

Title: Polar Copy

Product: OrCAD/Allegro PCB Editor

Summary: How to work with Polar Copy

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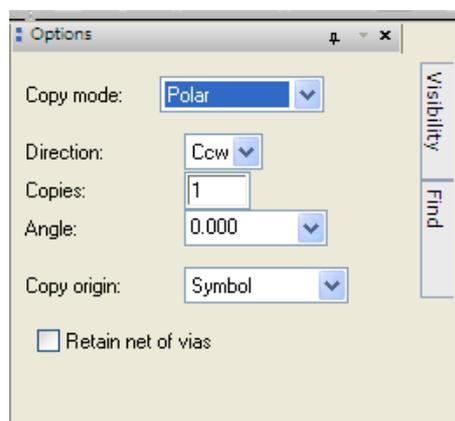
1 Polar Copy

Polar Copy is a part of the copy command. To use Polar Copy set the Polar mode in the Options window.

The polar command lets you enter a selection (pick) point (P) specified by polar coordinates. Specify polar coordinates by radius, then angle. Radius is the distance from the origin to P; angle, is the angle from the positive x axis to the ray joining the origin with P. Polar coordinates make it easier, for example, to add a fixed radius arc to the drawing and symbols at odd angles.

You cannot use a polar coordinate for entering the first point in a command; polar coordinates must have an origin point, which must first be chosen or typed in. You can enter the polar command with the values for radius and angle in the command line or enter the command without values, in which case it prompts you for the radius and angle.

1.1 Options Tab for the Polar copy Command



Direction	Specifies a direction for the copied elements: Cww (counter clockwise) or Cw. (clockwise).
Copies	Specifies how many copies of the element the tool makes. When set to 1 (the default), the tool places the element(s) in the cursor buffer to be placed dynamically.
Angle	Specifies the incremental angle to be used when placing the copies around the origin. Enter a number between 0 and 360 or choose a number from the pop-up. The tool allows accuracy for up to three decimal places. See "Incremental Angles" on page 130 for an example.

Copy origin	Identifies the point on the element and each copy where the radius from the polar origin should intersect. The choices for this field are described previously in the table.
Retain Net of Vias	Specifies whether the net of the chosen via should be copied to the corresponding new via.

1.2 Procedures

Copying Elements in Rectangular Patterns

1. Hover your cursor over an element. The tool highlights the element and a datatip identifies its name.
2. Right click and choose Copy from the pop-up menu.
3. Right-click and choose Options from the pop-up menu, or in the Options tab, choose Rectangular and complete the other entries.
4. If you entered a value in the Angle field:
 - a. Choose Rotate from the pop-up menu.
 - b. Rotate the elements to the angle you need and click to lock them in that position.
5. Choose the new location for the elements. Each mouse click pastes another copy of the elements in your design.

1.3 Copying Elements in Radial Patterns

1. Hover your cursor over an element. The tool highlights the element and a datatip identifies its name.
2. Right click and choose Copy from the pop-up menu.
3. Right-click and choose Options or in the Options tab, choose Polar and complete the other entries.
4. Left click to specify the polar origin for the copied element.
5. Choose the new location for the element. Each left click pastes another copy of the element on your design. The tool creates a pattern of copies around the point of origin.
6. Choose Done from the pop-up menu.

1.4 Copying Grid Lines

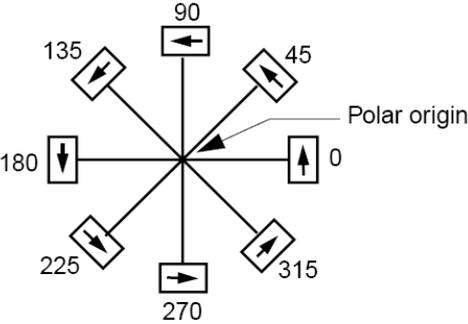
1. Hover your cursor over a placement grid line. The tool highlights the line and a datatip identifies its name.
2. Right click and choose Copy from the pop-up menu.
3. Move the cursor away from the original line. The original line remains in place and a copy moves with the cursor.
4. Move the copy to its new position and click to place it there.
5. If necessary, continue moving the cursor to create and place additional copies.
6. From the pop-up menu, choose Done.

1.5 Mirroring Elements on the Same Subclass

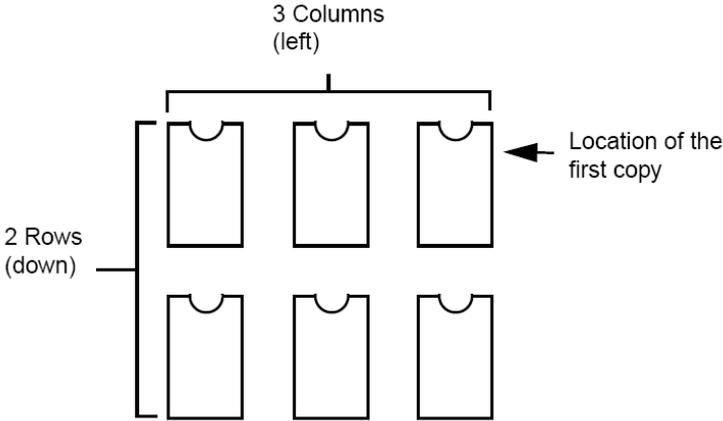
1. Hover your cursor over an element. The tool highlights the element and a datatip identifies its name.
2. Right click and choose Copy from the pop-up menu.
3. Right-click and choose Options from the pop-up menu, or in the Options tab, choose Rectangular and complete the other entries.
4. Choose the element(s) to be copied. For a group of elements, window select an area to choose a group.
5. Right click and choose Mirror Geometry from the pop-up menu that appears.
6. Move the cursor away from the original element. The original element remains in place and a mirror image of the original, around the Y-coordinate of the copy origin, moves with the cursor.
7. Move the mirrored copy to its new position, and click to place it there.
8. From the pop-up menu, choose Done.

1.6 Examples

1. This example uses an angle value of 45 degrees and shows the possible locations for this setting:



2. In this example the number of columns and direction is 3, Left and the number of rows and direction is 2, Down.



3. In this example, the tool generates a radial pattern of copies:

