

Custom Modeling Services

Technologies

Accurate, [measurement-driven models](#) for a wide range of customer-specified devices, components and assemblies can be provided. Fast turn-around model delivery is currently available for:

GaN HEMT	Surface Mount and Integrated Passives	Amplifiers
Silicon LDMOS/VD MOS		Mixers
GaAs MESFET/HEMTs	Capacitors, Inductors, Resistors	Switches
GaAs, InP and SiGe-based HBTs	Interconnects	Couplers
Silicon CMOS and BJTs	Resonators	Attenuators
	Diplexers and Filters	
Diodes PIN/Varactor/Schottky /step recovery Diodes		

Versatility

Through Modelithics' Custom Modeling Service customers can order linear, bias-dependent small signal, noise and/or non-linear models for components and devices in chip or packaged format. Model topologies may be customer-specified or determined based on the advice of Modelithics.

Models for active and passive surface-mount components are generated using standard or application-specific test fixtures to ensure accuracy in the user's design environment. Using efficient extraction techniques, these models can be made substrate-scalable to substantially expand the usability into a wide range of products. Non-linear model capability addresses a wide range of prediction needs including power, efficiency and distortion for PAE and harmonic generation and compression characteristics for diodes and other active components.

*Global Models™ for passive components, which represent an entire range or family of parts, can also be provided - these models speed-up design time by facilitating automated circuit optimization algorithms that are integrated into most computer-aided-engineering (CAE) simulation tools. Modelithics Global Models™ can be driven by the nominal part value, substrate characteristics, and (soon to be added) temperature. Designers can optimize the part selection for a given circuit requirement while simultaneously including all parasitics and substrate effect, significantly cutting design time.

System Level Component (SLC) models, our latest introduction allow linear and non-linear prediction for higher level functional components like amplifiers, mixers, filters, switches, resonators, etc.. The same attention to detail in establishing well defined reference planes, documenting test conditions used for model validation and development, used in Modelithics other passive and active model developments are now extended to our system level component modeling.

Documentation

All models are provided with complete documentation pertaining to the measurement conditions, model-to-measurement comparisons, and typical range of validity. Depending on the models intended applications, advanced features validated, and documented within the data sheets included with each

model, include aspects like substrate and pad scaling, temperature effects and broad-band frequency coverage, nonlinear performance and noise predictions.

For inquiries about other simulation platforms, please contact sales@modelithics.com

Model Validation and Library Maintenance

Characterization and validation can be performed to ensure that models are consistent with current device technology and/or manufacturing methods, or to extend the operating conditions and range of validity of existing models.

CAE model library development and maintenance combines custom modeling, database and periodic model verification services in a single package. Records include historical documentation on measurement calibration and device data, model validation results and relevant CAE platform specific information.

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