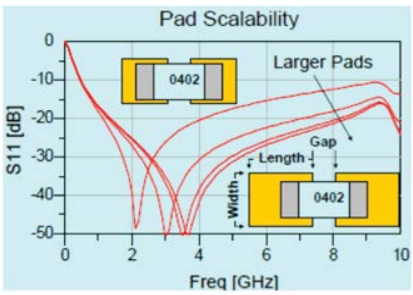
Modelithics Microwave Global Models™ for Amotech components have all values within a part series within one model. This allows for tuning and optimization by capacitance and eliminates the need to manually substitute individual models during a design sequence.

Substrate Scaling



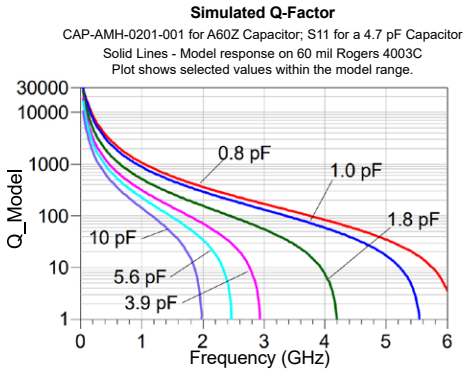
Variations in substrate properties have a significant effect on the response of surface mount capacitors in high frequency designs. Modelithics models are substrate scalable, validated over a continuous range of substrate properties, based on board thickness and dielectric constant.

Pad Size Scaling



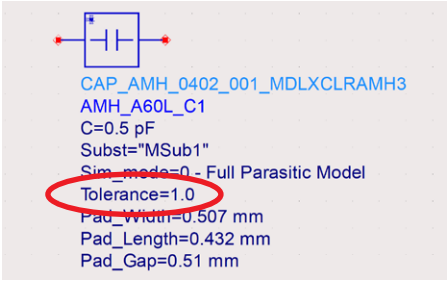
Modelithics models (in default mode) include the PCB pad with reference planes at the outer edges of the pads. The pad scaling feature lets designers adjust the dimensions to match their design, which is important for achieving maximum simulation-to-measurement agreement.

Quality Factor



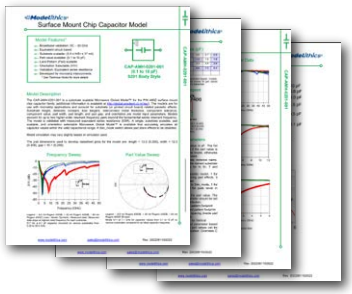
Models in the Amotech MVP Library incorporate precise Effective Series Resistance (ESR) measurements. Accurate ESR is important in determining the loss factor or Q-factor of low loss circuits.

Statistical Analysis



Modelithics Amotech 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.

Datasheets



Each Modelithics model has a datasheet that provides detailed information about the model, such as the validation frequencies, reference planes, part value / pad scalability / substrate scalability ranges, model performance, and details about other features and model parameters.

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 Amotech MVP Page on the Modelithics website to:

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

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*with approval and/or valid registration

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