Overview
The Modelithics Würth Elektronik MVP Library is a collection of accurate measurement-based simulation models for Würth Elektronik eiSos electronic components, including inductors, ferrite beads and capacitors. The models, available for specific component families, are engineered for high accuracy RF, microwave and mm-wave simulation, offering scalable parameters and taking parasitic effects into account. Modelithics’ advanced models help designers achieve first pass design success!

Library Features
A number of advanced capabilities and special features are incorporated into the Modelithics Würth Elektronik MVP Library models, making them flexible and powerful design tools, above and beyond the capabilities of ideal or S-parameter file-based models. These features include:

- **Measurement-based**—Each Modelithics Microwave Global Model™ is developed using highly accurate measurements across multiple conditions such as different substrates and pad dimensions. By validating each model with precision Modelithics measurements, designers have confidence that their simulations will accurately represent real-world conditions.

- **Scalable**—The models can be scaled by component value (ex. inductance and capacitance), pad dimensions, and substrate properties, allowing designers to simulate based on their specific conditions.

- **Optimization and Statistical Analysis**—Model parameters can be tuned and optimized within the EDA software to provide best case parameter selection and rapid achievement of design goals. The models are also compatible with statistical analysis tools.

- **Available for Multiple Popular EDA Tools**—Keysight Technologies’ Advanced Design System (ADS) and Genesys, NI AWR Design Environment/Microwave Office™, ANSYS® HFSS™ and Sonnet® Suites™.

- **Complete Documentation**—Each model comes with a comprehensive model datasheet that details recommended model validity parameters, gives test fixture and measurement information, and presents model-to-measurement comparisons.

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Modelithics Microwave Global Models™ for Würth Elektronik WE-KI 0603 inductor series. 82 nH inductor simulated on three different substrates to 20 GHz.
**List of Components in the Modelithics® Würth MVP Library**

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**Advanced Model Features for More Accurate High Frequency Design**

- **Part Value Scaling**: Modelithics Microwave Global Models™ for Würth components have all values within a part series within one model. This allows for tuning and optimization by part value 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, 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**: The components in the Würth library use precise Effective Series Resistance (ESR) measurements. The data is used to generate a frequency-dependent expression and in determining the loss factor, or Q-factor of low loss circuits.

- **Statistical Analysis**: The Würth 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.

- **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.

Visit the Würth MVP Page on the Modelithics website to:
- Explore the current list of available Würth component models
- View model datasheets
- Browse literature collection for application notes, presentations, etc.
- To Request FREE* downloads of the Würth simulation model library visit: www.Modelithics.com/MVP/Wurth  *with approval

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