BSIMProPlus

PRIMARIUS

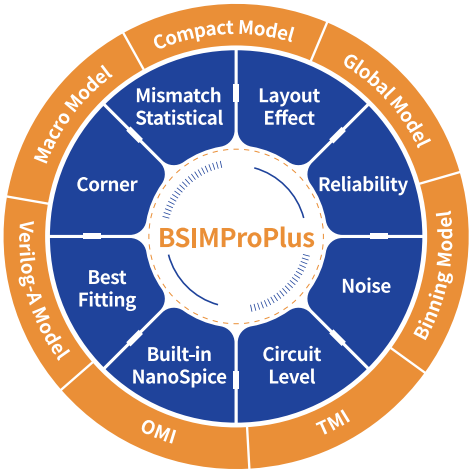
Advanced SPICE Modeling Platform

Introduction

BSIMProPlus is industry's leading SPICE modeling platform for advanced semiconductor devices. As the technology and market leader for SPICE modeling, it has been adopted as the standard modeling tool in leading semiconductor companies worldwide for over a decade.

BSIMProPlus provides the most powerful SPICE modeling functions with its built-in parallel SPICE engine. BSIMProPlus offers full SPICE modeling capabilities from baseband to high frequency for various semiconductor devices for characterization, auto model extraction and parameter optimization in various technology nodes including 28nm, 14nm, 10nm, 7nm, 5nm and 3nm.

BSIMProPlus supports public domain SPICE models and popular proprietary models, and represents accurate and efficient SPICE modeling solution for process development and integrated circuit design.



Key Advantages

- Industry-Golden Platform
  Technology & market leader for SPICE modeling
- Wide Adoption
  Adopted by leading semiconductor companies worldwide
- One-Stop Solution
  Meeting various baseband modeling requirements including electrical, physical, layout, etc.
- Full Coverage
  Covering various device types including compact models, user-defined models, etc.
- GAA
  Applied in various processes including Planar, FinFET, GAA, etc.
- 3nm
  Applied in advanced process down to 7nm/5nm/3nm
- IGBT
  Supports power device modeling
- PRI
  Supports reliability modeling such as PRI, Agemos, OMI, URI, MosRA, etc.
- RTN
  Supports RTN modeling

Specifications

Supports device types
- MOSFET, SOI, FinFET, BJT/HBT, TFT, MESFET, HEMT, Diode, Resistor, Inductor, etc

Supports models
- BSIM3, BSIM4, BSIM6, BSIM-CMG, BSIM-IMG, BSIMSOI, UTSOI, HiSIM2, HiSIM_HV, PSP, GP-BJT, RPI TFT, etc
- Continuously updated with the latest compact model versions such as BSIM4.8.1, BSIM-BULK 107.1, BSIM-CMG 111.21, BSIM IMG 103.0

Supports latest model interface
- TMI, OMI and PMI

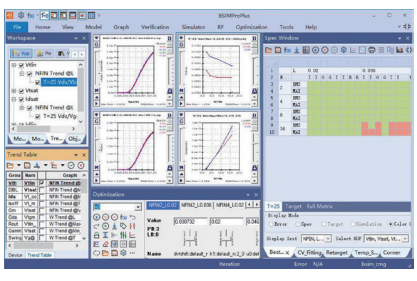
Supports device characteristics
- HSPICE/Spectre/Eldo compatible
- Supports Device or circuit-level target modeling
- Supports user-defined model and Verilog-A model
- DC, AC, Tran, Noise, RF, Statistical, LDE, Reliability, etc
- Supports model auto extraction and parameter optimization
- Supports MPI and other mainstream probe stations for wafer-level semi-auto measurement
- Supports mainstream instruments for DC/AC/RF/Reliability characterization

Applications

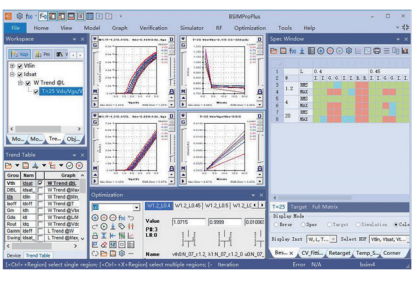
- SPICE modeling and model library development
- New device SPICE model development
- Semiconductor device data testing
- Reliability model development & validation

Application Examples

FinFET Device Model Extraction



Planar Device Model Extraction



MOS Aging Model Extraction