What's New – OrCAD 16.6 Quarterly Incremental Release #5

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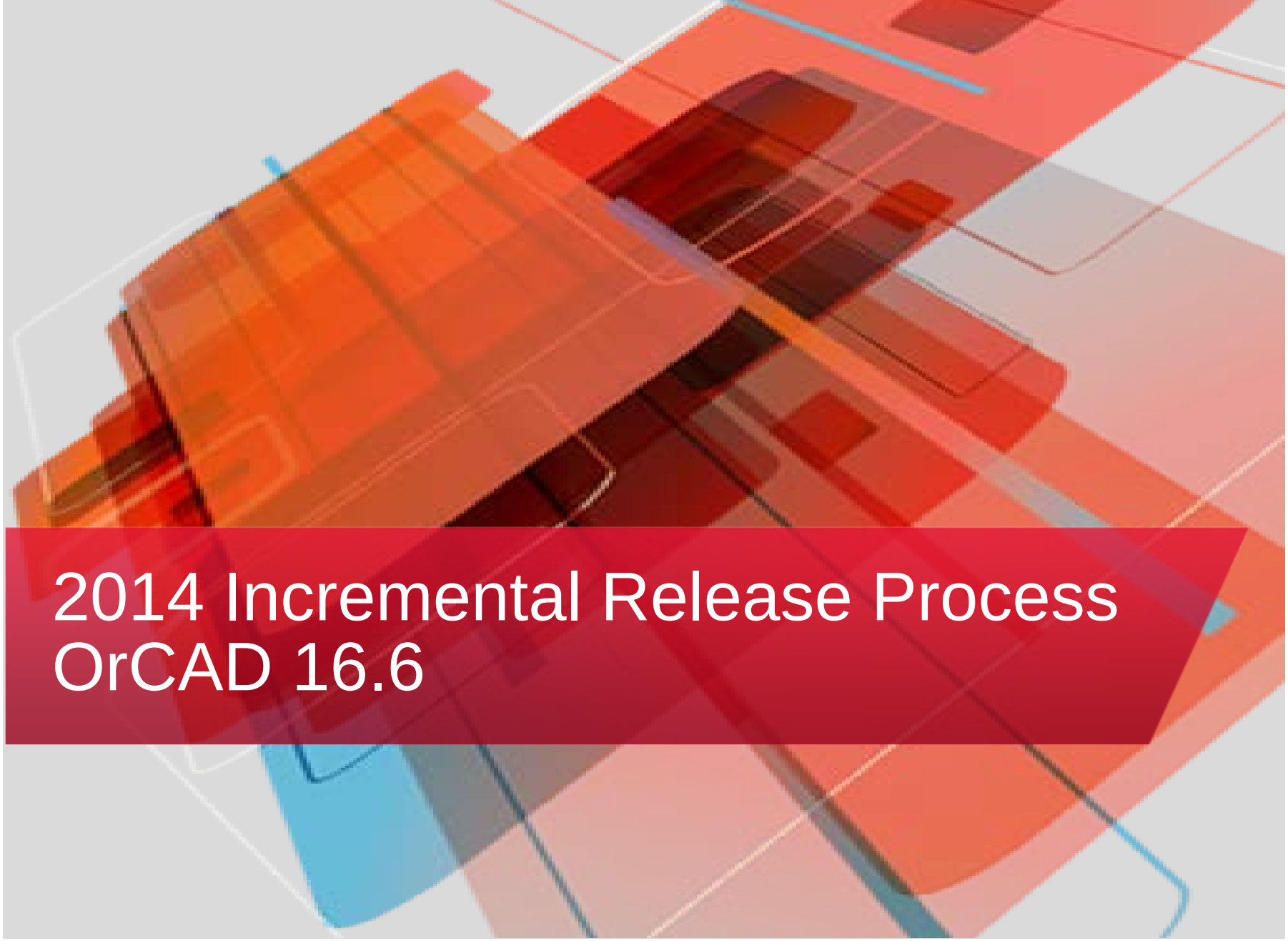
Additional Material and Information

- What's New documents with additional feature / enhancement details
  - Capture product notes 'capPN.pdf' (%CDSROOT%/doc/capPN)
  - PSpice product notes 'pspPN.pdf' (%CDSROOT%/doc/pspPN)

- Sample / demo circuits are available for new Modeling apps



2014 Incremental Release Process OrCAD 16.6

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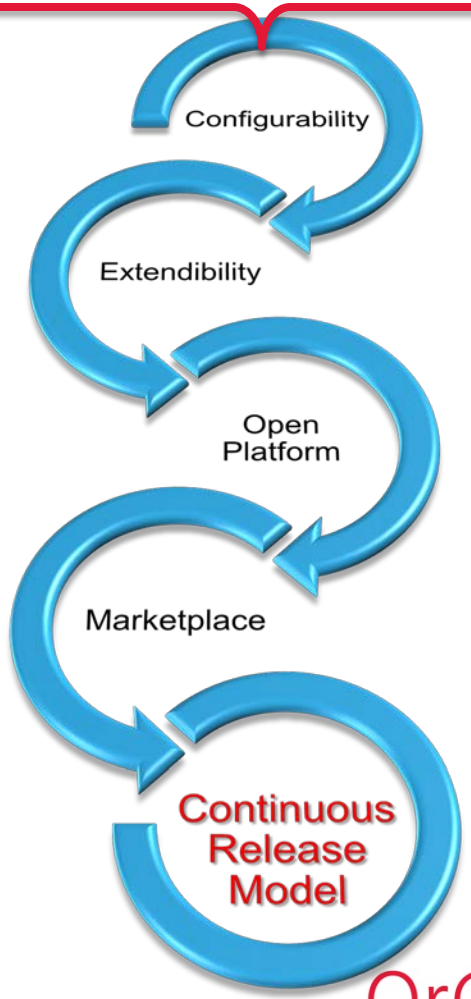
OrCAD Release Process

- Moving from periodic releases model to continuous technology upgrade
- Quarterly Incremental Releases (QiR)
  - Cumulative updates based on existing hotfix process / methodology
- OrCAD Marketplace apps



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OrCAD 16.6 Quarterly Incremental Releases

- Quarterly Incremental Releases 2012-2013
  - QiR#1 (a.k.a. 16.61) Hotfix s001 / released December 2012
  - QiR#2 (a.k.a. 16.62) Hotfix s006 / released April 2013
  - QiR#3 (a.k.a. 16.63) Hotfix s013 / released July 2013
  - QiR#4 (a.k.a. 16.64) Hotfix s016 / released September 2013
- Quarterly Incremental Releases 2014
  - QiR#5 (a.k.a. 16.65) Hotfix-s022 / released January 2014
- Future Quarterly Incremental Releases being planned

Roadmap data is provided for informational purposes only and does not represent a commitment to deliver any of the features or functionality discussed

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OrCAD 16.6 Update Release #5

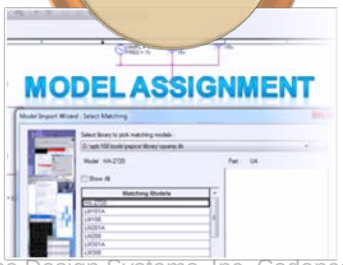
- Capture-PSpice usability
- PSpice modeling updates / improvements
- OrCAD PCB Editor enhancements
- Enhancements and Bug Fixes

Quick Place

- Intuitive
- Contextual

- "Intelligent"
- Open Source

Model Assign



Model Search

- Rich Content
- Accessible

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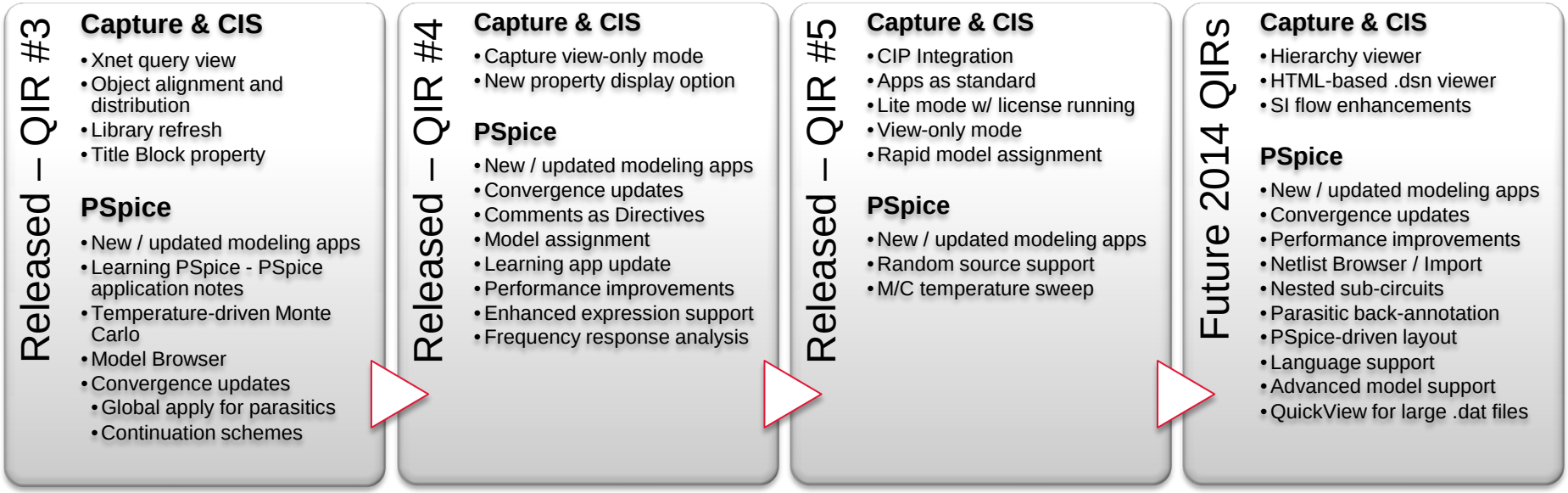
Future Considerations for 16.6 Update Releases

- Product usability improvements / Tcl updates
- PSpice simulation / model support enhancements
- Additional apps / app updates



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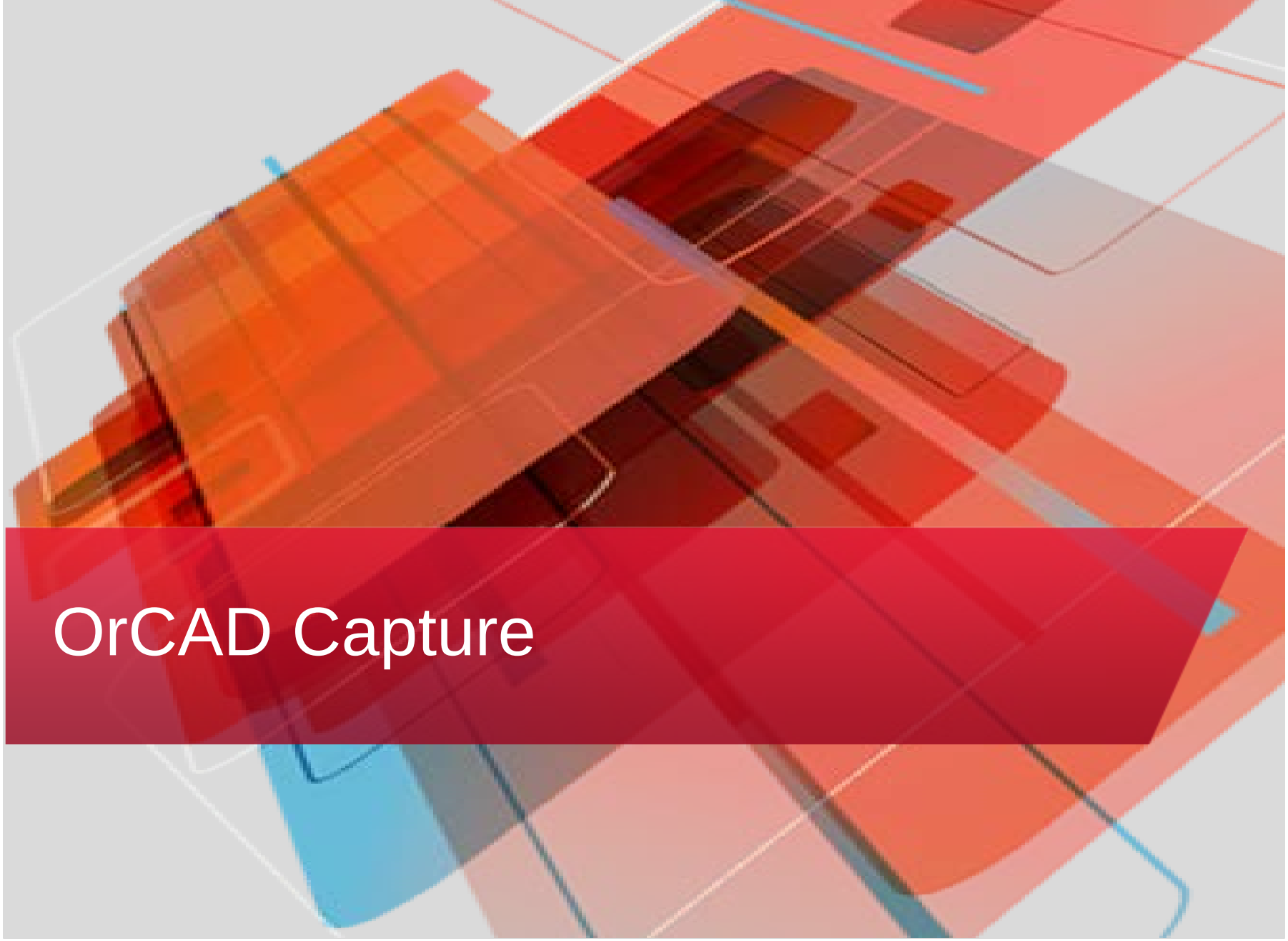

OrCAD Capture

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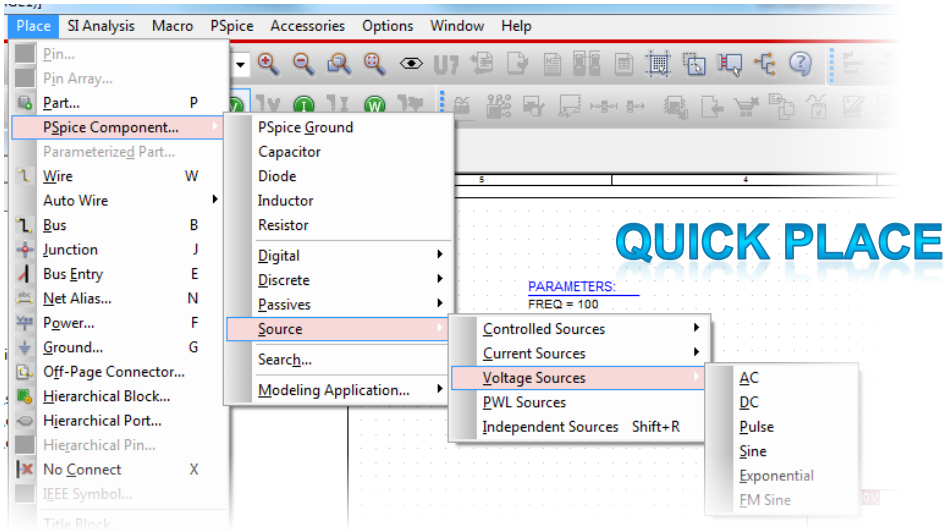
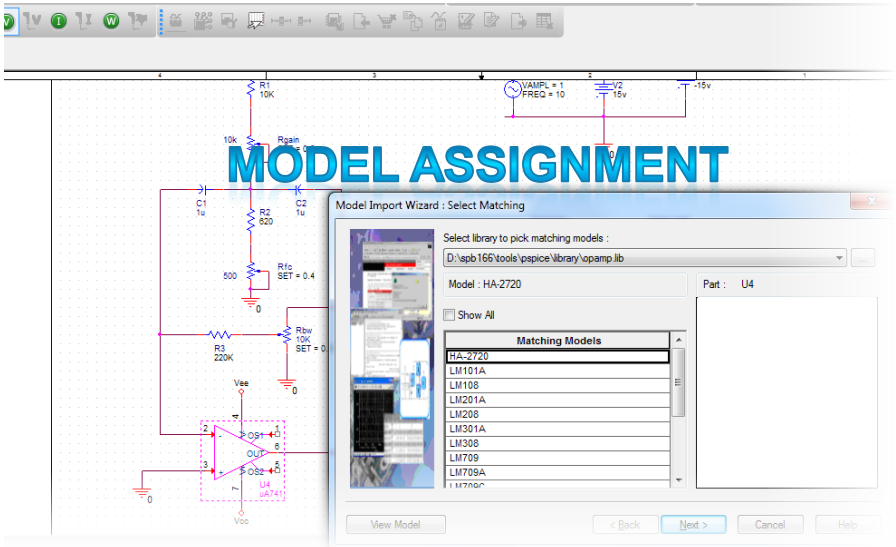
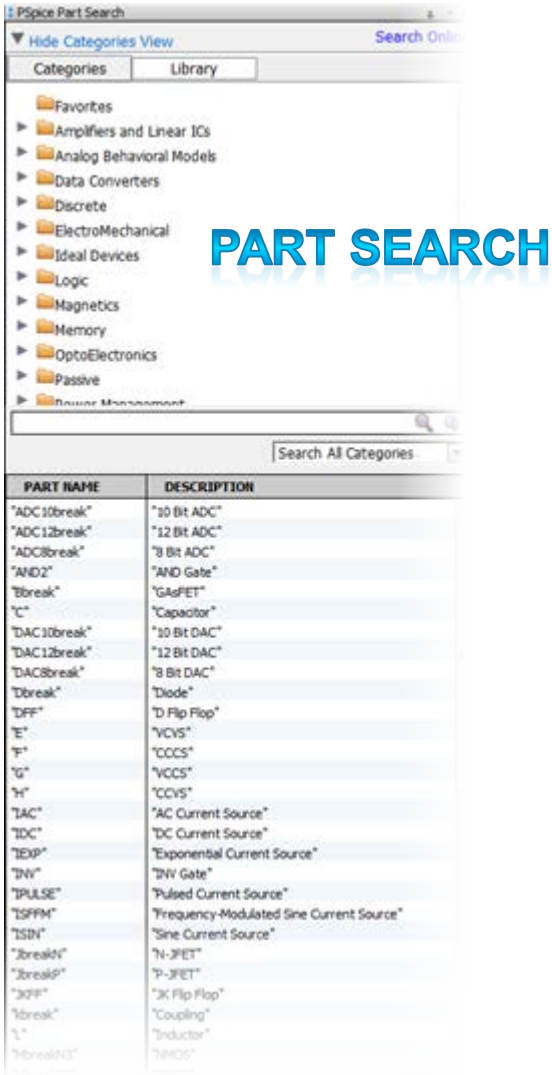
Ease of Use Improvements through QiRs







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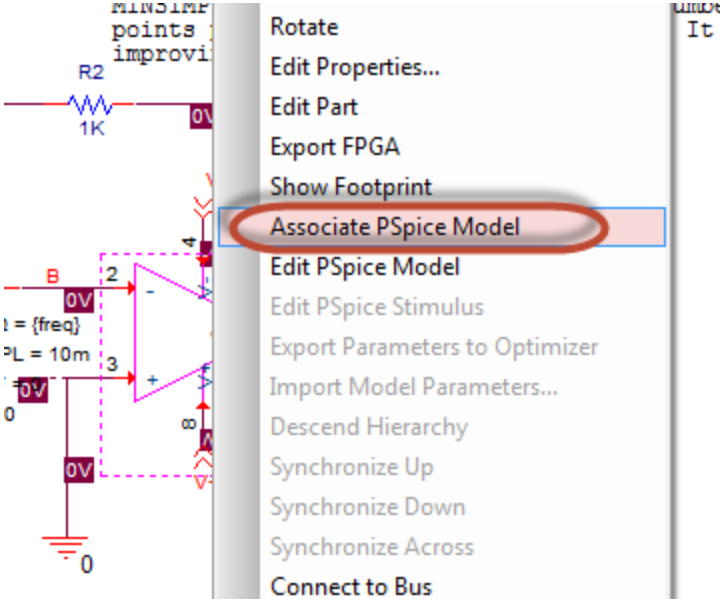
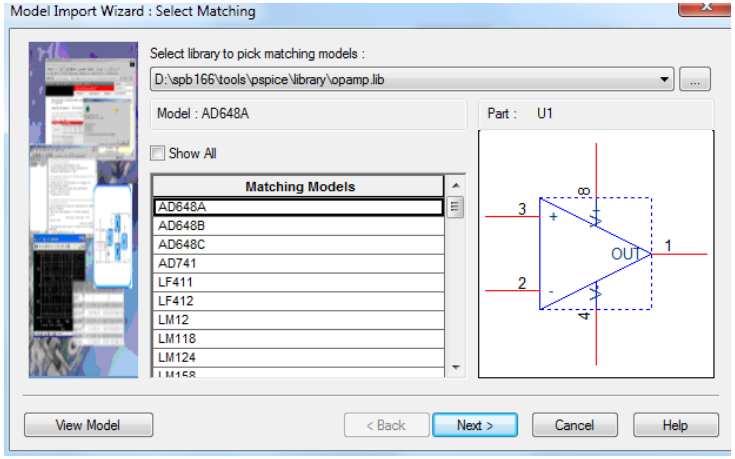
Schematic-level, Rapid PSpice Model Association

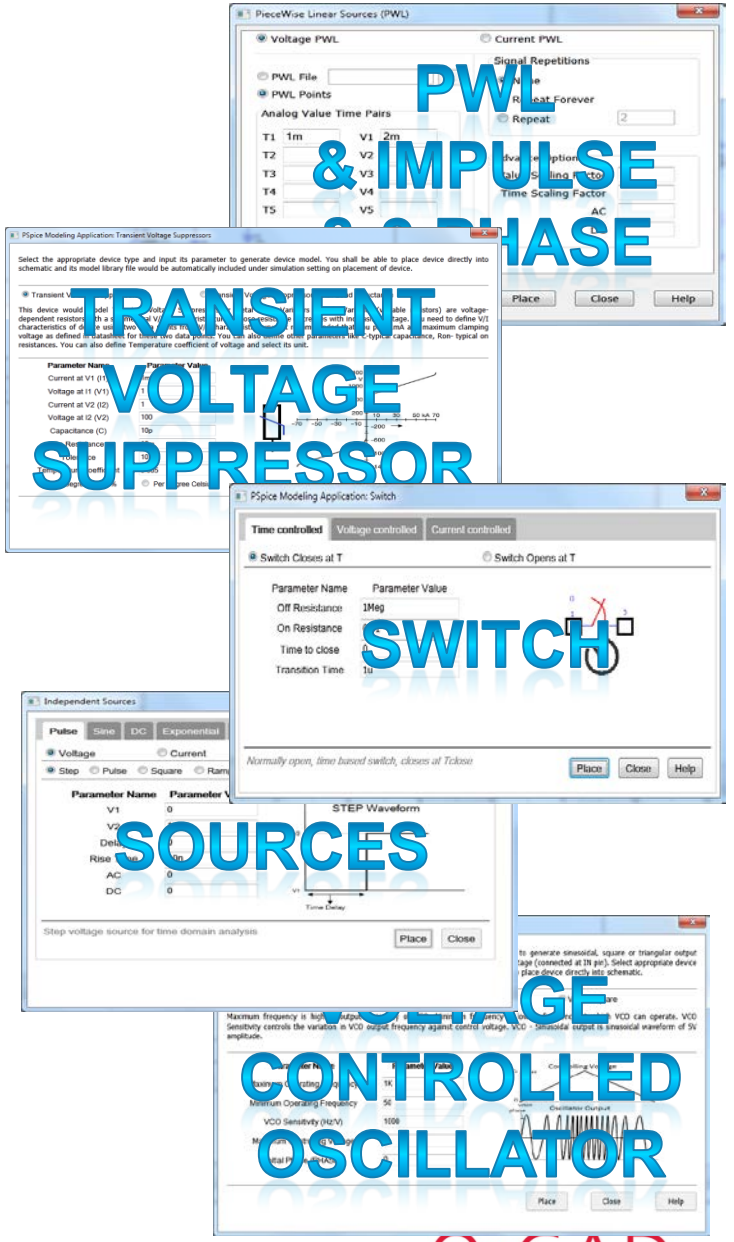
- PSpice model assignment on component instance
  - Removes need to update libraries
  - Assigns PSPICE_TEMPLATE as instance level property
- “Associate PSpice Model” available on right mouse button (RMB) with component selected
- Associate PSpice Model Import Wizard provides step-by-step guidance





New PSpice Modeling Apps

- Modeling applications for;
  - Switches
  - Transient Voltage Suppressors (TVS)
  - Voltage Controlled Oscillators (VCO)
  - Independent Sources
  - PieceWise Linear (PWL) Sources
- Modeling applications provides a rapid, extremely easy to use, and fully integrated method to create various types of modeling devices during design entry as needed for simulation
- Sample / demo circuits are available for new Modeling apps



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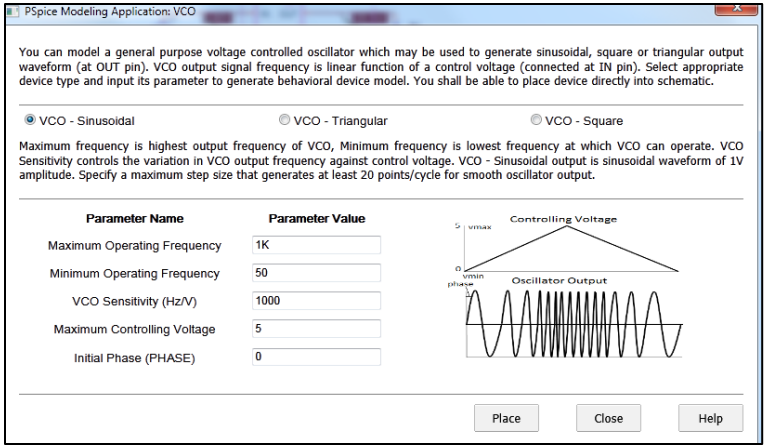
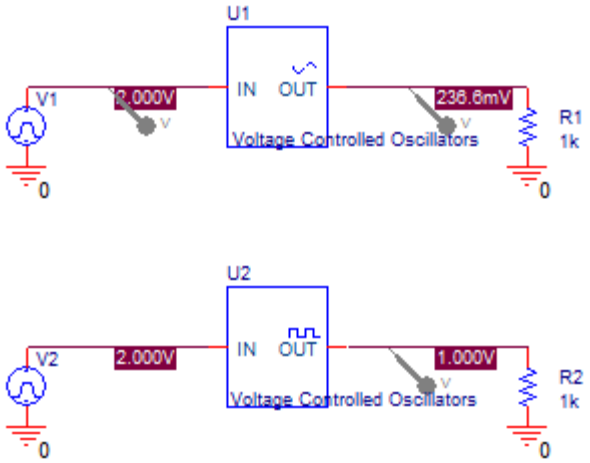
Voltage Controlled Oscillator (VCO)

- VCO application supports three output waveforms
  - Sinusoidal
  - Triangular
  - Square
- For more information about application of VCO
  - http://en.wikipedia.org/wiki/Voltage-controlled_oscillator#Types_of_VCO





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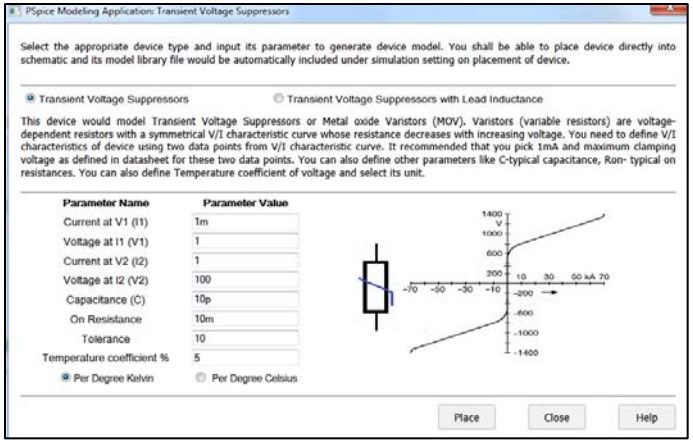
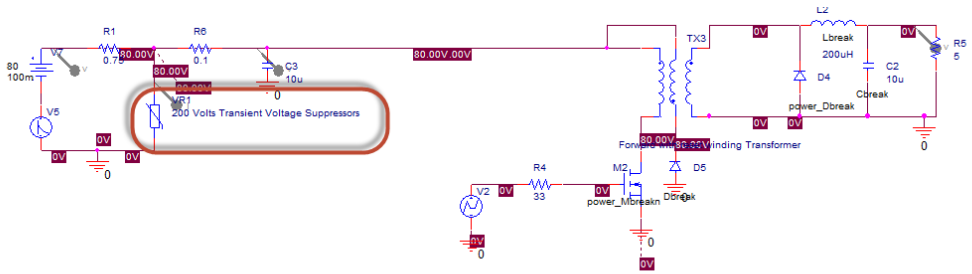
Transient Voltage Suppressor (TVS)

- Create models for Transient Voltage Suppressors or Metal Oxide Varistors (MOV)
- For more information about TVS and its applications
  - http://en.wikipedia.org/wiki/Transient_voltage_suppressor



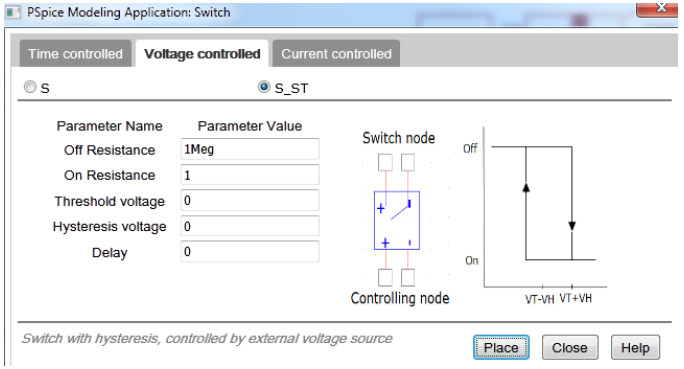


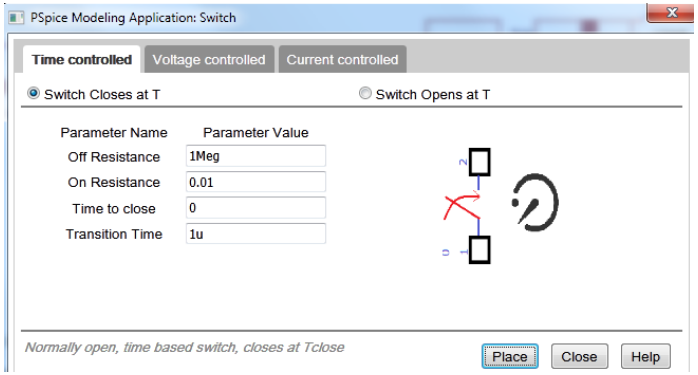
Characteristics (T_A = 25 °C)

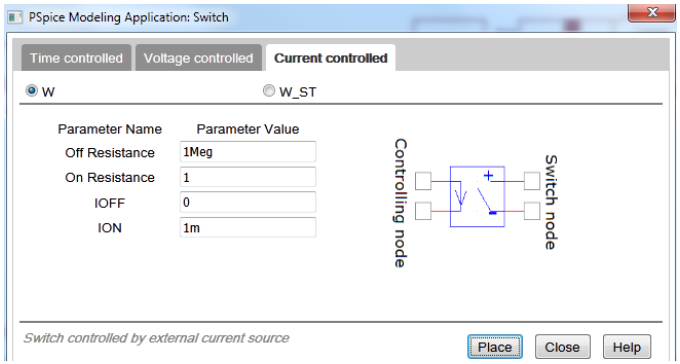
Type (untaped) SIOV-	V_v (1 mA) V	ΔV_v (1 mA) %	Max. clamping voltage v V	Max. clamping voltage i A	C_{typ} (1 kHz) pF	Derating curve Page	*V/I* characteristic Page
S05K75	120	± 10	200	5,0	210	247	278

Switches

- Create models for six different types of switches
  - **Time Controlled**…normally open, time based switch; closes at Tclose
  - **Time Controlled**…normally closed, time based switch; opens at Topen
  - **Voltage Controlled**…switch controlled by external voltage source
  - **Voltage Controlled**…switch with hysteresis, controlled by external voltage source
  - **Current Controlled**…switch controlled by external current source
  - **Current Controlled**…switch with hysteresis, controlled by external current source







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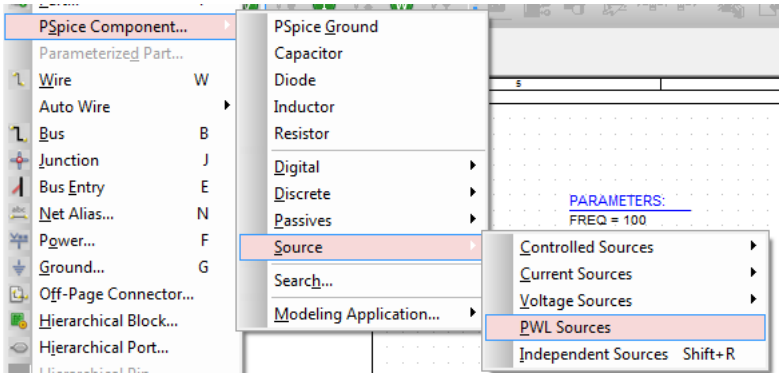
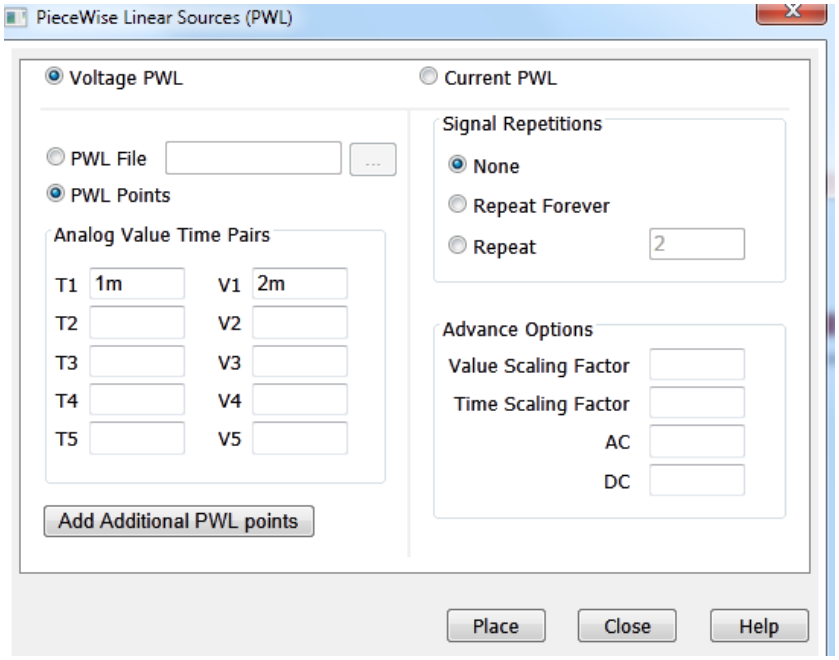
PWL Source

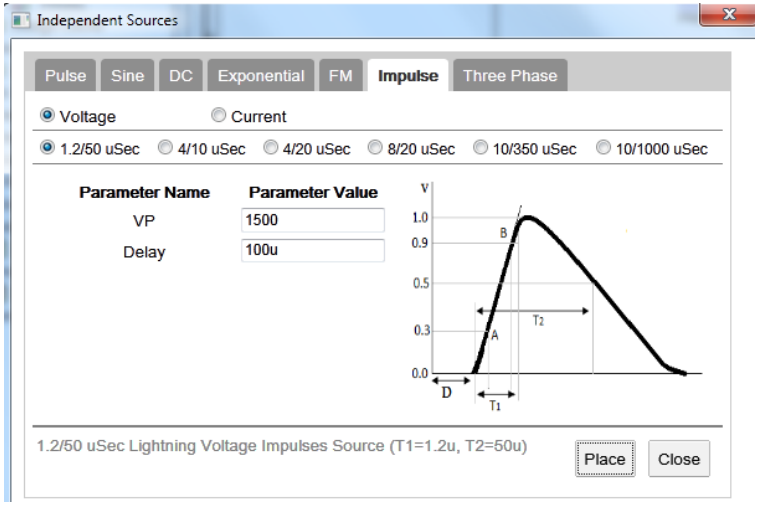
- Create models for two types of PWL sources
  - Voltage PWL
  - Current PWL
- Option to reference external file or specify points inline

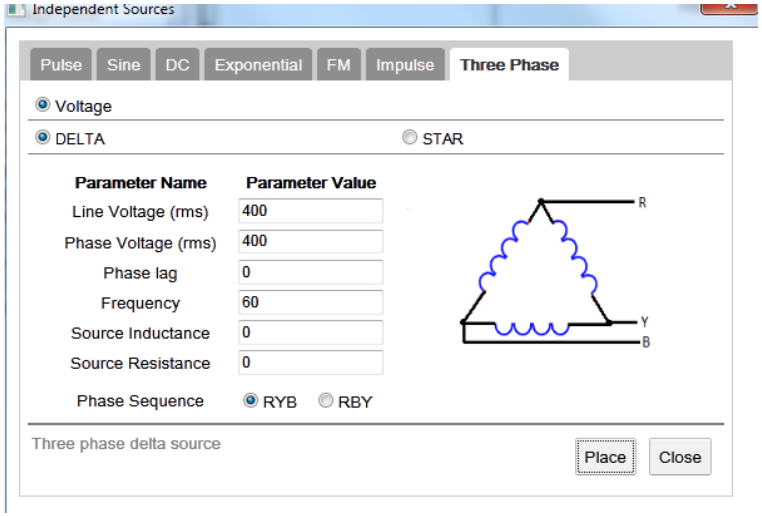




Independent Sources

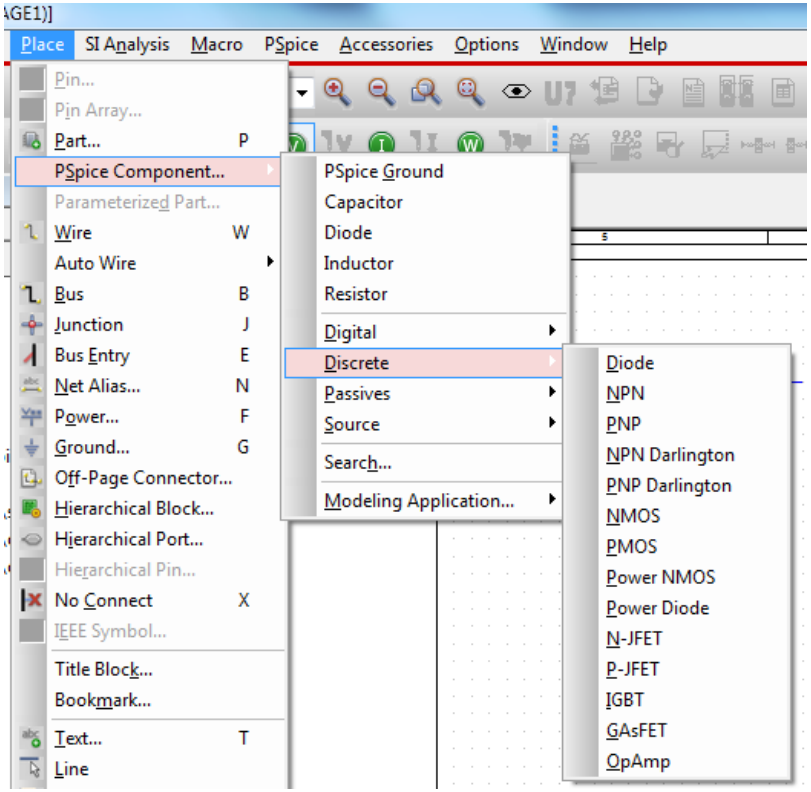
- Create simulation models for seven types of sources
  - Pulse
  - Sine
  - DC
  - Exponential
  - FM
  - Impulse
  - Three Phase
- For more information refer to
  - http://www.allaboutcircuits.com/vol_2/chpt_10/5.html





Redefined Quick Place Menu

- Capture's Place > PSpice Component menu has been updated with new items and sub-menus including
  - PSpice Ground
  - Common discrete components
  - New sources
  - etc…
- No library setup is required to use any of these components
  - Simulation-ready



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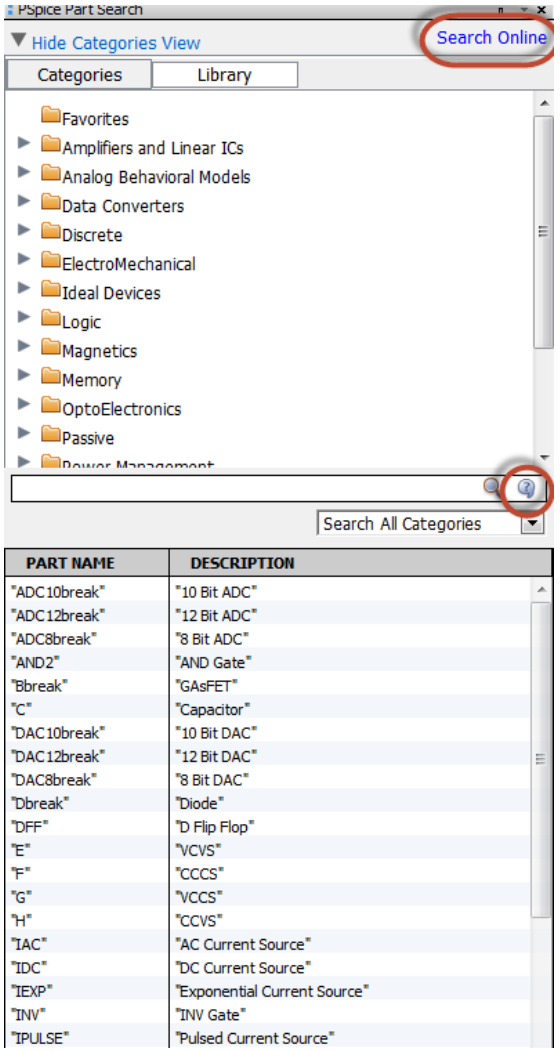
PSpice Part Search

- Quickly and easily search for and place simulation-ready PSpice components from the thousands of parts in the Cadence-installed libraries
- Designed with familiar navigation tree
  - Installed components can be viewed as individual libraries or as model-specific categories.
- Custom search expressions can be used for specific or targeted searches
- Double-click automatically initiates place part mode and attaches the component to the cursor



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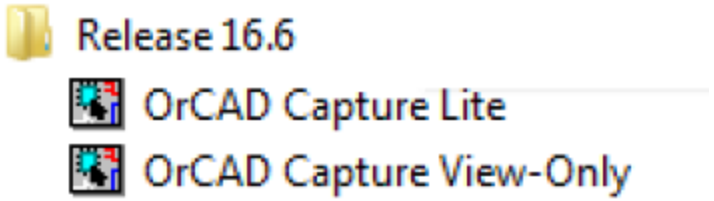
Capture Viewing and Demo Mode

- New view-only mode allows any project / schematic files to be opened for review without consuming a license
  - No license will be checked out; even if one is available
  - No limit on viewable designs
  - No editing of designs
- Capture Demo/Lite Mode
  - No license will be checked out even if the license manager is available
  - All limits of Lite remain applicable
- Two new Start menu items are provided



PSpice

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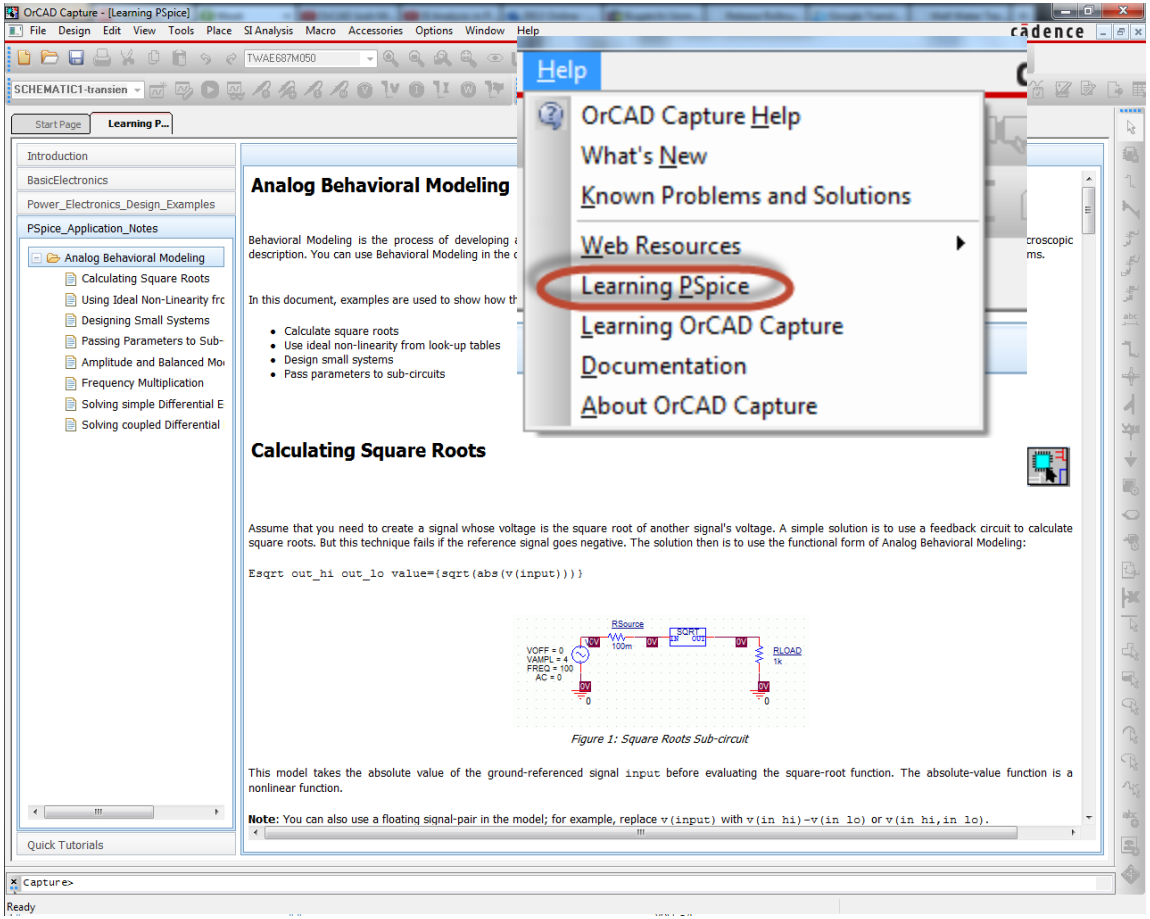
Learning PSpice Update

Application note for Analog Behavioral Modeling

Complete theory and design

Accessible through Help > Learning PSpice



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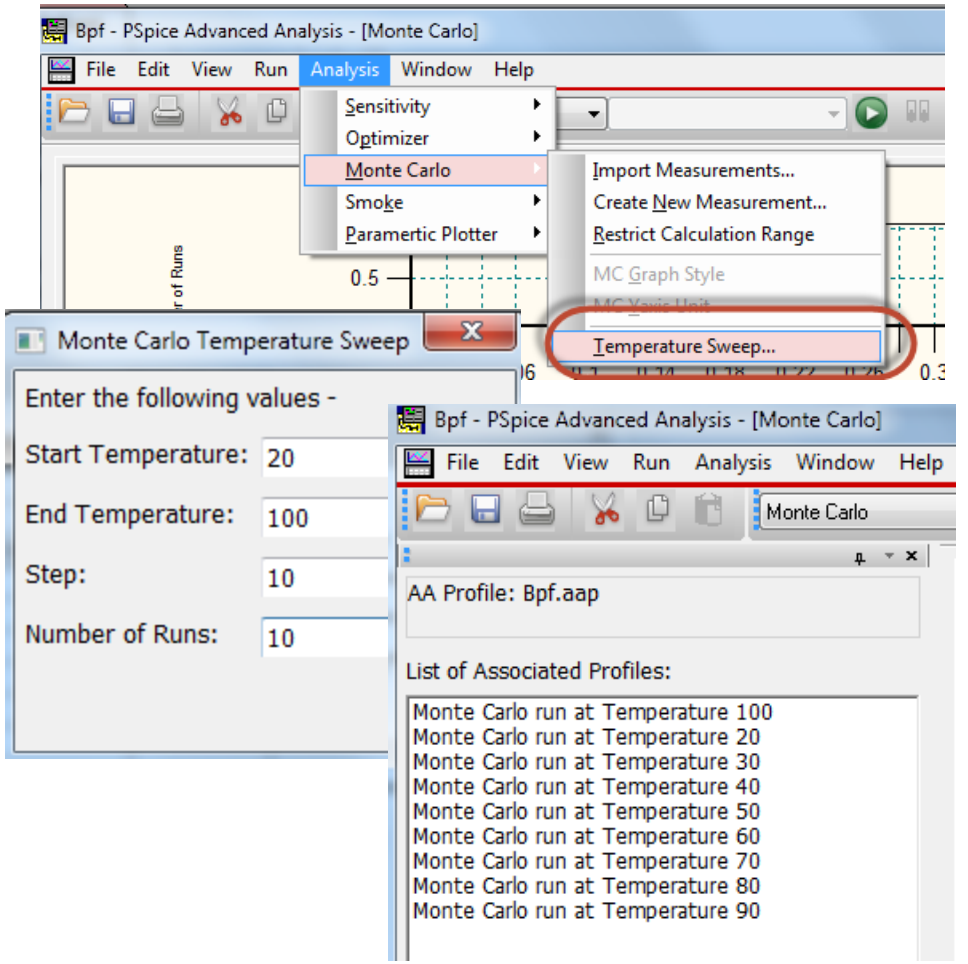
Monte Carlo Temperature Sweep

- Marketplace application for PSpice Advanced Analysis
- Allows multiple runs of Monte Carlo sweeping different temperatures
- Automatically creates separate profile for each temperature run
- Can be run on any of A/A sample circuits



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Random Functions for PSpice Engine

- Three Random functions added
  - RND – returns new random value at every time point
  - RNDR – returns new Random value at start of each new analysis
  - RNDC – returns new random value at start of each new Monte Carlo, temperature, or stepping run
- Random functions useful in adding Noise or parametric variances
- Previously, only way to create Random function was to create PWL source and set it in auto-repeat mode

Add it as a noise on signal…in this case the output can be one of the following –

[input +/- (scale * RND)] (input can be gnd)
[input +/- (scale * input * RND)] (Input not being zero)

Examples:

E1 N3 0 VALUE={5*RND}
E2 N4 0 VALUE={5*RNDC}
E3 N5 0 VALUE={5*RNDR}

Note: These elements may also be added to @Pspice comment directives released in pevious QIR

OrCAD PCB Editor

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IPC-2581 RevB

- Package Pin One identification
  - Property (PKG_PIN_ONE) attached to a pin that indicates primary pin of footprint
- Package Pin One orientation
  - Property (PKG_PIN1_ORIENTATION) assigned to board or symbol to designate established zero (0) orientation
- Polarity Marking
  - Property (MARKING_USAGE) attached to symbol or drawing element to indicate marking type
- IPC-2581 configuration file
  - File contains BOM header information to populate data fields such as BOM name, revision, contact information, etc.

PRINTED CIRCUIT DESIGN & FAB

IPC Releases IPC-2581 B Revision

Written by Mike Buetow

Monday, 21 October 2013 15:09

BANNOCKBURN, IL -- **IPC** last week published the B revision of IPC-2581, the consensus industry standard for electronics data transfer. The task group developed and released the latest revision for communicating design intent to manufacturing in just 12 months.

The schema and non-printable .pdf are available via free download at: http://www.ipc.org/2581.

A total of 14 companies, including six users, seven suppliers and one general interest, voted to affirm the revision. One other supplier abstained.

The task group now plans to focus on additional validation measures while it gives the software providers time to update their tools to the latest revision. Currently, **Polar Instruments** has the only software program to support IPC-2581B, while **Cadence, DownStream Technologies, EasyLogix, Numerical Innovations, Ucamco, Vayo,** and **Wise Software** support IPC-2581A. **Adiva, Siemens** and **Zuken** support IPC-2581 Rev 1.

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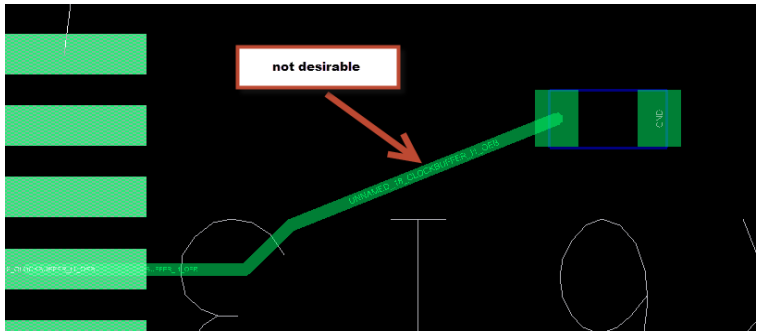
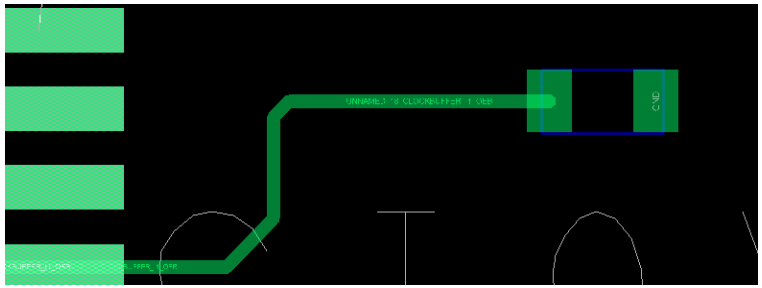
Move Components with “Slide Etch” option

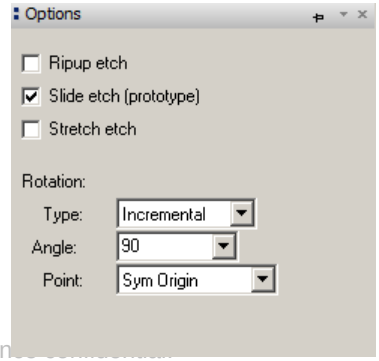
- Undesired results today when moving components with routes attached
- Existing ‘Stretch Etch’ not seen as effective; results in off angle routes
- New “Slide etch” option designed to reroute etch using conventional angles (45, 90)



Undesired results after move



Desired results after move



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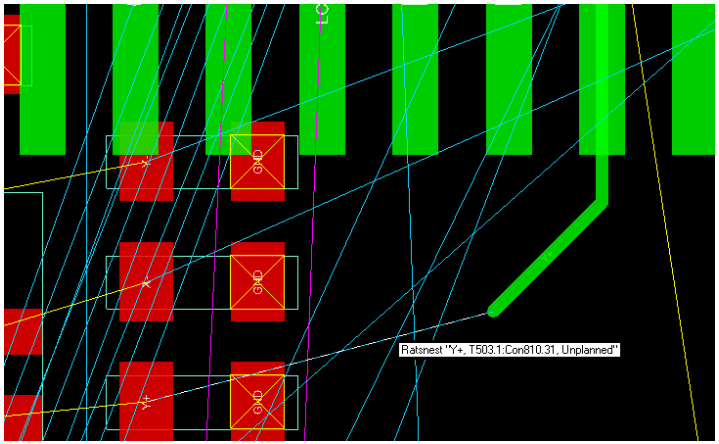
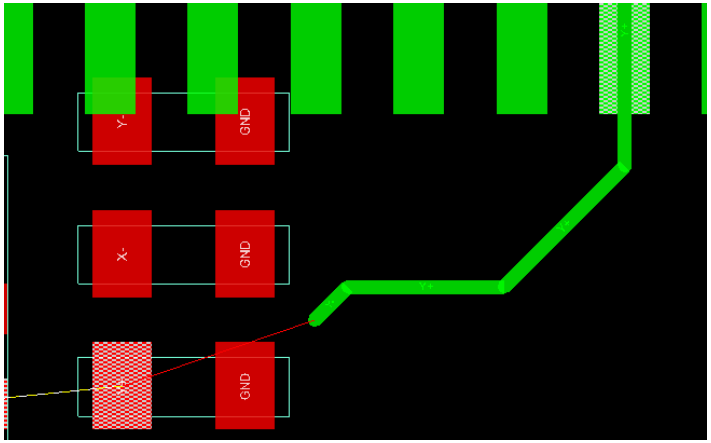
Dynamic Rat Suppression

- When ‘Add Connect’ command is invoked, all rats except the active net are temporarily suppressed
- Designed to de-clutter canvas during routing
- Variable controlled for 16.65
  - set acon_auto_rat_blank



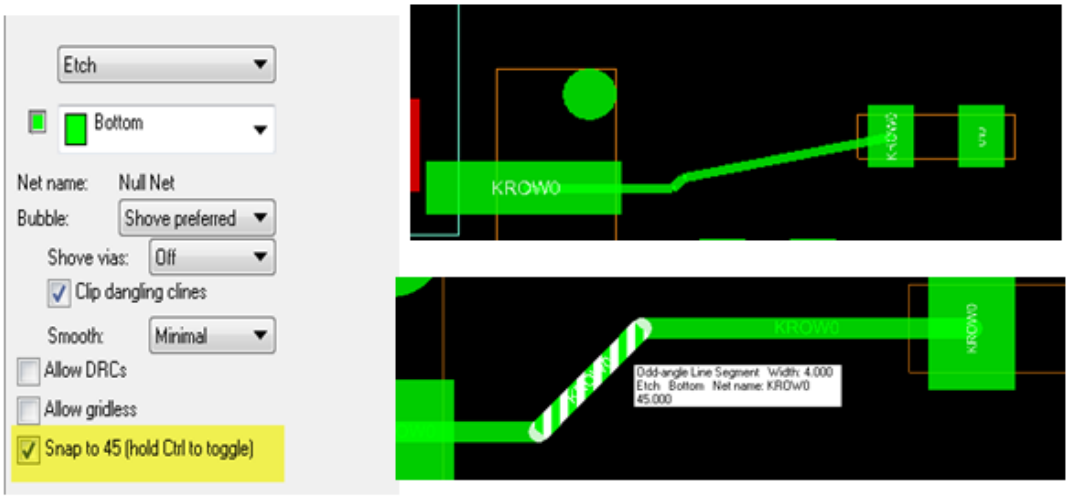
Routing with Rats Display



Routing with Rats Suppressed

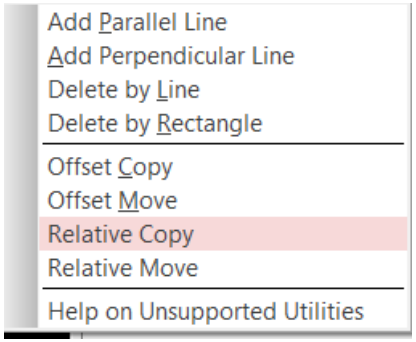
Enhanced “Edit Vertex” – Snap on 45

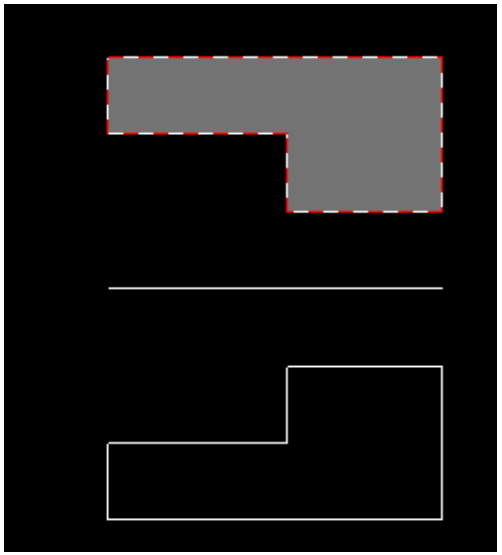
- New edit-vertex behavior can be used to clean up off-angle routing often created by using move – stretch edit command
- Unsupported prototype variable
  - “Enable Edit Vertex 45 snapping”



New Drafting Commands

- Relative Move & Copy
  - Move & Copy elements about a user-specified axis
- Current suite of prototype Drafting functions
  - Add parallel line
  - Add perpendicular line
  - Delete by line
  - Delete by rectangle
  - Offset copy
  - Offset move
  - Relative copy
  - Relative move





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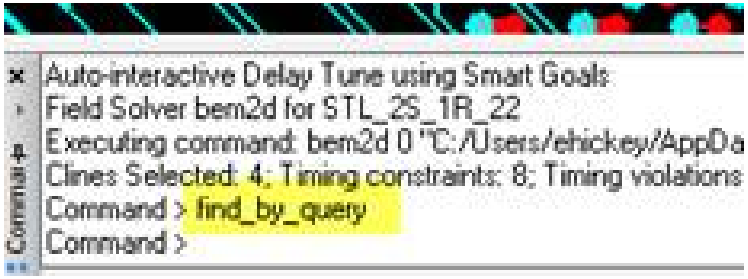
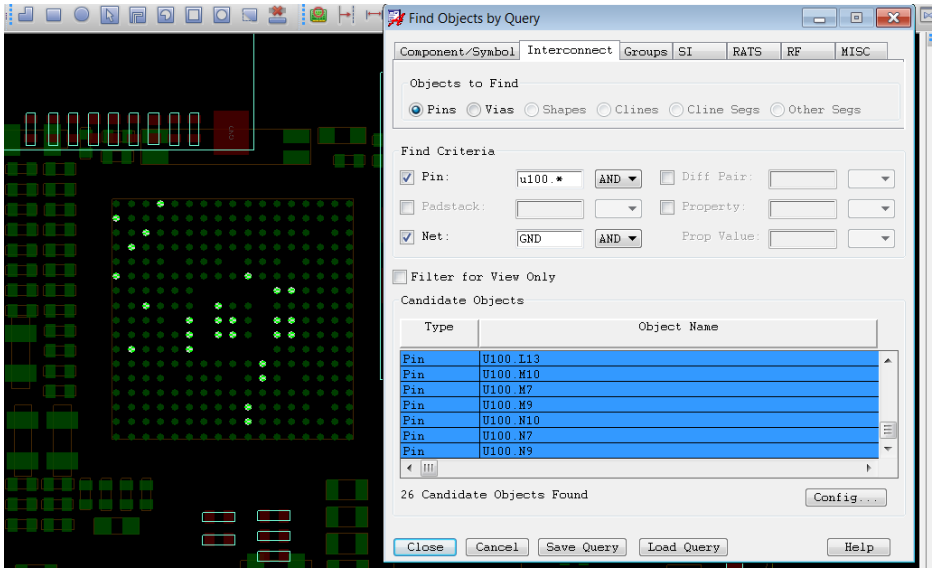
New “Find by Query” Function

- Find objects based on element and operations criteria
  - Type find_by_query in command window
- Currently available to customers (prototype)
  - Private variable required
  - Set ALLEGRO_QUERY_PROTOTYPE = 1





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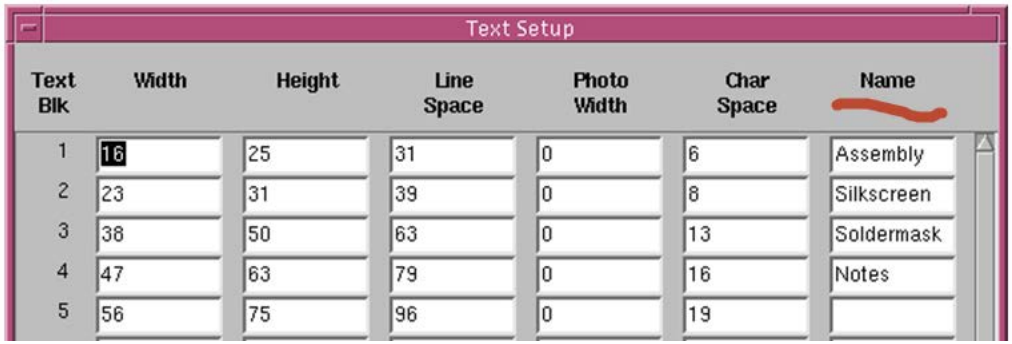
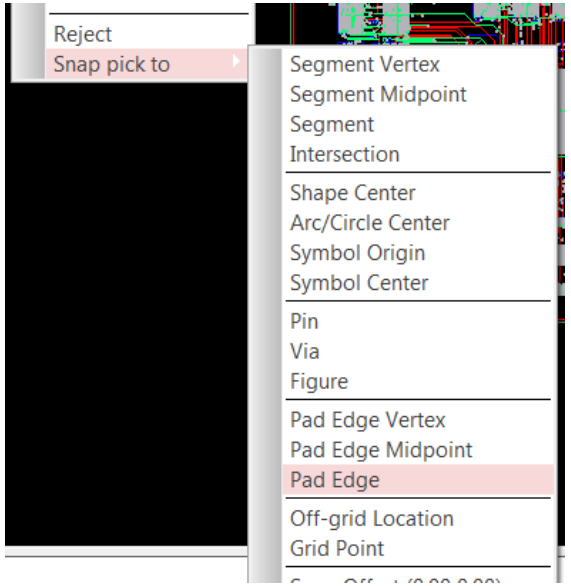
Misc Enhancements

- Text block Name field
  - Select Text block by functional name (Assembly, Silkscreen, etc)
  - Previously limited to non-descriptive block number
- Snap Pick enhancement
  - New “Pad Edge” options





Key CCRs Addressed

Key CCRs Addressed

- Draw toolbar disappears on doing Print preview
- Capture crash while adding new part from spreadsheet
- Support of providing “mechanical" value to the class property in mixed case
- Mechanical parts showing with Part reference in CIS BOM
- Variant list is showing wrong results for hierarchical designs
- View Database Part gives incorrect result in complex design with variants
- Tolerance not recognized by BATTERY and CURRENT parts
- Justification fixes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