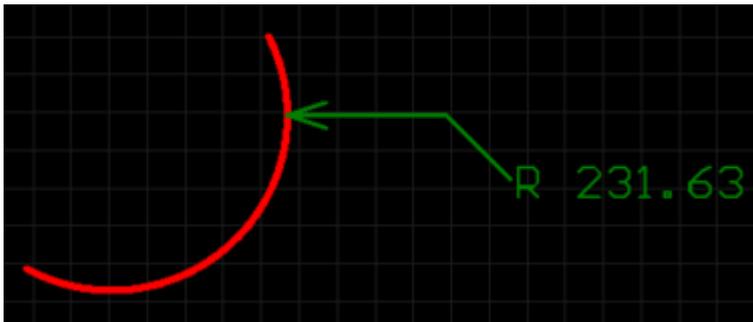# Radial Dimension

Modified by Jason Howie on Oct 24, 2014

Parent page: [Dimension](#)

A placed Radial Dimension.

Summary

A radial dimension is a group design object. It allows for the dimensioning of a radius with respect to an arc or circle. The dimension can be placed either internally or externally, in relation to the circumference of the arc/circle.

Availability

Radial dimension objects are available for placement in the PCB Editor only, by clicking **Home |**

Dimension | and selecting **Radial** from the drop-down list.

Placement

After launching the command, the cursor will change to a cross-hair and you will enter dimension placement mode. Placement is made by performing the following sequence of actions:

1. Position the cursor and click or press **Enter** to anchor the dimension to the desired arc or circle.
2. Move the dimension's arrow pointer to the desired location around the arc or circle. The arrow can be placed either inside or outside and movement is in accordance with the **Angular Step** value in the *Radial Dimension* dialog. When the required position has been attained, click or press **Enter** to lock the arrow in place.
3. The text can now be initially positioned in relation to the tail of the arrow pointer. Move the text into the required position and click or press **Enter** to complete placement.
4. Continue placing further radial dimensions, or right-click or press **Esc** to exit dimension placement mode.

Additional actions that can be performed during placement are:

- Press the + and - keys (on the numeric keypad) to cycle forward and backward through all visible layers in the design respectively – to change placement layer quickly.
- Press the **Tab** key to access an associated properties dialog, from where properties for the dimension can be changed on-the-fly.

> While attributes can be modified during placement (**Tab** to bring up associated properties dialog), bear in mind that these will affect only the object being placed and subsequent objects placed during the same placement session.

Graphical Editing

This method of editing allows you to select a placed radial dimension object directly in the workspace and change properties such as the position of its text, the location of its arrow pointer and its reference point, graphically.

When a radial dimension object is selected, the following editing handles are available:
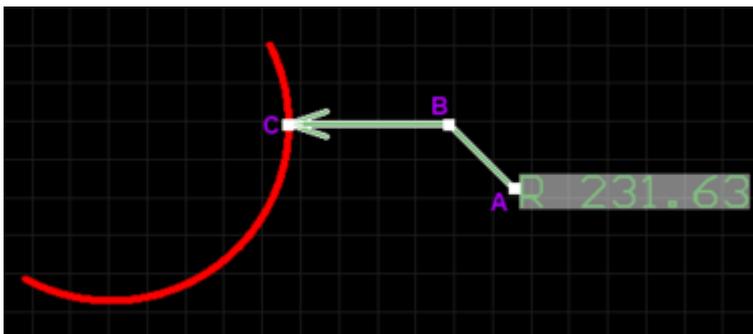
A selected Radial Dimension.

- Click & drag **A** to adjust the dimension text position, relative to the 'tail' of the arrow pointer.
- Click & drag **B** to adjust the position of the arrow pointer around the circumference of the circle or arc.
- Click & drag **C** to move the start point of the dimension.

> Handle **C** allows you to redefine the reference – once the dimension is detached from a reference object it becomes non-referenced and can be moved for attachment to a different reference object.

> If the dimension text is placed within the circumference of the arc or circle, only two of the three editing handles will be available for use – **A** and **C**. Editing handle **A** will assume the additional role of editing handle **B**.

If the radial dimension object is totally non-referenced (i.e. it is not attached to a reference design

object) click anywhere on it – away from editing handles – and drag to reposition it. While dragging, the radial dimension can be rotated or mirrored:

- Press the **Spacebar** to rotate the radial dimension anti-clockwise or **Shift+Spacebar** for clockwise rotation. Rotation is in accordance with the value for the **Rotation Step**, defined on the **PCB Editor – General** page of the *Preferences* dialog.
- Press the **X** or **Y** keys to mirror the radial dimension along the X-axis or Y-axis respectively.

An object that has its **Locked** property enabled cannot be selected or graphically edited. Double click on the locked object directly and disable the **Locked** property, to graphically edit the object.
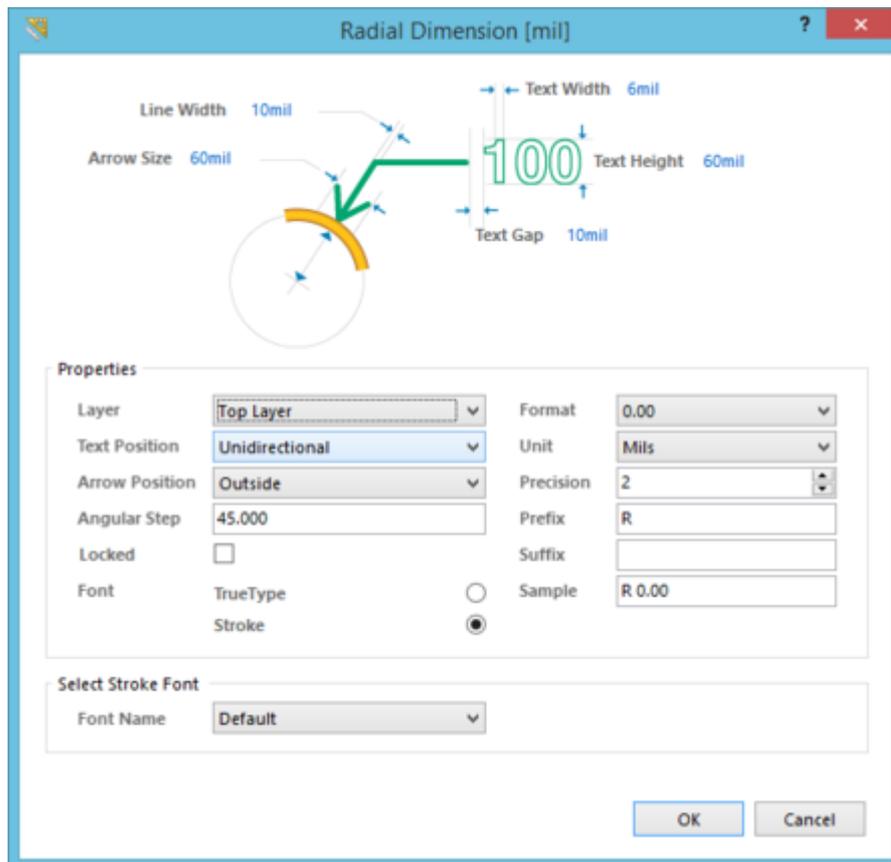

Non-Graphical Editing

The following methods of non-graphical editing are available:

Via an Associated Properties Dialog

Dialog page: Radial Dimension

This method of editing uses the following dialog to modify the properties of a radial dimension object.

The *Radial Dimension* dialog.

The *Radial Dimension* dialog can be accessed during placement by pressing the **Tab** key.

After placement, the dialog can be accessed in one of the following ways:

- Double-clicking on the placed radial dimension object.
- Placing the cursor over the radial dimension object, right-clicking and choosing **Properties** from the context menu.

Quickly change the units of measurement currently used in the dialog between metric (`mm`) and imperial (`mil`) using the **Ctrl+Q** shortcut. This affects the dialog only and does not change the actual measurement unit employed for the board, as determined by the ![Metric] and ![Imperial] buttons in the **Home | Grids and Units** area of the main menus.

Via the PCB Inspector Panel

Panel page: [PCB Inspector](#)

The *PCB Inspector* panel enables the designer to interrogate and edit the properties of one or more design objects in the active document. Used in conjunction with appropriate filtering, the panel can be used to make changes to multiple objects of the same kind, from one convenient location.

Notes

1. A radial dimension object can be moved in the following ways:
   1. *Selecting both the dimension object and the object that is being dimensioned*. The whole can be dragged to a new location as required.
   2. *Selecting the object that is being dimensioned only*. The dimension text will follow the object in its alignment plane only. The dimension pointer and tail will expand/contract to keep the relationship between dimension and object being dimensioned.
   3. *Selecting the dimension object only*. It is important to note that the dimension cannot be moved on its own if it is referenced by a design object. To move the dimension only, it must first be detached from the object it is dimensioning.
2. The dimension's value automatically updates as the radius of the reference arc or circle changes.
3. When the reference arc or circle to which a radial dimension object is attached is deleted, a dialog will appear, asking whether the dimension should also be deleted. If the dimension is not deleted, it remains in the workspace, but non-referenced.