Modelithics®
Accelerating Your Design Success!

Modelithics COMPLETE Library
for Cadence® AWR Design Environment®

cadence® CONNECTIONS

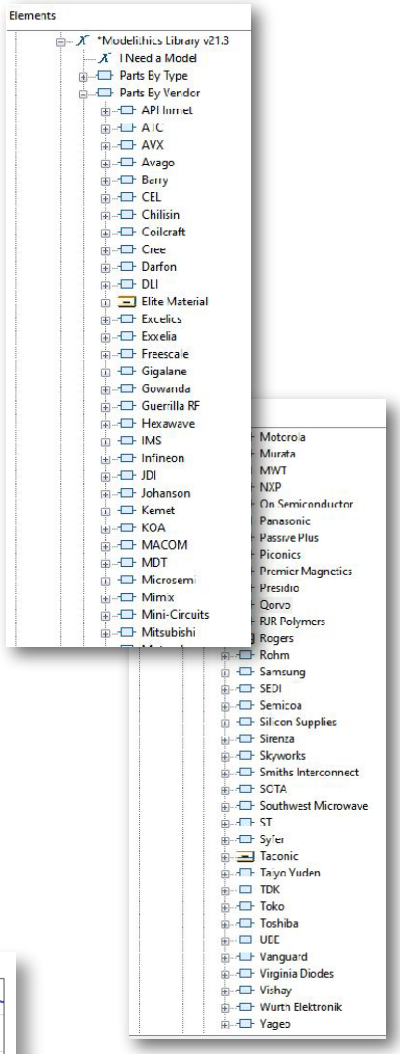
Overview

The **Modelithics COMPLETE Library** for Cadence AWR Design Environment 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. View the **Overview Video** to learn more about the Modelithics COMPLETE Library.

Library Features

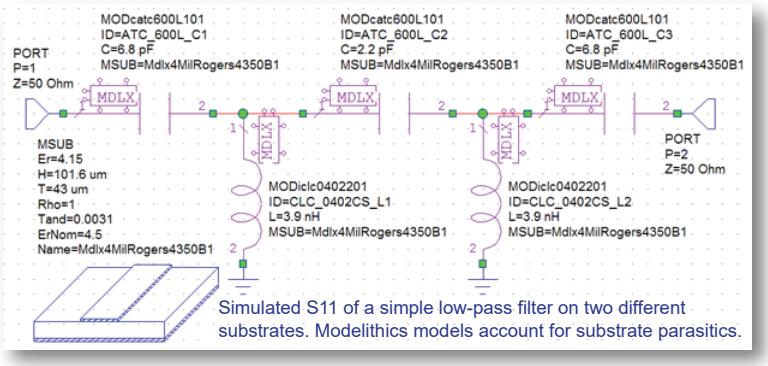
The Modelithics COMPLETE Library for Cadence AWR Design Environment offers an extensive selection of **Microwave Global Models™**, representing thousands of components. The installed models are fully integrated with Cadence AWR electronic design automation (EDA) software. The Modelithics COMPLETE Library 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.

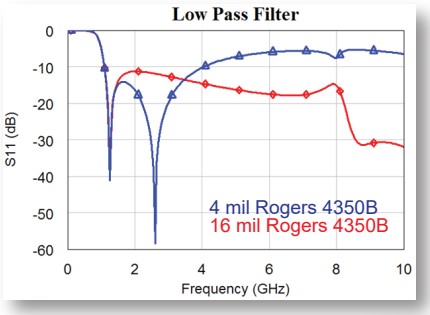


Sub-Libraries of the Modelithics COMPLETE Library

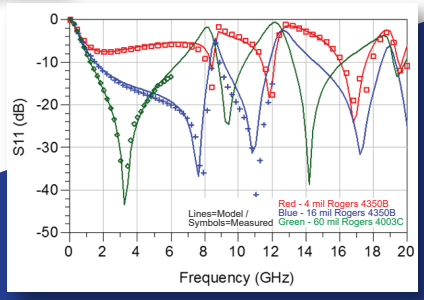
- **Modelithics CLR Library** — Contains all passive components from the Modelithics COMPLETE Library. It includes simulation models for various component body-sizes and part values for capacitor, inductor, and resistor families (RLC) from many popular vendors.
- **mmWave Library** — A collection of models focused on supporting the next generation of cellular communication standards. All models in the mmWave Library are validated to a minimum of 30 GHz, with some validated up to 150 GHz!
- **System Components Library** — Models for discrete die, surface mount and packaged devices.
- **Single-Vendor Sub-Library** — Includes all models for one selected vendor. Choose from the 80 vendors within the Modelithics COMPLETE Library.



Simulated S11 of a simple low-pass filter on two different substrates. Modelithics models account for substrate parasitics.



(Below) Model vs. measured S11 of a 3.3pF 0805 capacitor on three different substrates.



- Highly accurate and versatile Modelithics models reduce design time and costs, increasing productivity.
- Modelithics models are measurement-based equivalent circuit models, and will exhibit physical behavior, even beyond the measurement frequency.
- Concept to product faster and easier.

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List of Components in the Modelithics COMPLETE Library for Cadence AWR Design Environment

Modelithics Vendor Partners (MVPs)

Aeroflex

DIODES
MSSP25250-70, MMP7065-11, MLP7100, -7110, - 7120, -7101, MSD710

Amotech

CAPACITORS
A60Z, A60L, A60S, A60F, A80B, ABCUC06S0xx103, ABCUC06S0xx473, ABCUC06S0xx104, ABCUC16S01x103, ABCUC16S01x104, ABCUA50S02x104, ABCUC 101 0XX 104, ABCUC 101 0XX 473, ABCUC1010XX223MNDG, ABCUC 161 0XX 103, ABCUC 16S 01X 104, ABCUC16S01X223MNDG, ABCUC 16S 01X 224, ABCUC 252 01X 103, ABCUC 10S 01X 224

Analog Devices

AMPLIFIER
ADL8142

API Inmet

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

ATTENUATORS
PCA, PCAA, PCAAF, PCAF, TCAF

Avago

AMPLIFIER
MGA86576

NPNBJT PACKAGES
AT-41511, AT-41533, AT-64023

CapV

VARACTOR CHIPS
5x5 um VCT Etch, 10x10 um VCT Etch

Vishay Barry

ATTENUATORS
AK0405CB, AT0904CB

RESISTORS
RE0805CT, RE1005CT, REC1206CT, RK0603ZZ, RY0805CT, RY1005CT, RYC1206CT, RZC1206CT(1-port), RZC1206CT(2-port)

PACKAGE
QFN5532-050x

CEL

LOW NOISE FET
CE3512K2, CE3514M4, CE3520K3

Chilisin

INDUCTORS
CLH1608, CLH2012, CL2012

FERRITE BEADS
GBY160808T, PBY160808T, SBY160808T

CML Micro

MES
MWT-1F, MWT-3F, MWT-7F, MWT-9F, MWT-11F

Coilcraft

INDUCTORS
016008C, 0201CT, 0201DS, 0201HL, 0201HT, 0302CS, 0402AF, 0402CS, 0402CT, 0402DC, 0402DF, 0402HP, 0403HQ, 0603CS, 0603CT, 0603DC, 0603HC, 0603HL, 0603HP, 0603LS, 0604HQ, 0805CS, 0805HP, 0805HQ, 0805HT, 0805LS, 0806SQ, 0807SQ, 0906, 0908SQ, 1008CS, 1008CT, 1008HQ, 1008HS, 1010VS, 111SQ, 1206CS, 1212VS, 132-xxSM, 132_xxSM, 1508, 1512SP, 1515SQ, 1606, 1812CS, 1812SMS, 2222SQ, 2508, 2712SP, 2929SQ, 4310LC, AxxT, BCL, BCR, BxxT, GA309X, XLG6020

Cornell Dubilier

CAPACITORS
MIN02

Cree

PACKAGED PHEMT
CGH35030F

Dalicap

CAPACITORS
DLC85B, DLP70A, DLP75P, DLP75D, DLP70B

Darfon

CAPACITORS
C0402NP0, C0603NP0

Excelics

MESFET
EFA060BS5

PHEMT
EPA1200A, EPA240BV

Exxelia

CAPACITORS
CLE, CLX, SHF251

Freescale

MOSFET
MRF1517, MRF1518, MRF281, MRF9030

Gigalane

CONNECTOR
PSF-S00-000

Gowanda

INDUCTORS
C050FL, C050SMC, C100FL, C100SM, C100SMC, C225FL, CC0603

Guerrilla RF

AMPLIFIERS
GRF2070DS, GRF2071DS, GRF2072DS, GRF2073DS, GRF2093, GRF2100, GRF2106, GRF2501DSR, GRF4002, GRF4014

TRANSISTORS
GRF0005, GRF0010, GRF0012, GRF0020, GRF0030, GRF0065, GRF0090, GRF0135

Hexawave

MESFET
HWC27NC

IEH

CONNECTORS
HGM010MDE2X71A200, HGM010SDE2X71A200, HKC110BCAD420, HKC110DCAD020, HMK200FDA3A98E5C2, HMK200MDA3A97E5C2, HMM122FDE2A71E400, HMM122RDE3A97E400, HRM060FDE2X71A000, HRM060RDE2H97D000, HVM030FDE2A71E0020, HVM030MDE2A71E0020

IMS

RESISTORS
ND3-0510EVW, ND3-0510SWA, NDX-1020EZW, RC3-0402PW, PC4-0302PW, NDX-0402WA, ND3-0402PA, NDX-0505WA, TFI-0201SS, TFI-0402WA

ATTENUATORS
A-0402WA-C, A-0603-C, IA3-0805WA, IA3-1206WA, IMS2533, IMS2652, VDR3725SG

Infineon

DIODES
BAR64-03W, BAR88-02V, BAS40, BAS40-04, BAS40-05, BAS40-06, BAS70, BAS70-04, BAS70-05, BB535, BB639, BB833, BBY51-02W, BBY52-02L, BAT62-02V

NPNBJT
BFP420, BFR949F, BFY420, BFY420

MOSFET
BF999, PTF080101S, PTFA043002E

Johanson

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

INDUCTORS
L-05Czzz, L-07Cxxx, L-07Wxxx, L-14C, L-14W

JDI

CAPACITORS
R14, R15

KEMET

CAPACITORS
C0201, C0402(C0G), C0402(X5R), C0402(X7R), C0603, C0805(BX), C0805(C0G), C0805(NP0), C0805(X5R), C0805(X7R), CBR01, CB02, CBR04, CBR04 Auto, CBR05, CBR06, CBR06 Auto, CBR08

Knowles

CAPACITORS
(Syfer)
HighQUltraLowESR, H Range (0805), 22252, 40402, 4040J

CAPACITORS
(Dielectric Labs)
C04BL, C04UL, C06BL, C06CF, C06UL, C08BL, C11UL, Milli-cap, Opti-cap

INDUCTORS
CL1008

KOA

RESISTORS
RK73B1(RK73H), RK73B2A, RK73B2B, RK73x1E(RK73H), RK73x1H(RK73B), RK73x1J, RK73x2E, RK73x3A, RK73H, WK73S3A

CAPACITOR
HFC1005

Kyocera-AVX

RESISTORS
CS12010T0050GTR, CS12010T0100GTR, CS13737, CT11020T0050, CW12010T0050GTR, CW12010T0100GTR, CW137250T0050GTR, CW137250T0100GTR, CZ12010T0050GTR, CZ13725T0050GTR, CZ13737T0050GTR, UBR0402

CAPACITORS
02013A, 0201YC, 0201YD, 0805xU, 100A, 100B, 200A, 200B, 520L, 530L, 550W103, 550W104, 550Z, 550Z104, 550Z224, 560W104, 560Z104, 560Z224, 600F, 600L, 600S, 700A, 700B, 800A, 800B, 800R, Accu-P, CU01, CU10, DLA09024, DLA09025, KGM06xR7, KGM2xCG, KGM15xCG, KGM15xR7, KGM21xCG, KGM21xR7, KGM31xR7, KGQ05xCG, KGQ32xCG, ML03, MP01, MP02, MP03, U Series-0603

ATTENUATOR
FA10975PXXDB

RESISTORS
CS12010T0050GTR, CS12010T0100GTR, CS13737, CT11020T0050, CW12010T0050GTR, CW12010T0100GTR, CW137250T0050GTR, CW137250T0100GTR, CZ12010T0050GTR, CZ13725T0050GTR, CZ13737T0050GTR, UBR0402

COUPLERS
CP0402AxxxxAN, CP0402AxxxxBN, CP0402AxxxxCN, CP0402AxxxxDN, CP0402AxxxxEN, CP0402AxxxxFN, CP0402W2700FN, CP0603, DB0603N2140AN, DB0603N2400AN, DB0603N3000AN, DB0603N3500AN, PC2025A2100, PC2025A2700

MACOM

DIODES
MA4PH235-1072, MA4P504-132, MAVR-000230-1141, MA4E1317, MAVR-001330-1279, MLP7100, MLP7101, MLP7110, MLP7120, MMP7065-11, MSD710, SMV20413

LIMITER
2690-1011

COUPLER
MACP-011088

SPLITTER
MAPD-011062

TRANSFORMER
MABA-011125

MDT

DIODE
MP6250-P2715

Microchip

DIODE
UPP9401

NPNBJT
SD1495-03

Mimix

MESFET
CF003-01

Mitsubishi

HEMT
MGF4953A, MGF4953B

MOSFET
RD01MUS1, RD07MUS2B, RD07MVS1, RD12MVS1, MRF1513, MRF1570

Mini-Circuits

AMPLIFIERS
AVA-183+, PGA-103+, PMA2-133LN+, PMA2-33LN+, PMA2-43LN+, PMA3-83LN+, PMA-545+, PMA-5451+, PMA-5452+, PMA-5453+, PMA-5454+, PMA-5455+, PMA-5456+, GVA-62+, GVA-63+, GVA-84+, PGA-102+, PGA-103+, PGA-105+, PHA-1+, PSA4-5043+

BAND PASS FILTERS
XBF-Series

TRANSFORMERS
NCS1-422+, NCS1-63+, NCS2-392+, NCS2-83+

ATTENUATORS
RCAT, YAT, KAT, YATA

LOW PASS FILTERS
LFCG-1000+, LFCG-1575+, LFCG-1700+, LFCG-2250+, LFCG-2850+, LFCG-320+, LFCG-400+, LFCG-530+, LFCG-1575+, LFCG-2850+, LFCG-320+, LFCG-530+, LFCN-1000+, LFCN-120+, LFCN-1200+, LFCN-1200D+, LFCN-1700+, LFCN-1800+, LFCN-1800D+, LFCN-2250+, LFCN-3000+, LFCN-3800+, LFCN-400+, LFCN-4400+, LFCN-490+, LFCN-630+, LFCN-80+

HIGH PASS FILTERS
HFCN-2700+, HFCN-3800+,HFCN-5500+, HFCN-740+, HFCN-880+, XHF-Series, XHF2-Series

HEMT
SAV-331+, SAV-541+, SAV-551+, SAV-581+, TAV2-14LN+, TAV2-501+

SPLITTERS
EP2C+, EP2K1+, EP2K+, EP2W1+, EP2W+, EPQ133+

pHEMT
TAV2-501+

Motorola

MOSFET
MRF1513, MRF1570

Murata

INDUCTORS
LQG15HS, LQG18, LQP02HQ, LQP02HV, LQP02T, LQP02TQ, LQP03HQ, LQP03TG, LQP03TN, LQP15M, LQP18M, LQW04A, LQW15AN_00, LQW18AN_00, LQW15AN-10D, LQW18AN-80D, LQW18AN-10D

FERRITE BEADS
BLM15AG, BLM15EG, BLM18A, BLM18HG102SN1, BLM21P, BLM31P, BLM21P, BLM31P, BLM41P

TRIPLEXER
LMTP33AA148

RESONATORS
DRM020KER93, DRR02011G45, DRR0201G350, DRR204G100, DRR030KE1R2

BAND-PASS FILTER
SFELA10M7GAA0_B0

CAPACITORS
GCM1555C, GCM21B, GCM219, GCM31C, GCM31M, GJM022, GJM03, GJM15, GQM033, GQM1555C, GQM187, GQM188, GQM219, GQM22M, GRJ32DC7, GRM011, GRM022, GRM022 (X5R, X7R), GRM0335, GRM1555C1H, GRM155R71E, GRM155R71H, GRM1885C1H, GRM188R71H, GRM188R72A, GRM2165C2A, GRM219, GRM31B, GRM31C, GRM31M, GRM32D, GRM32E, GRM32Q, GRM32EC7, GRM32ER71J, GRP033, UBSC_935_151_423_510, UBSC_935_151_424_610, UBSC_935_151_723_510, XBSC_939_118_492_510-xxS

NIC Components

RESISTORS
NRC06

NXP

JFET
BF861B, BF862

NPNBJT
BFQ540, BFS505, BFS520, BFS540, PBR941

MOSFET
BLF542, BLF548

ON Semiconductor

DIODES
MBD330DWT1, MMBD301LT1

JFET
MMBFU310LT1

NPNBJT
MMBT3904LT1

Panasonic

INDUCTORS
ELJRE, ELJRF, ELJRG, ERJ2GE0R00X

RESISTORS
ERJ1GN

Piconics

INDUCTOR
CCxxxTxxK240G5-C, CC10T40K240G5-C, CC25TxxK240G5-004, CC36T44K240G5-C, MK Series

Passive Plus

CAPACITORS
01005BB104, 0201N, 0201BB104, 0201N-ultra-low-ESR, 0402N-ultra-low-ESR, 0505C, 0603N-ultra-low-ESR, 0708N, 0805N-ultra-low-ESR, 1111C, 1111N-ultra-low-ESR

RESISTORS
R35-1209BB, R35-201BB

INDUCTORS
PPI-xxFL-xRxx-xxx-G6

Presidio

CAPACITORS
0402UP, 0505UP, 603UP, BB0201X7R103M, BB0402X7R104M2, BB0502X7R104M, BB0502X7R104M

Qorvo

AMPLIFIERS
AH101, RF5110G

HEMT
TGF2040

GaAs pHEMT
QPD2018D, QPD2025D, QPD2040D, QPD2060D, QPD2080D, QPD2120D, QPD2160D

RJR

PACKAGE
QFN01

Rohm

PNPBJT
EMT1, EMX1, UMT1NR

DIODES
RB715F

Samsung

CAPACITORS
CL02CxxxxxxA, CL02CxxxxxxG, CL03C, RC0402

RESISTORS
RC1005

Smiths Interconnect

RESISTORS
CT0404ALN1WB1, CT0404ALN2WB1, CT0603ALN1SMTF

ATTENUATORS
AT5xxF, AT7xxF, CA0505D, K2TVA, TS06xxF, TSXWB2, WTVA

SPLITTERS
RPD02-50EAF, RPD04-50EHF, WPD02-1525EBF, WPD02-1525UDF, WPD02-2535ECF, WPD03-1525EEF, WPD04-1525EFF, WPD04-2535EGF

SEDI

GaN HEMT
EGN010MK, EGN030MK

MESFET
FLL120MK, FLL800IQ, FSX017X

Semicoa

NPNBJT
2C2857

Silicon Supplies

BJT
2SC3356, 2SC3356

Sirenza

MOSFET
SLD-1083CZ, SLD-2083CZ

Skyworks

DIODES
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

SOTA

RESISTORS
S0202AF50R0FEB, S0303AF50R0FWB, S0505AF50R0FEB, S0505CF50R0FHB, S0505DF50R0FEW, S0505EF50R0FEW, S0603CF50R0FHB

Southwest Microwave

INTERCONNECTS
1092-01A-5, 1093-04A-5

Spectrum Control

RESISTORS
PPC 100-200AW, NPC 20-40S, NPC50-100W, ANC 50-100W, NPC50-50W, ANC 50-50W, CA00WBR01, CA00WCB01, CD00WAL01, CJ00SAA01, CJ00WBR01, CJ00WCB01

ATTENUATORS
40PCA3060, PCAAF, PCAF, PCA, PCAA

Susumu

ATTENUATOR
ATS-1005-FD, ATS2012-FD

RESISTOR
RFD0603, RG0603, RG1005, RG1608, RG2012, RG3216

ST Micro

CAPACITOR
PTIC

Tagore Tech

HMT
TA9210-D

Taiyo Yuden

CAPACITORS
EMK042, EMK063, JMK063, LMK042_and_JMK042, TMK063, TVS042, UMK105

INDUCTORS
HK0603, HK1005, HK1608, HK2125, HK0603S, HKQ0603U, HKQ0603W

TDK

CAPACITORS
C0402C0G, C0603C0G, C1005CH, C1005X5R, C3225, CGA1A2C0G, CGA1A2X7R, CGB1T3X5R0J104M

INDUCTORS
MHQ0402PSA, MHQ1005P, MLF2012, MLG0402Q, MLG0603P, MLG0603S, MLG1005S, MLG1608B, MLG1608B, MLK1005S, NLV25T

Tecdia

VARACTOR CAPACITORS
HBCR22AY20X10X5A02, HBC2R2KY20X10X5A02

SINGLE LAYER CAPACITORS
CMSK1600, CMSK280, CMSK2800, CMSK40, CMSK90,

Toko

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

TRANSFORMER
617DB-1007

Toshiba

DIODES
1SV229, 1SV279, 1SV280, 1SV282, 1SV305, 1SV325, 1SV329, JDV2S07FS, JDV2S41FS

MOSFET
2SK3078A, 2SK3476, RFM03U3CT, RFM04U6P

Transcom

pHEMT
TC2381, TC2384

TTM Tech

RESISTORS
C05N50Z4

UBE

RESONATORS
AO-K016-08, K020-03

Vanguard

TRANSFORMERS
100205, KSeries, MSeries, RSeries, SSeries

INDUCTORS
Series26000, Series26200, Series27000, Series30000, Series33000, Series34000, Series50000

Virginia Diodes

DIODES
WBandSingleAnode, WBandZBD

Vishay

RESISTORS
CHTA02016, CRCW01005, CRCW0201, CRCW0402, CRCW1206, D10, D11, MCS0402, MCT0603, MMA0204, CH02016, CH0402, MCT0603, FCHP0402xxxBGT, FCHP0402xxxBTT, MCS0402, TNPW0201,

CAPACITORS
HPC0402AVJ0402, VJ0402D, VJ0603D

Voltronics

CAPACITOR
JR030

Würth Elektronik

FERRITE BEADS
74279223560, WE-CBA0402HighCurrent, WE-CBA0402WideBand, WE-CBA0603HighCurrent, WE-CBA0603HighSpeed, WE-CBA0603WideBand, WECBA0805HighCurrent, WECBA0805HighSpeed, WECBA1206HighCurrent, WECBA1206WideBand, WECBA1806HighCurrent

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

INDUCTORS
WE-ACHC, WE-CAIR, WE-KI, WE-KIHC, WE-MK, WE-TCI, WE-MK (0402), WE-MK (0603), WE-KI HC (0402), WE-KI HC (0603)

Yageo

RESISTOR
RC0100, RC0201

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

SV Microwave

CONNECTORS
2985-6004

Learn More About Modelithics' Library & Licensing Options

Email sales@Modelithics.com or visit www.Modelithics.com to request a FREE trial!

More to come! New models are added continually. Be sure to check out the models on the Modelithics Pre-Release List: www.Modelithics.com/Model/PreRelease

Video: Modelithics COMPLETE Library Overview

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**!

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