

Title:           Routing with Jumper

Product:        OrCAD / Allegro PCB Editor

Summary:        How to setup and work with jumpers in  
                  single layer designs.

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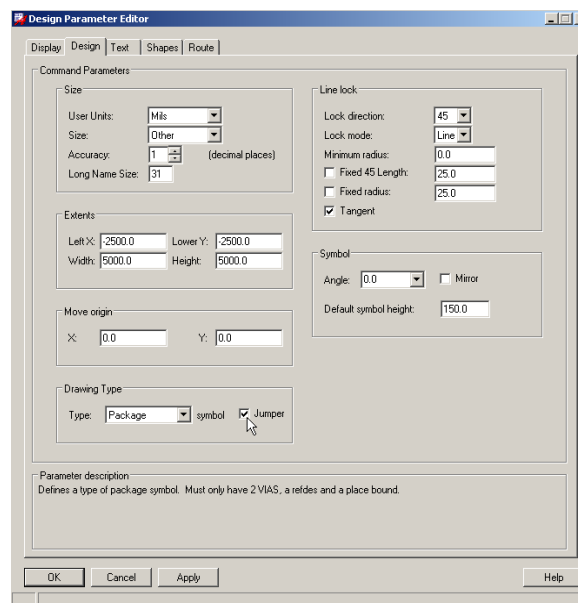
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# 1 Jumpers (Etch Edit Mode)

## 1.1 Define jumper symbol with through hole pins

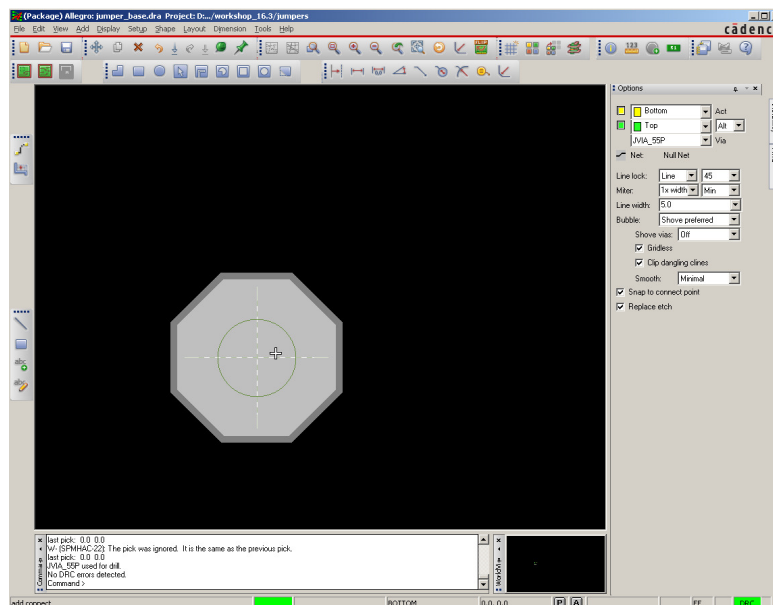
Open the file `jumper_base.dra`

From the main menu select **Setup-> Design Parameters – Design Tab**  
In the Drawing parameters form, enable the Jumper checkbox. This checkbox defines the symbol as a “jumper”.

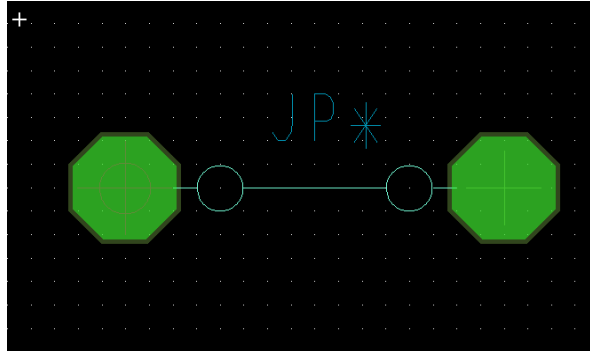


Close the parameters form.

Add a via (`jvia_55p`) at location `x:0.0 y:0.0`



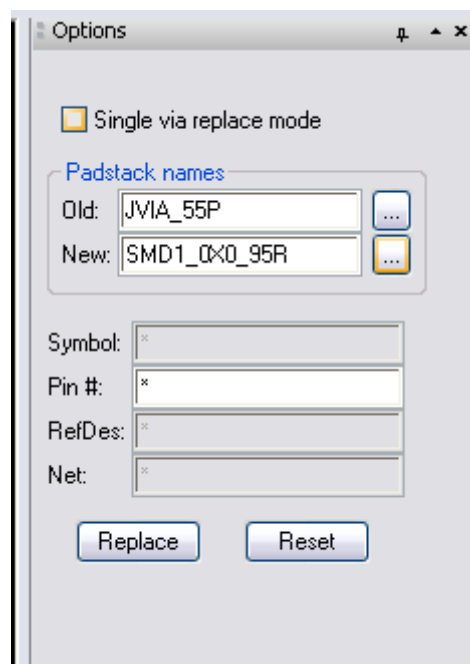
Copy the via to location x:200.0 y:0.0 location  
Add jumper symbol graphics, place boundary, and refdes drawing elements.



Create and save the symbol as **jumper\_200**.

## 1.2 Define jumper symbol with SMD pins

To create a SMD jumper you only need one further step. Place 2 vias described in chapter 1.1. Then go to **Tools > Padstacks > Replace** and select one via.



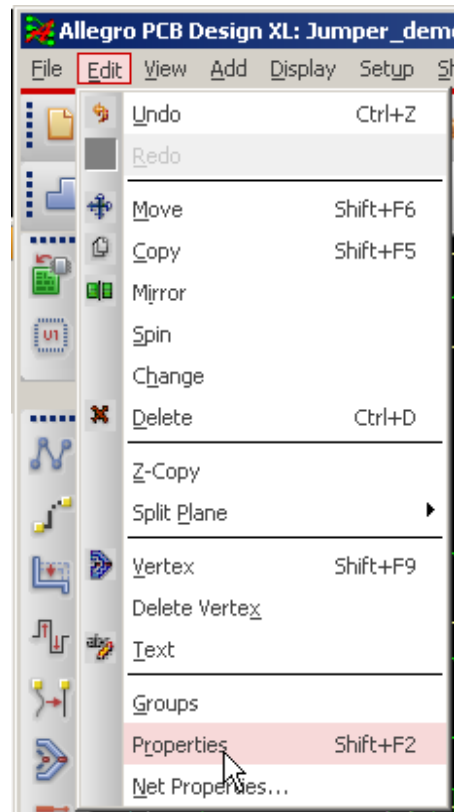
Got to **Option Panel** and put in the SMD pad in **New** field. Select Replace. This should replace both vias to SMD padstack.

### 1.3 Setup board file

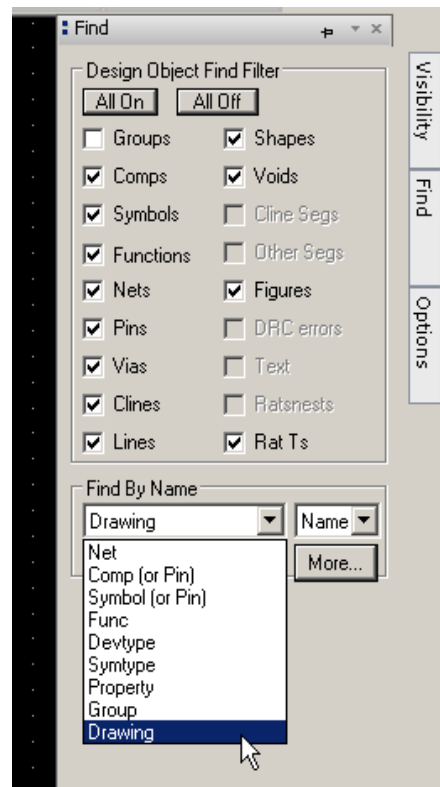
Open the file **jumper.brd**

Add the JUMPER\_LIST property to the board drawing.

Edit->Properties

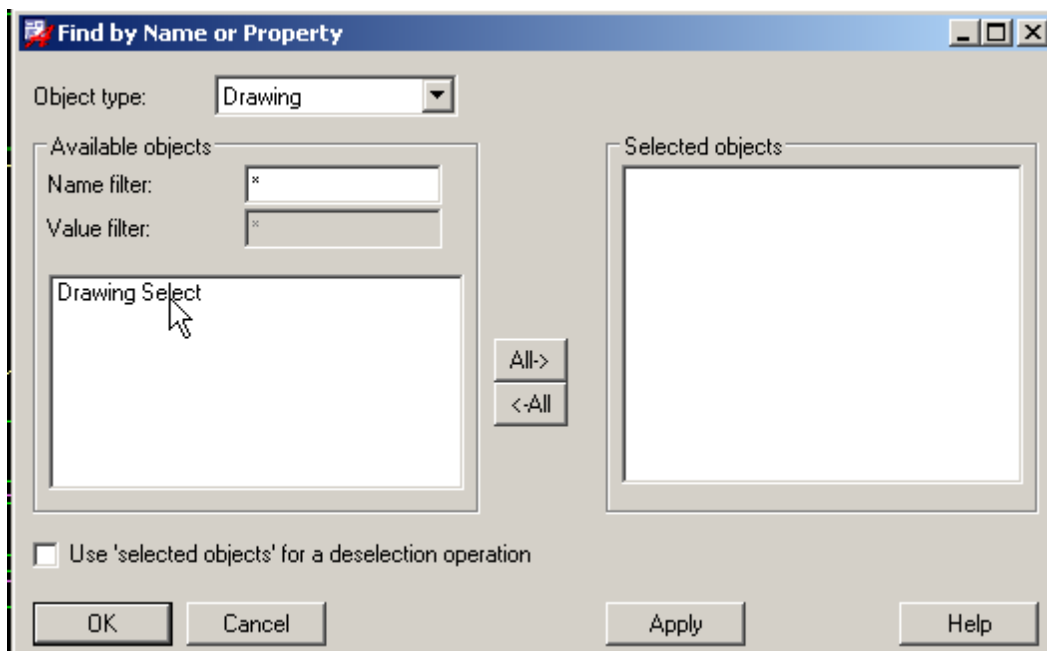


In the Mini-status Find Filter, set Find By Name value to *Drawing*

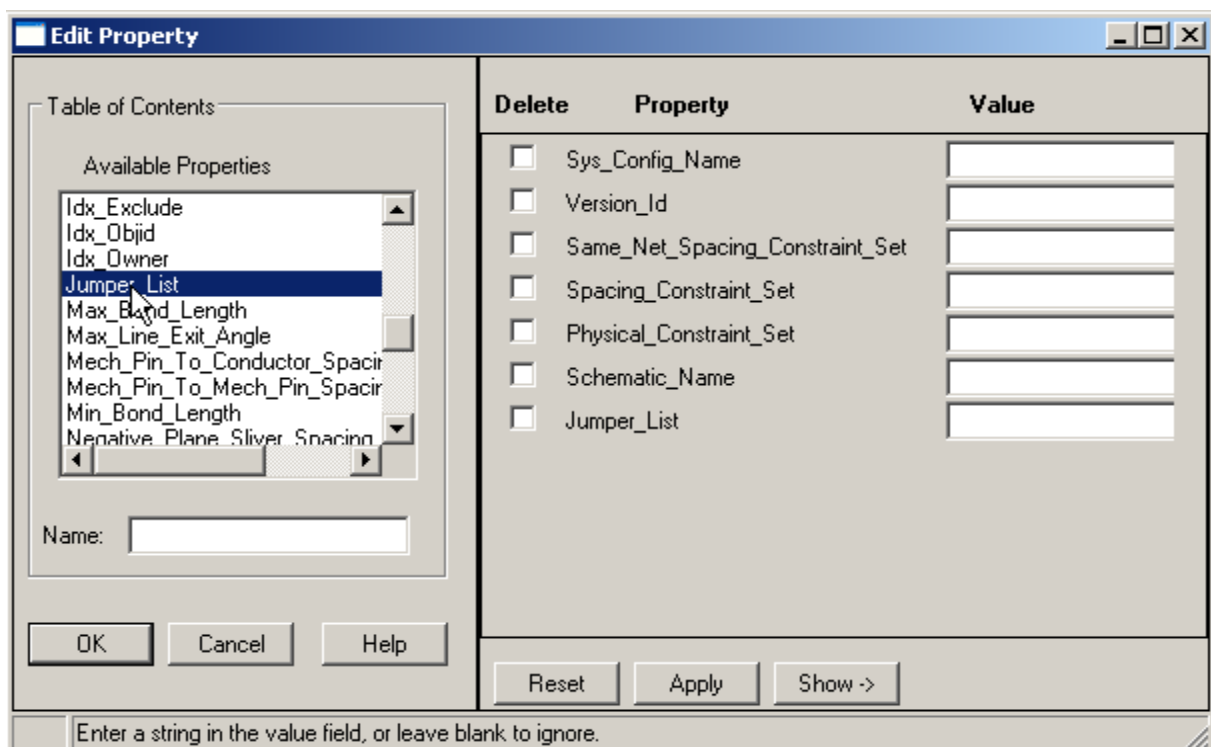


Select More button

Move *Drawing Select* to the *Selected objects* panel, then select *OK* button



Add the JUMPER\_LIST to the Properties panel.



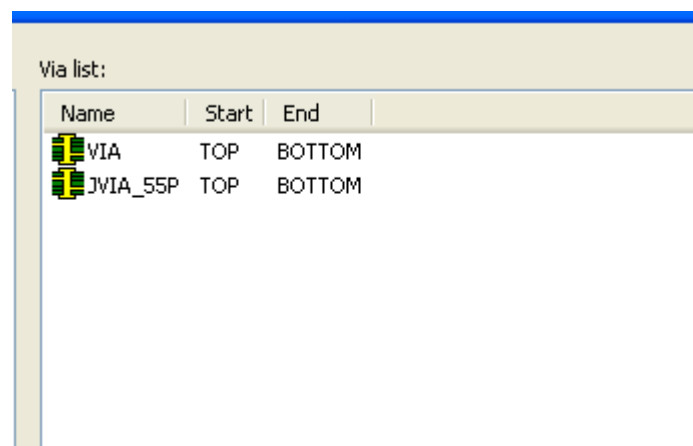
Enter the following list of jumper model names separated by colon in the property value field.

***jumper\_250;jumper\_300;jumper\_400***



Apply and close the edit properties form.

In Constraint Manager, add jvia\_55 to the DEFAULT Via List.

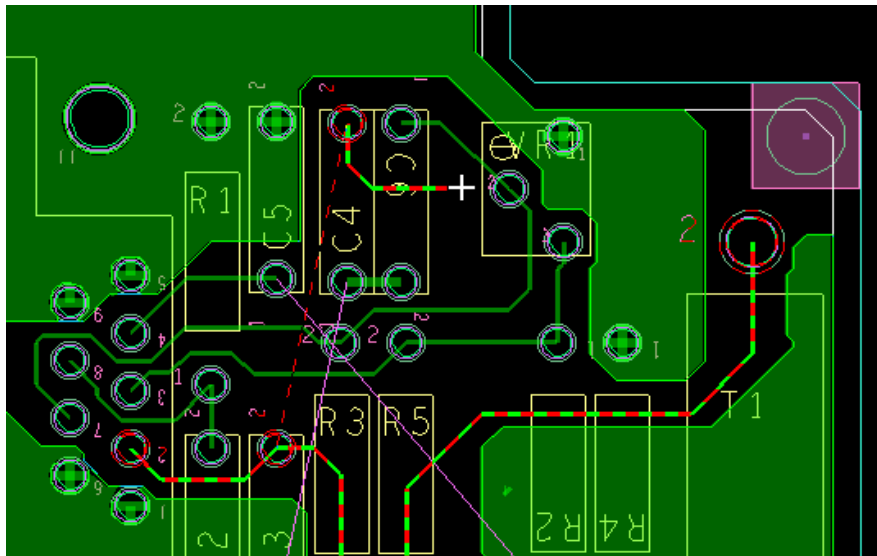


## 1.4 Routing with jumper

Start add connect

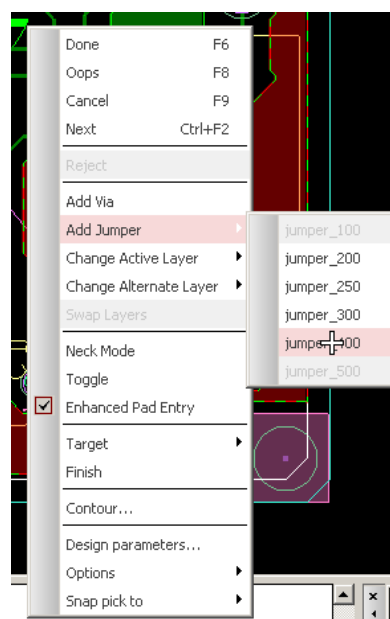
Select pin 2 of component C4

Add a Cline to the right at location x1237.5 y1150.0



Open the RMB pop up menu and place the cursor over the Add jumper entry

A list of jumper names defined in the JUMPER\_LIST property field is displayed. Jumper names that do not have corresponding jumper symbols are grayed out or disabled. We don't have unavailable symbols in our example.

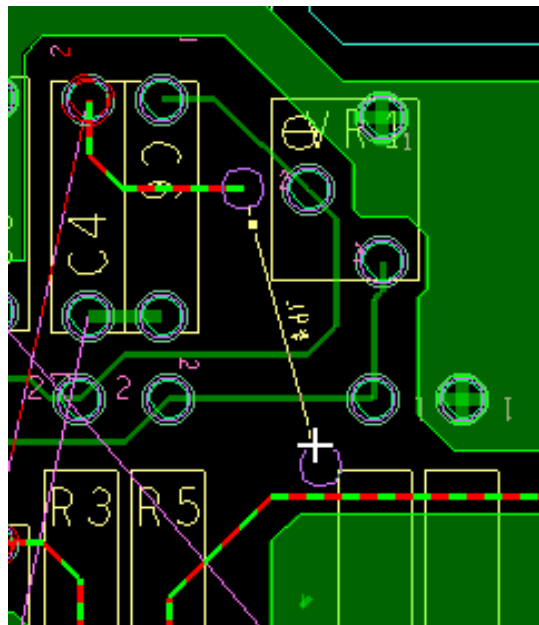
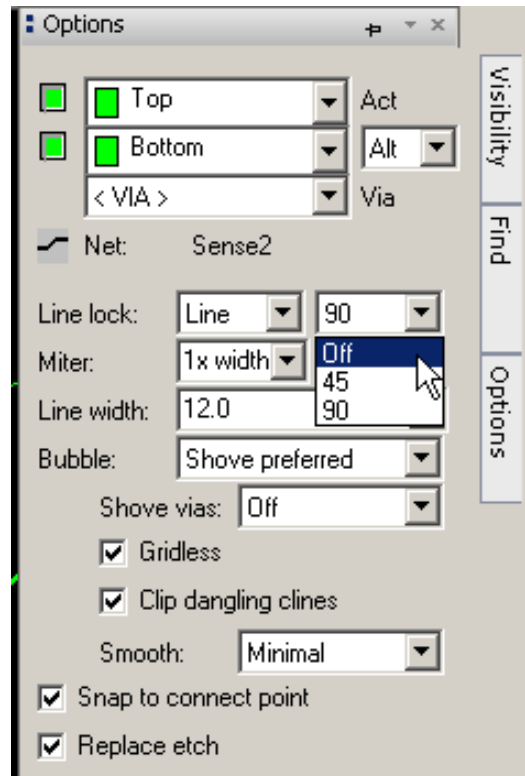


Select jumper\_400

The jumper anchor point is added at the last pick.

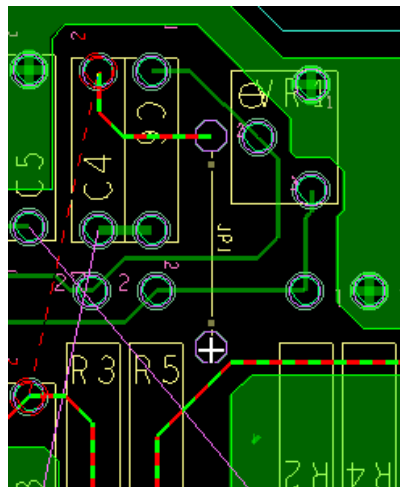
Moving the cursor around, the jumper symbol is rotated.

To allow any angle rotation, in the etch edit mini status options form, set the line angle to *Off*





Pick a second location to position the jumper.



Finish the connection.

Using the above steps, add more jumpers and complete the remaining connections.