Chip-On-Board Technology

Advanced Packaging Support

Where real estate space needs to be maximised, devices can often be supplied as stripped down versions presented as bare dies. These can be mounted on traditional substrates using chip on board technology. The Pulsonix Chip-On-Board toolset option enables this technology to be easily incorporated into your Pulsonix PCB designs.

Chip-On-Board

The Chip-On-Board option provides features for creation and annotation of die & bond pads and bond wires. It also allows automatic placing bond pads around the die. Within the Pulsonix design the bond pads are treated as special pads and can move independently of die and normal pads.

Advanced Rule Sets

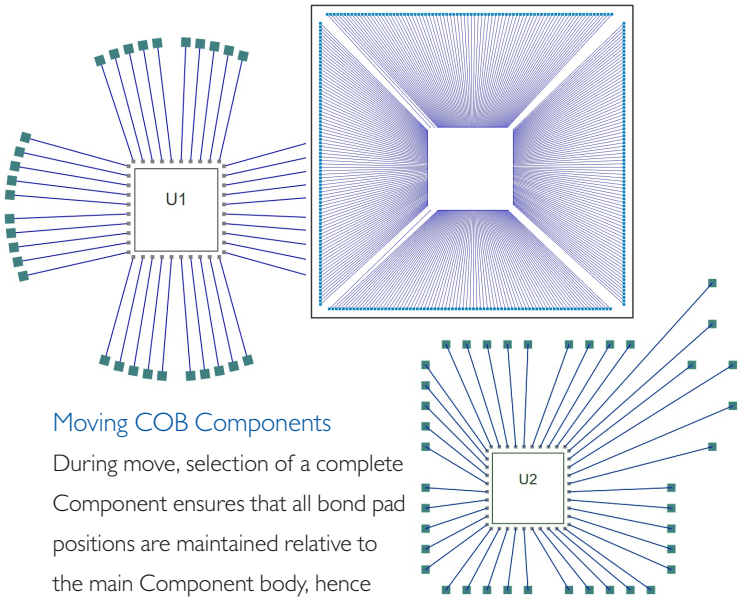
Pulsonix contains a set of rules that are obeyed using both the Online DRC and batch DRC processes. Rules can be set for min and max length of the bond pad from the die pad, and for the crossing over of bond wires. Conditional Spacing rules can be defined for COB devices that use smaller values for this type of detailing. This is also a highly desirable requirement where mixed conventional and bare die technologies are used.

Footprint Creation

The Footprint editor allows fast and simple creation of Chip-On-Board footprints. Options for the insertion of die and bond pads into the footprint ensure that the correct pad type is available and subsequently handled correctly later on in the design editor. Addition of die pads will allow the die and bond pad plus the bond wire to be added in one single process. To facilitate placement of bond pads in a uniform pattern, a Place on Shape option is provided where the pads follow any shape drawn. Where bond pads must be in-line with the wire, regardless of the pad angle, automatic alignment, even when the bond pad is rotated or moved in the footprint is possible.

Component Interaction

Components which contain die and bond pads are handled intelligently using an advanced rule set. Bond pads can be interactively moved independently of the main die 'body'. This movement is controlled using the min and max length rules of the bond wire, with cross-over rules also maintained in this process. The chip die can also be moved independently of the bond pads and position reset if necessary.



Moving COB Components

During move, selection of a complete Component ensures that all bond pad positions are maintained relative to the main Component body, hence precise bond pad positions are always guaranteed.

Comprehensive Reports

Pulsonix provides a set of detailed reports that can be used to output wire positions. The built-in Report Maker option also allows all Chip-On-Board items to be output into comprehensive customised reports.

Feature summary:

- Insert Bond and Die Pad functions
- Insert Wire between die and bond pads
- Automatically place bond pads around shape
- Die pads allowed on inner layers and in board cavities
- Min/Max wire length rules
- Min Die pad space
- Support for insulated or non-insulated (bond) wires

Aancillary features which aid the production:

- Output bond and die pad positions using Report Maker
- Create a report for wire machines using the Report Maker
- Wire report output
- On-line and batch design rules checking of:
  - Wires crossing and their insulation status (insulated or not)
  - Min/max bond wire lengths
  - Item colours for bond pads and wires
  - Wires inserted on special layer
  - Layer Class definitions for bond pad only plots

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