Modelithics®
Accelerating Your Design Success!

Modelithics Kyocera-AVX MVP Library
for High Accuracy Electronic Simulation

Modelithics® Vendor Partner

KYOCERA AVX®

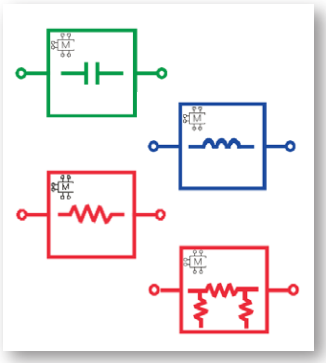
OVERVIEW

The **Modelithics Kyocera-AVX 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 Kyocera-AVX 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 inductance 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), Keysight System Design (SystemVue), 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.

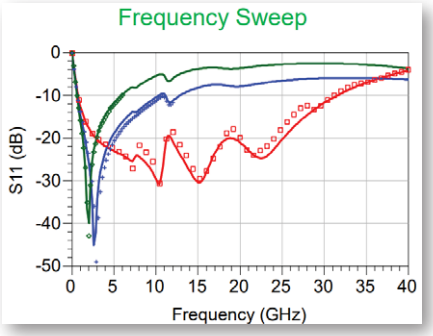


Literature Showcasing Modelithics Kyocera-AVX Models:

Application Note #85: Varactor-Based Tunable Filter Design Using Cadence AWR Design Environment and Modelithics Models

Article: A Case Study in Successful First-Pass Filter Design

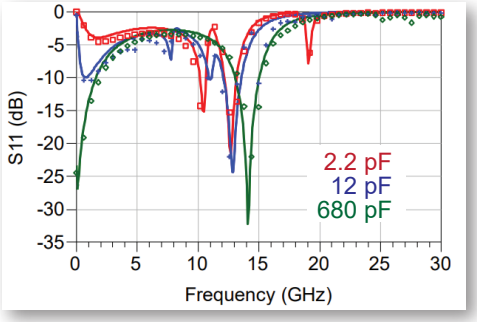
White Paper: Understanding S-Parameter Vs. Equivalent Circuit-based Models For RLC Component Simulations In Keysight ADS And Genesys



Modelithics model for AVX 0402U capacitor series.

Legend: □ 6.6 mil Rogers 4350B, + 20 mil Rogers 4003C, ◊ 60mil Rogers 4003C Lines - Model, Symbols - Measured data. Measured data stops at highest valid frequency for each substrate. S11 for a 6.8 pF capacitor mounted on various substrates from 0.05 to 40 GHz.

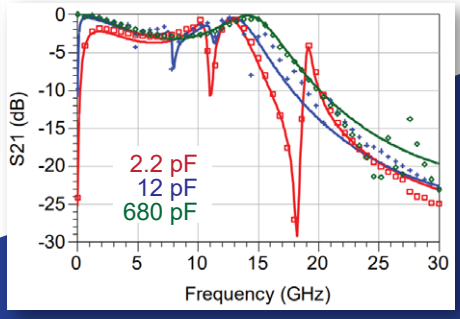
S11



Modelithics model for ATC 700A capacitor series. H/Er = 1.7 mil. Simulated on 4mil Rogers 4350B to 20 GHz.

Solid lines - Model data
Symbols - Measured data

S21



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List of Components in the Modelithics® Kyocera-AVX MVP Library

Capacitors			Couplers	Resistors	Inductors
02013A	560Z224*	Accu-P(0603)	CP0402AxxxxAN	CS12010T0050GTR	Accu-L(L0201)
0201YC	600F	GH06_Maxi	CP0402AxxxxBN	CS12010T0100GTR	Accu-L(L0402)
0201YD	600L	KGM02xCG*	CP0402AxxxxCN	CS13737	Accu-L(L0603)
0805xU	600S	KGM02xR5*	CP0402AxxxxDN	CT11020T0050	Accu-L(L0805)
100A	700A	KGM03xCG*	CP0402AxxxxEN	CW12010T0050GTR	DLA11017
100B	700B	KGM03xR7*	CP0402AxxxxFN	CW12010T0100GTR	DLA11018
200A	800A	KGM15xCG	CP0402W2700FN	CW137250T0050GTR	DLA11019
200B	800B	KGM15xR7	CP0603	CW137250T0100GTR	HL02
520L	800R	KGM21xCG	DB0603N2140AN	CZ12010T0050GTR	HLC02
530L	Accu-P*	KGM21xR7	DB0603N2400AN	CZ13725T0050GTR	HLQ02
550W103*	CU01*	KGM31xR7	DB0603N3000AN	CZ13737T0050GTR	
550W104*	DLA09024*	KGQ05xCG*	DB0603N3500AN	UBR(0402)	
550Z103	DLA09025	KGQ32xCG	PC2025A2100	**Attenuator**	
550Z104*	GH01_Maxi	ML03	PC2025A2700	FA10975PXXDB	
550Z224*	GH04_Maxi	MP01*			
560W104	Accu-P(0201)*	MP02*			
560Z104*	Accu-P(0402)*	MP03			
		U_Series-0603			

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

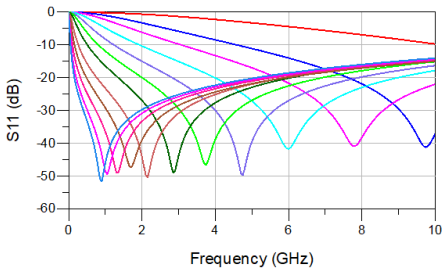
Visit our website for an updated complete list of the Modelithics Kyocera-AVX models: www.Modelithics.com/MVP/AVX

Learn More About 3D Brick Models

App Note #78: Using 3D Brick Models™ for Full-wave EM/Circuit Model Co-simulation of MLCC Capacitors in Ansys® HFSS™

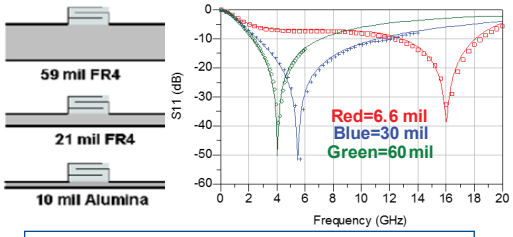
Advanced Model Features for More Accurate High Frequency Design

Part Value Scaling



Modelithics Microwave Global Models™ for Kyocera-AVX 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.

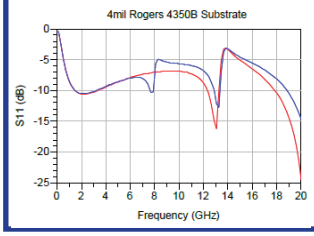
Substrate Scaling



S11 for 1.5pF capacitor. Symbols=measurement, Line=model

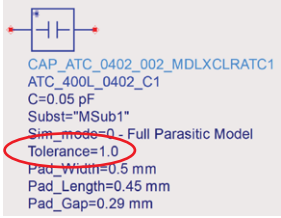
Variations in substrate properties have a significant effect on the response of surface mount components in high frequency designs. Modelithics models are substrate scalable, validated over a continuous range of substrate properties, based on board thickness and dielectric constant.

Orientation Selection



Some Kyocera-AVX capacitor models include orientation selectability. This represents the physical orientation in which the component is attached to the pads. The change in orientation is a 90° rotation of the part along one edge of the part length. Capacitors show different response depending on the mounting orientation.

Statistical Analysis



Kyocera-AVX component 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.

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 Kyocera-AVX MVP Page on the Modelithics website to:

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

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*with approval and/or valid registration

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