Modelithics®
World's Best RF & Microwave Simulation Models

Modelithics® Piconics MVP Library
for High Accuracy Electronic Simulation

Modelithics® Vendor Partner

PICONICS® High-Quality Micro-Electronic Inductors

OVERVIEW

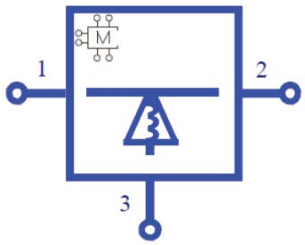
The Modelithics Piconics MVP Library is a collection of highly accurate measurement-based models that can be simulated in popular Electronic Design Automation (EDA) software tools. These models offer broadband parasitic prediction from DC to as high as 67 GHz and may offer scalable design parameters such as inductance value 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

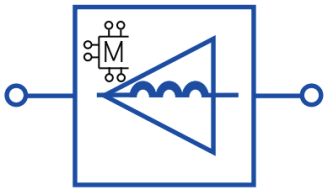
The Modelithics® Piconics MVP Library offers a collection of Microwave Global Models™ that provide many advantages over ideal and S-parameter file-based models. Valuable features of the models include:

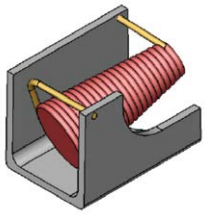
- **MEASUREMENT-BASED —** Each global model is developed using highly accurate measurements across multiple conditions including different substrates and pad dimensions. By developing models using measurements, designers can have confidence that their simulations will represent real-world conditions.
- **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 (PathWave ADS), Cadence® AWR Design Environment®, and Keysight Technologies' PathWave RF Synthesis (Genesys).
- **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.

IND-PIC-CONE-SHNT-001
(0.220 to 8 uH)
Conical Body Style

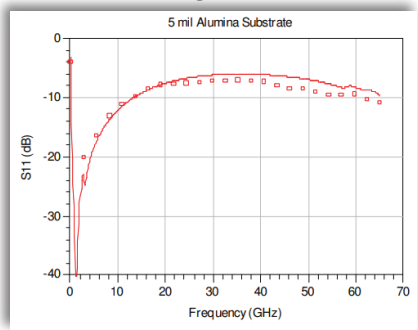


IND-PIC-CONE-SERS-201
(0.17 to 0.25 µH)
Conical Body Style



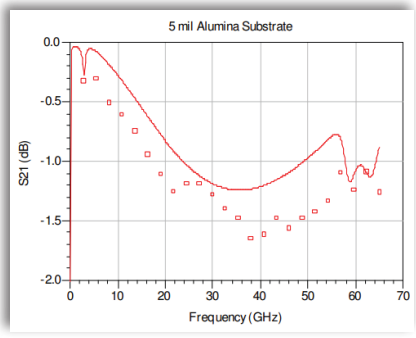


S11

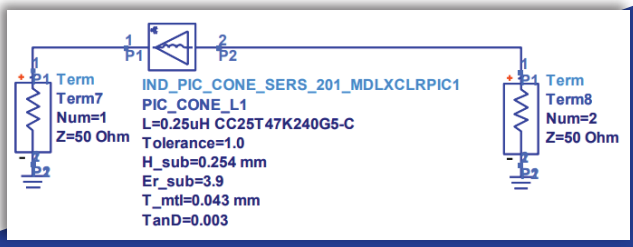


Modelithics model for Piconics CC19T40K240G5-C conical inductor mounted on 5 mil Alumina substrate in shunt configuration, 0.04 to 65GHz.

S21



Modelithics Model for Piconics
SMT 0.17 µH and 0.25 µH Conical Inductor Series
IND-PIC-CONE-SERS-201 Schematic Example



Excellence in Modeling Since 2001

List of Components in the Modelithics® Piconics MVP Library

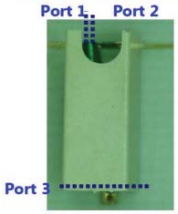
Inductors	
CC110T47K240G5-C	CC50T40K240G5-C
CC19T40K240G5-C	CC82T44K240G5-C
CC21T36K250G5-C	CC20T44K240G5-C
CC45T47K240G5C2	CC25T47K240G5-C

More to come! New models are added continually. Visit our website for an updated complete list and to see our available Pre-Release Models. (www.Modelithics.com/Piconics)

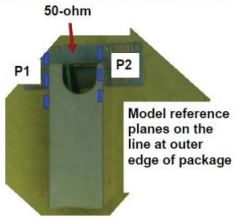
Advanced Model Features for More Accurate High Frequency Design

Alternate Configurations Available

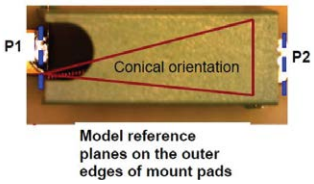
Shunt Model on a Substrate
IND-PIC-CONE-SHNT-101



Shunt Model over a Metal Carrier
IND-PIC-CONE-SHNT-001

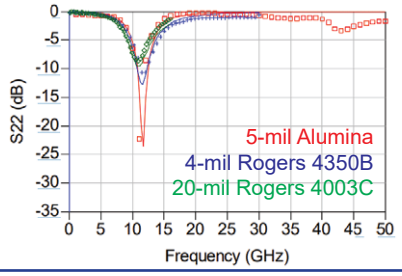


Scalable Series Model
IND-PIC-CONE-SERS-101



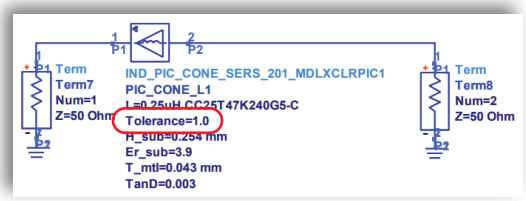
Alternate model versions exist in Modelithics CLR Library for similar Piconics conicals, 0.22 to 8 µH SMT, but mounted in slightly different configuration (eg. Different substrates and with different reference planes). For more details, please refer to Modelithics models: IND-PIC-CONE-SERS-001, IND-PIC-CONE-SHNT-001, and IND-PIC-CONE-SHNT-101.

Substrate Scaling



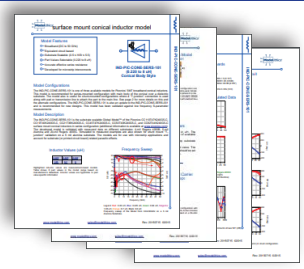
Variations in substrate properties have a significant effect on the response of surface mount components in high frequency designs. Modelithics models are substrate scalable, validated over a continuous range of substrate properties, based on board thickness and dielectric constant.

Statistical Analysis



Some of the Piconics 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.

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 Piconics MVP Page on the Modelithics website to:

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

*with approval and/or valid registration

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