



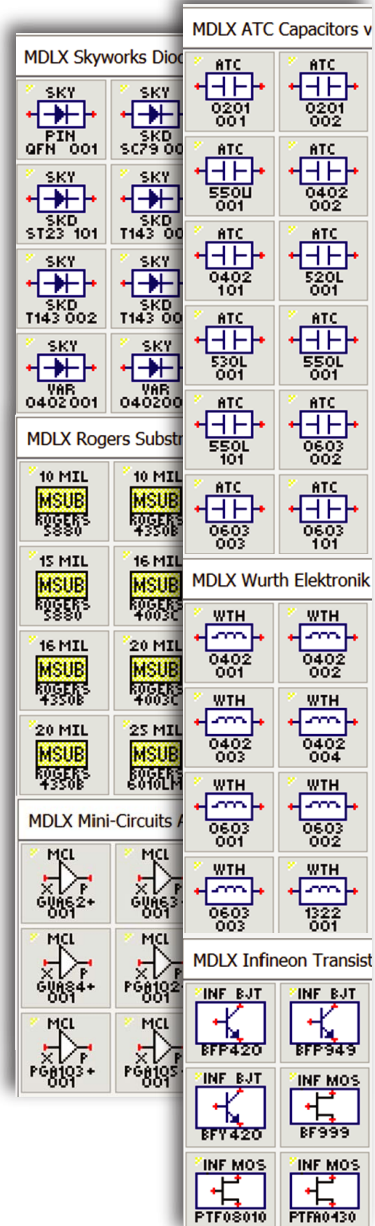
### Overview

The **Modelithics COMPLETE Library** for Keysight ADS brings incredible flexibility and accuracy to electronic designs. Modelithics models are scalable, allowing design details, such as substrate and pad characteristics, to be specified and simulated. The Modelithics COMPLETE Library includes thousands of popular passive and active devices with modeling accuracy to deliver first-pass design success.

### Library Features

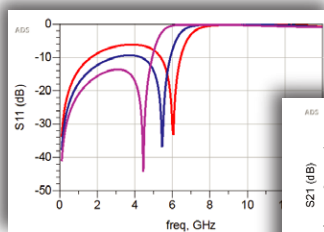
The Modelithics COMPLETE Library for Keysight ADS offers an extensive selection of models, representing thousands of components. The installed models are fully integrated with Keysight ADS electronic design automation (EDA) software. Modelithics COMPLETE also features a substrate library containing measurement-based substrate parameters for many of the most commonly used substrates.

- **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.
- **X-Parameter\* models** — An alternative to compact non-linear equivalent circuit models for transistors that can speed up non-linear simulations and facilitate model portability between simulation platforms. They provide accurate non-linear model representations of complex integrated circuits for which equivalent circuit modeling is not practical.

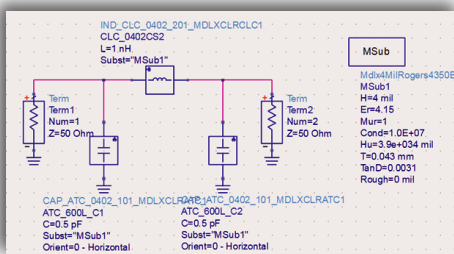
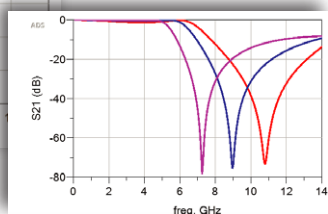


### Sub-Libraries of the Modelithics COMPLETE Library

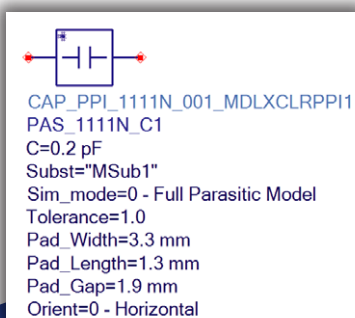
- **CLR Library** — Capacitor, inductor and resistor **Microwave Global Models™**
- **mmWave & 5G Library** — All models validated to a minimum of 30 GHz, with some validated up to 125 GHz.
- **Small Parts Sub-Library** — A sub-library of the Modelithics CLR library of components with body sizes smaller than 0502, including 0402, 0201 and 01005.
- **Single-Vendor Sub-Library** — Includes all models for one selected vendor. Choose from the 65+ vendors within the COMPLETE Library.



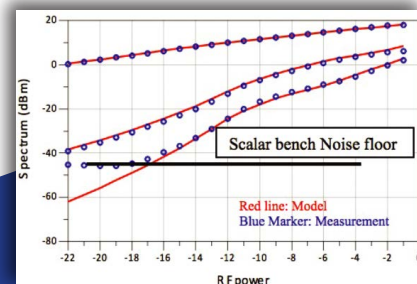
Simulated S-parameters of a simple low-pass filter on three different substrates. Modelithics models account for substrate parasitics.



### Example Modelithics Capacitor Model in ADS



X-Parameter model simulated outputspectrum compared to measured results for a SMT RFIC amplifier (LNA/PA driver)



- Scalable Modelithics models accurately predict parasitic effects, providing excellent modeled-to-measured results.
- Microwave Global Models™ can be tuned and optimized to quickly reach design goals in simulation.
- Evaluate tolerance effects with statistical analysis tools.
- Modelithics models are precision measurement-based equivalent circuit models, and will exhibit physical behavior, even beyond the measurement frequency.

\* "X-parameters" is a trademark of Keysight Technologies, Inc. The X-parameters format and underlying equations are open and documented. For more information, refer to X-parameters Open Documentation, Trademark Usage & Partnerships.

<b>Aeroflex / Metelics</b>
<b>DIODES</b> MSSP25250-70, MMP7065-11, MLP7100, -7110, -7120, -7101, MSD710
<b>API-Inmet</b>
<b>RESISTORS</b> NPC-, ANC-, PPC- (high power)
<b>ATTENUATORS</b> PCAx/PCAAx/TCAF
<b>Avago</b>
<b>AMPLIFIER</b> MGA86576
<b>NPB/JT PACKAGES</b> AT-41511, AT-41533, AT-64023
<b>AVX</b>
<b>CAPACITORS</b> C0G (NPO), X7R, X5R, CU01, 0402XU, 0603XU, 0805XU, 1206XC, Accu-P (01005, 0201, 0402, 0603), AQ12, UQCA, UQCB, UQCF, UQCL, UQCR, UQCS, SQCA, SQCB, SQCF, SQCS, ML03, DLA (0402, 0603), MP01, MP02, MP03 (ATC) 600L, 600S, 600F, 100A, 100B, 200A, 200B, 520L, 530L, 700A, 700B, 800A, 800B, 800R, 400Z, 400L, 400S
<b>INDUCTORS</b> HLQ02, HLC02, HL02, Accu-L (0201, 0402, 0603, 0805), DLA (0402, 0603, 0805) (ATC) MOL
<b>RESISTORS</b> RP-Series (high power) (ATC) Style CS, CT, CW, CZ (high power), 504L
<b>ATTENUATORS</b> RP10975AxvDB (ATC) FA10975PxvDB
<b>COUPLERS</b> CP0603, CP0402, DB0603, PC2025A2100, PC2025A2700
<b>DIPLEXERS</b> DP03, DP05, DP06
<b>Barry Industries</b>
<b>ATTENUATORS</b> AK0405CB, AT0904CB
<b>RESISTORS</b> RK0603, RE0805, RY0805, RE1005, RY1005, REC1206, RYC1206, RZC1206
<b>PACKAGE</b> QFN532-050x
<b>CEL</b>
<b>LOW NOISE FET</b> CE3512K2, CE3514M4, CE3520K3
<b>Central Semiconductor</b>
<b>DIODES</b> CMXD6001 General Purpose
<b>Chilisin</b>
<b>INDUCTORS</b> CLH1608, CLH2012, CL2012
<b>FERRITE BEADS</b> SBY1005, PBY1608, GBY1608
<b>Coilcraft</b>
<b>INDUCTORS</b> 0201DS, 0302CS, 0402CS, 0603CS, 0402HP, 0402AF, 0402DC, 0402DF, 0403HQ, 0603HP, 0603LS, 0604HQ, 0805CS, 0805HT, 0805HQ, 0805HP, 0906, 1008CS, 1010VS, 1212VS, 1606, 1008HQ, 1008HS, 1008CT, 1206CS, 1812CS, MAXI, MIDI, MINI, 0806/0807/0908SQ, GA309X, 1111/1515/2222/2929SQ, 4310LC, BCL Conical, BCR Conical
<b>Cree</b>
<b>PACKAGED PHEMT</b> CGH35030F
<b>Darfon</b>
<b>CAPACITORS</b> C0402 (01005), C0603 (0201)

<b>Excelcis</b>
<b>MESFET</b> EFA060B55
<b>PHEMT</b> EPA1200A, EPA240BV
<b>Exxelia</b>
<b>CAPACITORS</b> CLX, CLE, SHF251xxx
<b>Freescaler</b>
<b>MOSFET</b> MRF1517, MRF1518, MRF281, MRF9030
<b>AMPLIFIER</b> MWE6IC9100NR1
<b>Gigalane</b>
<b>INTERCONNECTS</b> PSF-S00-000
<b>Gowanda</b>
<b>INDUCTORS</b> C060FL, C050SMC, C100FL, C100SM, C100SMC, C225FL, CC0603
<b>Guerrilla RF</b>
<b>AMPLIFIERS</b> GRF2070DS, GRF2071DS, GRF2072DS, GRF2073DS, GRF2093, GRF2100, GRF2106, GRF2501DSR, GRF4002, GRF4014
<b>Hexawave</b>
<b>MESFET</b> HWC27NC
<b>IMS</b>
<b>RESISTORS</b> RC4-0302PW, RC3-0402PW, NDX-1020EZW
<b>ATTENUATORS</b> A-0402WA-C, A-0603-C, IA3-0805WA, IA3-1206WA, IMS2652, IMS2533, A-0805, IMS1141
<b>Infineon</b>
<b>DIODES</b> BAR64-03W, BAR88-02V, BAS40, BAS40-04, BAS40-05, BAS40-06, BAS70, BAS70-04, BAS70-05, BB535, BB639, BB833, BBY51-02W, BBY52-02L
<b>NPB/JT</b> BFF420, BFR949F, BFY420
<b>MOSFET</b> PTF080101S, PTF0403002E, BF999
<b>JDI</b>
<b>CAPACITORS</b> R14, R15
<b>Johanson</b>
<b>CAPACITORS</b> R05L, R07S, R14S, R15S, R15G, S42E
<b>INDUCTORS</b> L-05Cxxx, L-07Wxxx, L-07Cxxx, L-14C, L-14W
<b>KEMET</b>
<b>CAPACITORS</b> C0402(C0G), C0402(X5R), C0402(X7R), C0603, C0805(BX), C0805(C0G), C0805(NPO), C0805(X5R), C0805(X7R), CBR02, CBR04, CBR05, CBR06, CBR08
<b>KOA</b>
<b>RESISTORS</b> RK73B1J(RK73H), RK73B2A, RK73B2B, RK73x1E(RK73H), RK73x1H(RK73B), RK73x1J, RK73x2E, RK73xA, WK73S3A
<b>CAPACITOR</b> HFC1005
<b>Knowles</b>
<b>CAPACITORS</b> (Slyfer) 0402 H-Range, HighQUltraLowESR

<b>Knowles (cont'd)</b>
<b>CAPACITORS</b> (Dielectric Labs) C04BL, C04UL, C06CF, C06UL, C06BL, C08BL, C11UL, Millicap, Opticap
<b>MACOM</b>
<b>LIMITER</b> 2690-1011
<b>AMPLIFIER</b> MAAL010704
<b>SWITCH</b> MASWSS0204
<b>GA NHEMT</b> NPT1012B, NPTB00004A
<b>DIODES</b> MA4PH235-1072, MA4P504-132, MAVR-00230-1141, MAVR-001330-1279, SMV20413, MLP7100, MLP7101, MLP7110, MLP7120, MMP7065-11, MSD710, MA4E1317
<b>Maxim</b>
<b>AMPLIFIERS</b> MAX2371, MAX2373
<b>MIXER</b> MAX2881
<b>MDT</b>
<b>DIODE</b> MP6250-P2715
<b>Microsemi</b>
<b>DIODE</b> UPP9401
<b>NPB/JT</b> SD1495-03
<b>Mimix</b>
<b>MESFET</b> CF003-01
<b>Mini-Circuits</b>
<b>BAND-PASS FILTERS</b> XBF Series
<b>AMPLIFIERS</b> AVA-183+, PMA2-133LN+, PMA2-33LN+, PMA2-43LN+, PMA3-83LN+, PMA-545+, PMA-5451+, PMA-5452+, PMA-5453+, PMA-5454+, PMA-5455+, PMA-5456+, PSA4-5043+, GVA-62+, GVA-63+, GVA-84+, PGA-102+, PGA-103+, PGA-105+, PHA-1+, PHA-22+, PSA4-5043+
<b>ATTENUATORS</b> RCAT, KAT, YAT, YAT-A
<b>SPLITTERS</b> EP2C+, EP2K1+, EP2K+, EP2W1+, EP2W+, EPQ-133+
<b>PHEMT</b> SAV-331+, SAV-541+, SAV-551+, SAV-581+, TAV2-14LN+
<b>HIGH-PASS FILTERS</b> XHF-Series, XHF2-Series, HFCN-2700+, HFCN-3800+, HFCN-5500+, HFCN-740+, HFCN880+
<b>TRANSFORMERS</b> NCS1-83+, NCS2-83+, NCS1-422+, NCS2-392+
<b>LOW-PASS FILTERS</b> LFCG-1000+, LFCG-1575+, LFCG-1700+, LFCG-2250+, LFCG-2850+, LFCG-320+, LFCG-400+, LFCG-530+, LFCN-1000+, LFCN-120+, LFCN1200+, LFCN-1200D+, LFCN-1575+, LFCN-1770+, LFCN-1800+, LFCN-1800D+, LFCN-2250+, LFCN-2850+, LFCN-3000+, LFCN-320+, LFCN-3800+, LFCN-400+, LFCN-4400+, LFCN-490+, LFCN-530+, LFCN-630+, LFCN-80+, XLF-Series
<b>Mitsubishi</b>
<b>HEMT</b> MGF4953A, MGF4953B

<b>Mitsubishi (cont'd)</b>
<b>MOSFET</b> RD01MUS1, RD01MUS2B, RD07MUS2B, RD07MUS2B, RD07MUS1, RD12MUS1
<b>Motorola</b>
<b>MOSFET</b> MRF1513, MRF1570
<b>MWT</b>
<b>MESFET</b> MWT-1, Mwt-7
<b>Murata</b>
<b>INDUCTORS</b> LQG15HS, LQG18, LQP02HQ, LQP02T, LQP02Q, LQP03HQ, LQP03TN, LQP15M, LQP18M, LQW04A, LQW15AN_00, LQW18AN_00
<b>BAND-PASS FILTER</b> SFE1A10M/GAA0_B0
<b>RESONATORS</b> DRR02011G45, DRR0201G350, DRR204G100, DRR030KE1R2
<b>CAPACITORS</b> GJM022, GJM03, GQM1555C, GQM187, GQM188, GQM219, GQM220M, GRM022, GRM022(XSR,X7R), GRM0335, GRM1555C1H, GRM155R71E, GRM155R71H, GRM188C1H, GRM188R71H, GRM188R72A, GRM2165C2A, GRM219, GRM32ER7J1, GRP033, UBSC_935_151_423_510, UBSC_935_151_424_610, UBSC_935_151_723_510, XBSC_939_118_492_510-xxS
<b>TRIPLEXER</b> LMT33AA148
<b>FERRITE BEADS</b> BLM156G, BLM156G, BLM18A, BLM18HG102SN1, BLM21P, BLM31P, BLM41P
<b>NXP</b>
<b>MOSFET</b> BF1211, BF1212, BLF542, BLF548
<b>JFET</b> BF861B, BF862
<b>NPB/JT</b> BFQ540, BFF505, BFF520, BFF540, PBR941
<b>On Semiconductor</b>
<b>DIODES</b> MMBD301LT1, MBD330DWT1
<b>JFET</b> MMBFU310LT1
<b>NPB/JT</b> MMBT3904LT1
<b>Panasonic</b>
<b>RESISTORS</b> ELJRG, ELJRF, ELJRE, ERJ2G
<b>INDUCTORS</b> ELJRG, ELJRF, ELJRE, ERJ2G
<b>Passive Plus</b>
<b>CAPACITORS</b> 01005BB104, 0201BB104, 0201N-ultra-low-ESR, 0402N-ultra-low-ESR, 0505C, 0603N-ultra-low-ESR, 0708N, 0805N-ultra-low-ESR, 1111C, 1111N-ultra-low-ESR
<b>CAPACITORS (cont'd)</b> 0805N-ultra-low-ESR, 1111C, 1111N-ultra-low-ESR
<b>RESISTORS</b> R35-1209BB, R35-2010BB
<b>Piconics</b>
<b>INDUCTORS</b> CCxxxTxxK240G5-C
<b>Premier Magnetics</b>
<b>TRANSFORMERS</b> DB2791S, DB2795S
<b>Presidio</b>
<b>CAPACITORS</b> 0402UP, 0505UP, 0603UP, BB0201X7R103M, BB0402X7R104M2, BB0502X75104M

<b>Qorvo</b>
<b>AMPLIFIERS</b> AH101, RF2878, RF5110G
<b>GaAsPHEMT</b> TGF2040, TGF2060
<b>RF360</b>
<b>BAND PASS FILTER</b> B7840
<b>RJR</b>
<b>PACKAGE</b> QFN01
<b>Rohm</b>
<b>DIODE</b> RB715F
<b>PNPBJT</b> EMT1
<b>NPB/JT</b> EMX1
<b>Samsung</b>
<b>CAPACITORS</b> CL02CxxxxxA, CL02CxxxxxG, CL03C
<b>Sawtek</b>
<b>DUPLXER</b> 856331
<b>SEDI</b>
<b>GA NHEMT</b> EGN010MK, EGN030MK
<b>MESFET</b> FLL120MK, FLL800Q, FSX017X
<b>Semicoa</b>
<b>NPB/JT</b> 2C2857
<b>Silicon Supplies</b>
<b>NPB/JT</b> 25CC3356
<b>Skyworks</b>
<b>SWITCHES</b> AS193-73, AS204-80
<b>DIODES</b> SMP1324-087LF, SMS3927-023, SMS3940-029LF, SMS7621-005, SMS7621-015, SMS7621-079, SMS7630-005LF, SMS7630-006LF, SMS7630-061, SMS7630-079LF, SMV1147, SMV1253-079, SMV1763-040LF, SMV2201-040LF, SMV2202-040LF, SMV2203-040LF, SMV2204-040LF, SMV2205-040LF
<b>Smiths Interconnect</b>
<b>EQUALIZER</b> CE_XXXX_N_XXX_SMTF
<b>RESISTORS</b> CRxxxxD, CTxxxxD
<b>ATTENUATOR</b> TT9
<b>Southwest Microwave</b>
<b>INTERCONNECTS</b> 1092-01A-5, 1093-04A-5
<b>SOTA</b>
<b>RESISTORS</b> S0202AF50R0FEB, S0303AF50R0FEB, S0505AF50R0FEB, S0505CF50R0FEB, S0505DF50R0FEW, S0505EF50R0FEW, S0603CF50R0FEB
<b>ST Micro</b>
<b>CAPACITOR</b> PTIC
<b>Taiyo Yuden</b>
<b>CAPACITORS</b> EMK042, EMK063, JMK063, LMK042_and_JMK042, TMK063, TVS042, UMK105
<b>INDUCTORS</b> HK0603, HK1005, HK1608, HK2125, HKQ0603S, HKQ0603U, HKQ0603W
<b>TDK</b>
<b>CAPACITORS</b> C0402C0G, C0603C0G, C1005CH, C1005X5R, C3225, CGA1A2C0G, CGA1A2X7R, CG1T3X5R0J104M

<b>TDK (cont'd)</b>
<b>INDUCTORS</b> MHQ0402PSA, MHQ1005P, MLF2012, MLG0402Q, MLG0603P, MLG0603S, MLG1005S, MLG1608B, MLK1005S, NLV25T
<b>Toko</b>
<b>TRANSFORMER</b> 617DB-1007
<b>BAND PASS FILTERS</b> ELFC455E, ELFY455E, ELFY455G
<b>INDUCTORS</b> LL1005-FHL, LL1608-FSL, LL2012-FHL, LLV0603-F
<b>Toshiba</b>
<b>DIODES</b> 1SV229, 1SV279, 1SV280, 1SV282, 1SV305, 1SV325, 1SV329, JDV2S07FS, JDV2S09FS, JDV2S41FS
<b>MOSFET</b> 25K3078A, 25K3476, RFM03U3CT, RFM04U6P
<b>Toyocom</b>
<b>BAND PASS FILTERS</b> HF373A, HFF-101A, HFF-101B
<b>UBE</b>
<b>RESONATORS</b> AO-K016-08, K020-03
<b>Vanguard</b>
<b>TRANSFORMERS</b> 100205, K Series, M Series, R Series, S Series
<b>INDUCTORS</b> Series2600, Series2700, Series3000, Series3300, Series3400, Series50000
<b>Virginia Diodes</b>
<b>DIODES</b> W Band Single Anode, W Band ZBD
<b>Vishay</b>
<b>CAPACITORS</b> HPC0402, VJ0402, VJ0402D, VJ0603D
<b>RESISTORS</b> CH02016, CH0402, CH0603, CRCW1206, D10, D11, FC0402, FC0402, MCT0603, MNA0204
<b>Würth Elektronik</b>
<b>INDUCTORS</b> WE_ACH, WE_CAIR, WE_KI, WE_KIHC, WE_MK, WE_TCI
<b>FERRITE BEADS</b> 74279223560, WE-CBA0402 (High Current), WE-CBA0402 (Wide Band), WE-CBA0603 (High Current), WE-CBA0603 (High Speed), WE-CBA0603 (Wide Band), WE-CBA0805 (High Current), WE-CBA0805 (High Speed), WE-CBA1206 (High Current), WE-CBA1206 (Wide Band), WE-CBA1806 (High Current)
<b>CAPACITORS</b> WCAP-CSM(H)(NPO), WCAP-CSM(H)(X7R), WCAP-CSM(H)(X7R) 0.8mm, WCAP-CSM(H)(X7R) 1.25mm, WCAP-CSRF(NPO)

**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](mailto:sales@modelithics.com)!

Email [sales@Modelithics.com](mailto:sales@Modelithics.com) or visit [www.Modelithics.com](http://www.Modelithics.com) to request a FREE trial!