Modelithics®
Accelerating Your Design Success!

Modelithics Library
for MathWorks MATLAB®

MathWorks® Partner

Overview

The **Modelithics Library** for MathWorks MATLAB delivers industry leading accuracy and flexibility for electronic design. Highly scalable, each model enables precise simulation of real world details such as substrate and pad characteristics. Featuring **~28,000** components from **30+** top manufacturers, the Modelithics Library for passive devices empowers engineers to achieve first-pass design success with confidence. View the **Overview Video** to learn more about the Modelithics Library.

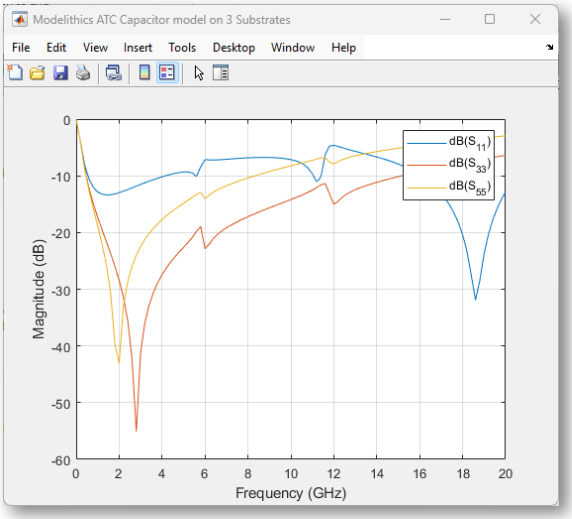
Library Features

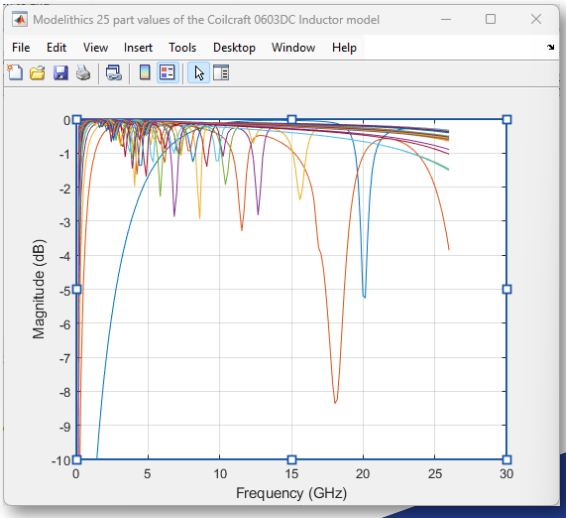
The Modelithics Library for MathWorks MATLAB offers an extensive selection of **Microwave Global Models™**, representing thousands of components. The installed models are fully integrated with MATLAB electronic design automation (EDA) software. Modelithics also features a substrate library containing measurement-based substrate parameters for many of the most commonly used substrates. See the full list of Modelithics **Advanced Model Features**.

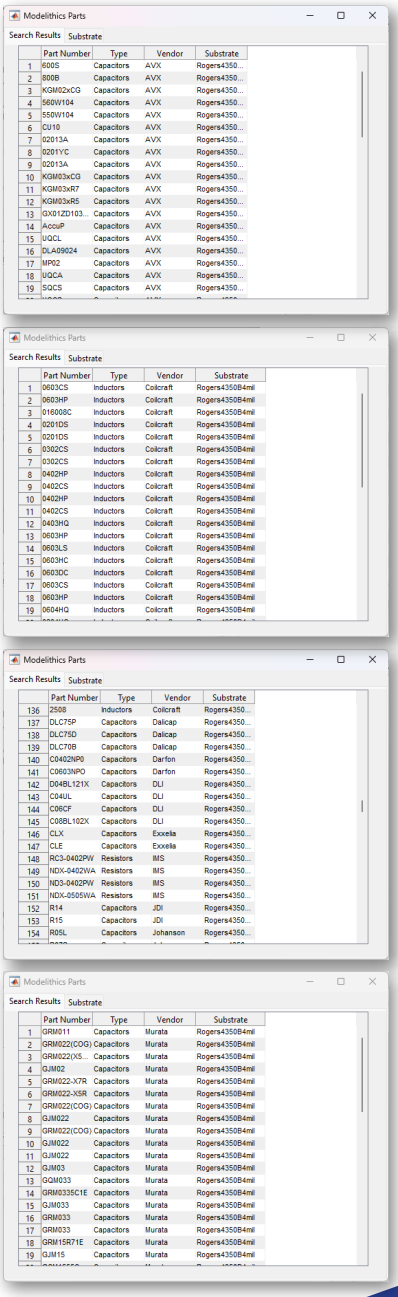
- **Measurement-Based** — Each model is developed using specialized measurements under device-specific test conditions.
- **Scalability** — Part-value, substrate, pad-size and temperature scalability are incorporated into many models.
- **Model Documentation** — Each model contains a model datasheet that lists recommended model validity parameters, measurement and test fixture details, and model-to-measurement data comparisons.

Sub-Libraries of the Modelithics Library

- **mmWave & 5G Library** — A collection of models focused on supporting the next generation of cellular communication standards. All models in the mmWave & 5G Library are validated to a minimum of 30 GHz, with some validated up to 125 GHz!
- **Single-Vendor Sub-Library** — Includes all models for one selected vendor. Choose from the over 30 vendors within the Modelithics Library.







(Above) Search results showing available substrates

(Left) Modelithics ATC Capacitor Model on 3 Substrates

(Center) Modelithics 25 part values of the Coilcraft 0603DC Inductor model

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List of Components in the Modelithics Library for MathWorks MATLAB

Modelithics Vendor Partners (MVPs)

Aeroflex

RESISTORS
PPC100-200AW, NPC20-40S, NPC 50-100W, ANC50-100W, NPC50-50W, ANC50-50W

Amotech

CAPACITORS
ABCUC 161 0XX 103, ABCUC 101 0XX 473, ABCUC0610XX104, A60Z, ABCUC16S01x103, ABCUC 252 01X 103, ABCUC 10S 01X 224, ABCUC 16S 01X 104, A60L, ABCUA50S02x104, A60S, A60F, A80B

Chilisin

INDUCTORS
CLH1680, CLH2012,CL2012

Coilcraft

INDUCTORS
016008C, 0201HL, 0201DS, 0302CS, 0402DC, 0402HP, 0402CS, 0403HQ, 0603LS, 0603CT, 0603HL, 0603HC, 0603DC, 0603CS, 0603HP, 0604HQ, 0805CS, 0805HT, 0805CS, 0805HP, 0805LS, 0805CS, 0806SQ, 0807SQ, 0906, 0908SQ, 1008CS, 1008HQ, 1008CT, 1008CS, 1008HS, 1010HQ, 1111SQ, 1206CS, 1212VS, 1515SQ, 1606, 1812CS, 2222SQ, 2929SQ, 4310LC, XLG6020, BCL, BCR, GA309x, 132-xxSM, 1812SMS-xxN, AxxT, BxxT, 1508-xxx, 2508-xxx

Dalicap

CAPACITORS
DLP70A, DLP75P, DLP74D, DLP70B

Darfon

CAPACITORS
C0402NP0, C0603NP0

DLI

CAPACITORS
C04BL121C, C06BLBB, C06CF, C08BL242X, C08BL102X, Milli-Cap, Opti-Cap

Exxelia

CAPACITORS
SHF251xxx, CLX, CLE

IMS

RESISTORS
RC4-0302PW , RC3-0402PW, NDX-0402WA , ND3-0402PA, NDX-0505WA, NDX-1020EZW

JDI

CAPACITORS
R14, R15

Johanson

CAPACITORS
R05L, R07S, QCCF, QCCP, R14S, R15G, QCCT, R15S, S42E

INDUCTORS
L-05Cxxxx, L-07Wxxxx, L-07Cxxxx, L-14C, L-14W

Kemet

CAPACITORS
CBR01, C0201, CBR02, C0402C0G, C0402X7R, C0402X5R, CBR04 Auto, CBR04, CBR05, C0603, CBR06, C0805 NP0 C0805 X7R, C0805 C0G, C0805 X7R, C0805 X5R, C0805 BX, CBR08

KOA

CAPACITOR
HFC1005

RESISTORS
RK73x1H, RK73x1E, RK73x1J, RK73B2A, RK73B2B, RK73x2E, WK73S3A, RK73X3A

Kyocera-AVX

CAPACITORS
KGM02xCG, 550W103, 560W104, 550W104, CU1005, Accu-P 0201, CU131, MP01, 550Z, 550Z104, 550Z224, 560Z104, 560Z224, KGM03xCG, KGM03xR7, KGM03xR5, Accu-P 0402, DLA09024, KGQ05xCG, MP02, KGM15xCG, KGM15xR7, ML03, DLA09025, U0603, MP03, Accu-P (0603), KGM21xCG, KGQ21xCG, 08051C, 100A, 100B, KGQ31xR7, KGQ32xCG, 200A, 200B, 520L, 530L, 600F, 600L, 600S, 700A, 700B, 800A, 800B, 800R

INDUCTORS
Accu-L (0201), DLA11017, Accu-L (0402), Accu-L (0603), DLA11018, Accu-L (0805), DLA11019

RESISTORS
UBR0402, PB81020T0050, RP42010R0050GTTR, RP42010R0100GTTR, RP52010R0050GTTR, RP52010R0100GTTR, RP92010T0050GTTR, RP53725R0050GTTR, RP53725R0100GTTR, RP93725T0050GTTR, RP93737T0050GTTR, RP43737T

Murata

CAPACITORS
GRM011, GRM022, GJM022, GQM033, GRP033, GJM033, GRM033, XBSC 941.000.012.001, XBSC 941.000.012.001, GRM155R71H, GRM155R71E, GJM1555C1H, GCM1555C, GRM155C1H, GRM155R71H, GQM1555, GRM188R71H, GQM188, GQM1885C1H, GRM188R7, GRM1885C1H, GQM187, GRM2165C2A, GRM21BR72A, GQM219, GRM219, GQM22M, GRM32ER71J, GRM32EC7, GRJ32DC7

INDUCTORS
LQP02HV, LQP02HQ, LQP02TQ, LQP02TN, LQP03TN, LQP03TG, LQP03TN, LQP03HQ, LQW04, LQW15A, LQP15M, LQW15AN-10, LQG15H, LQW15AN-80, LQP18M, LQG18M, LQW18AN-80, LQW18AN-10, LQW18A

NIC Components

RESISTOR
NRC06

Panasonic

INDUCTORS
ELJRG, ELJRF, ELJRE

RESISTOR
ERJ2GE0R00X

Passive Plus

CAPACITORS
01005BB104, 0201BB, 0201N, 0402N, 0505C, 0603N, 0708N, 0805N, 1111N, 1111C

RESISTORS
R35-1209BB, R35-2010BB

Piconics

INDUCTOR
MK Series

Presidio

CAPACITORS
BB0201X7R103MR0VT820, BB0402X7R104M2xxxx, 0402UP, BB0502X7R104M, 0505, 0603UP

Samsung

CAPACITORS
CL02CxxxxxxA, CL02CxxxxxxG, CL03, CL31A106K, CL32B475K

RESISTORS
RC0402, RC1005

Susumu

RESISTORS
RFD0603P

Syfer

CAPACITORS
H Range (0402), High Q Ultra Low ESR, H Range (0805), 4040J

Taiyo Yuden

CAPACITORS
LMK042, JMK042, MK042, TVS042, TMK063, JMK063, EMK063, UMK105,

INDUCTORS
UMK105, HKQ0603S, HKQ0603U, HKQ0603W, HK1005, HK1608, HK2125

TDK

CAPACITORS
C0402C0G, CGA1A2C0G, CGA1A2X7R, CGB1T3X5R0J104M, C0603C0G, C1005CH, C1005X5R, C3225X7R

INDUCTORS
MHQ0402PSA, MLG0402Q, MLG0603S, MLG0603, MLK1005S, MLG1005S, MHQ1005P, NLV25T, MLF2012

Toko

INDUCTORS
LLV0603-F, LL1005-FHL, LL1608-FSL, LL2012-FHL

Vishay

CAPACITORS
HPC0402, VJ0402D, VJ0603D

RESISTORS
CRCW01005, CH02016, D10, FC0402, CH0402, FCHP0402xxxBGT, FCHP0402xxxBTT, MCS0402, D11, MCT0603, CH0603, CRCW1206, MMA0204

Vishay-Barry

RESISTORS
RK0603ZZ, RE0805CT, RY0805CT, RE1005CT, RY1005CT, RE1206CT, RYC1206CT, RZC1206CT (2-Port), RZC1206CT (1-Port)

Voltronics

CAPACITORS
JR030, JR060, JR100, JR150, JR200, JR300, JR400, JR500

Würth Elektronik

CAPACITORS
WCAP-CSRF (NP0), WCAP-CSRF (NP0), WCAP-CSMH (NP0), WCAP-CSMH (X7R), WCAP-CSMH (NP0), WCAP-CSMH (X7R) 0.8mm, WCAP-CSMH (X7R) 1.25mm

INDUCTORS
WE-MK, WE-KI, WE-TCI, WE-KI HC, WE-MK, WE-KI, WE-KI HC, WE-MK (0603), WE-AC-HC, WE-CAIR

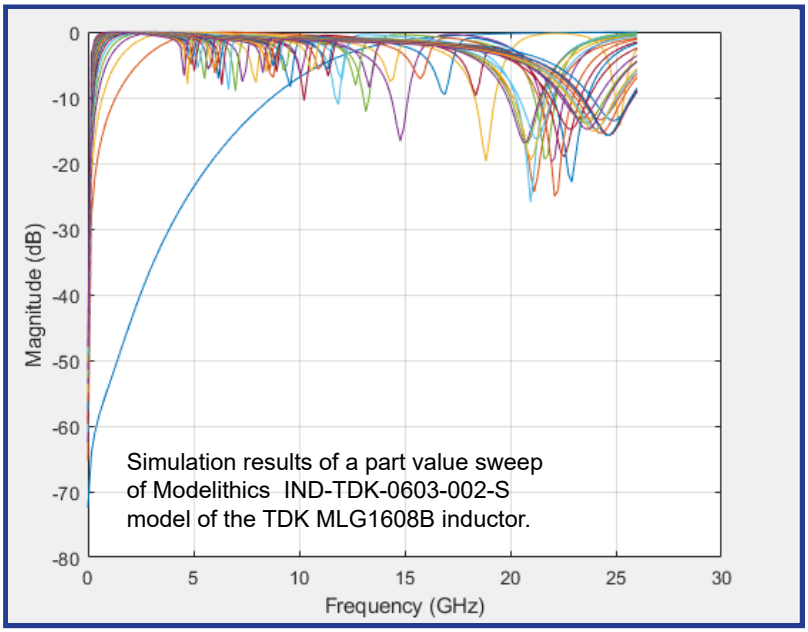
Yageo

CAPACITORS
CQ0100, CQ0201, CC0201, CQ0402, AQ0402, CQ0603, AQ0603, CQ0805

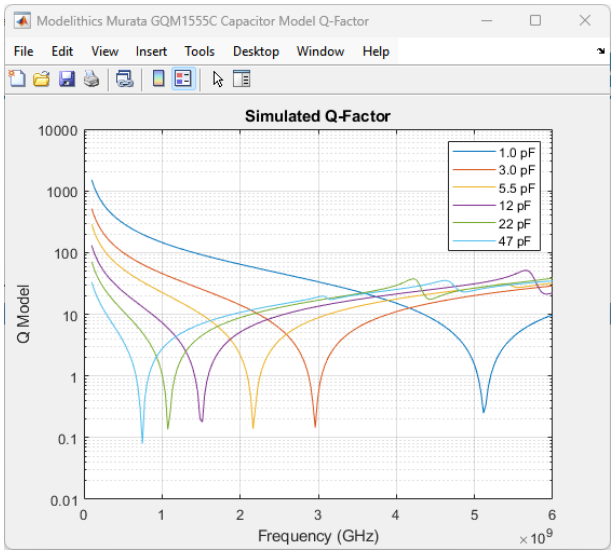
RESISTORS
RC0100, RC0201

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**!



Simulation results of a part value sweep of Modelithics IND-TDK-0603-002-S model of the TDK MLG1608B inductor.



Simulated Q-Factor using a Modelithics capacitor model of the Murata GJM1555C1H family based on randomly selected part values from 0.1 – 20 pF.

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Learn More About Modelithics' Library & Licensing Options

Video: Modelithics COMPLETE Library Overview

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