NCTU IEE 5046
高頻電路設計與實驗
Allegro PCB Editor - Create Package Symbol

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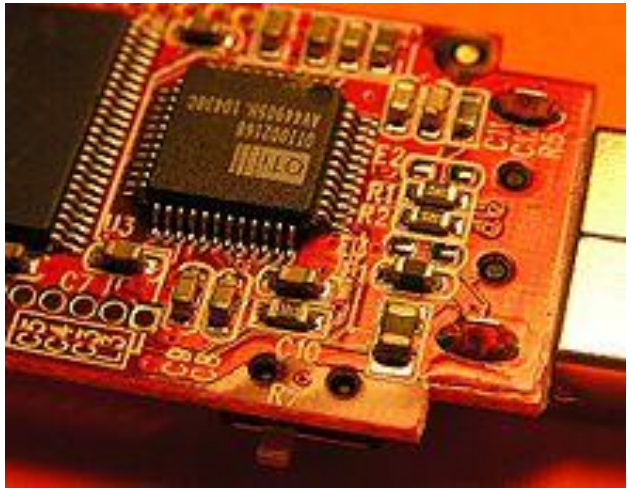
Package Symbol

- Two category of footprints:
  - SMT – Surface Mount Technology
  - TH – Through Hole

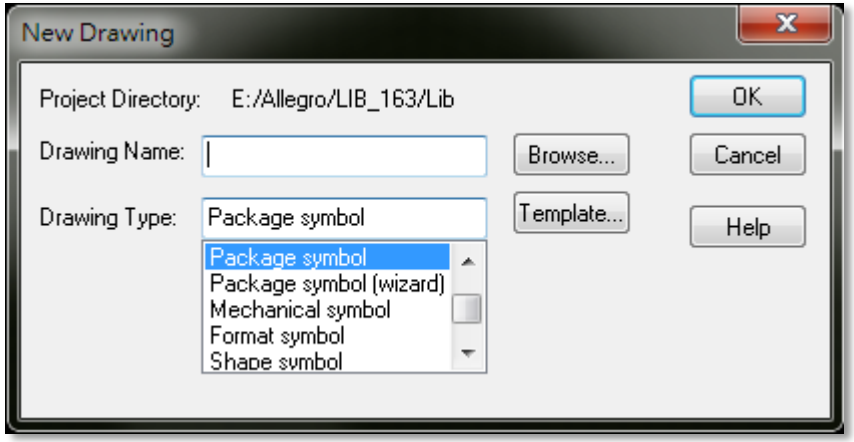


Surface Mount Technology

Through Hole

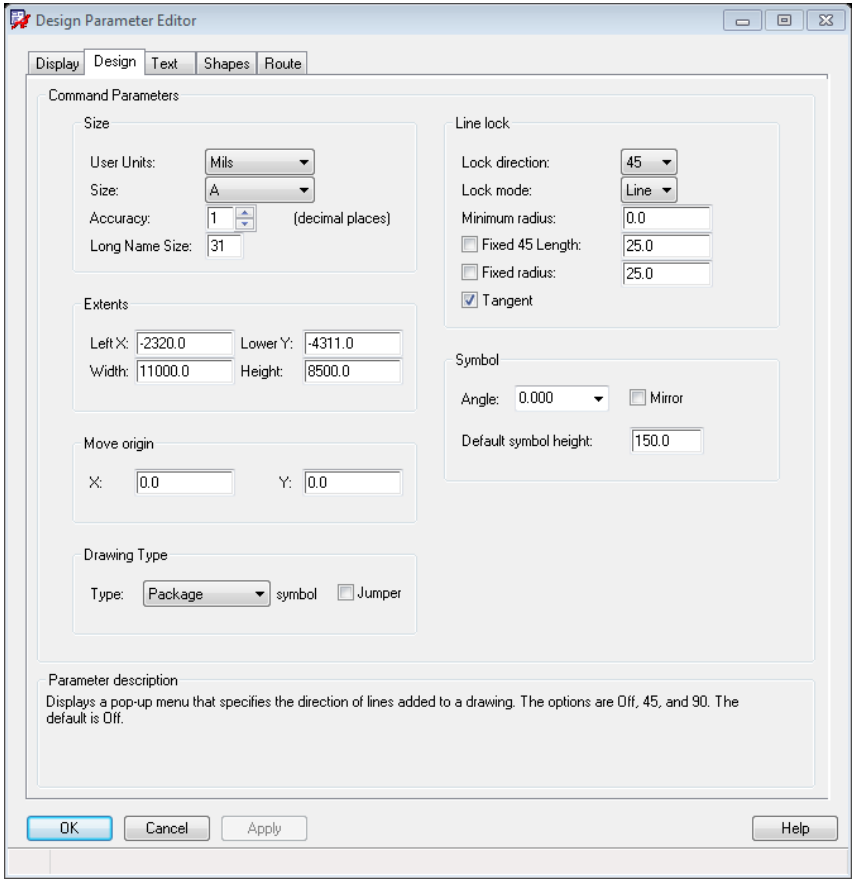
New Package Symbol

- Menu -> File -> New
- Remember to save package symbol at $psmpath



Basic Environment Setup

- Menu-> Setup -> Design Parameters
- Grid
  - Turn on 
  - 1 mil
- Units
  - Use English units (mil) to avoid conversion errors



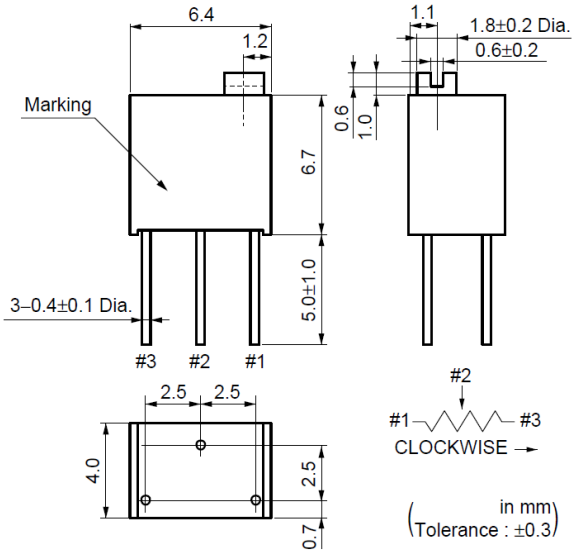
Look For Datasheet

- Digikey
  - http://www.digikey.com
- Mouser
  - http://www.mouser.com
- Extract Dimensions
  - Use professional version of Adobe Acrobat
  - Use Autocad
  - By hand

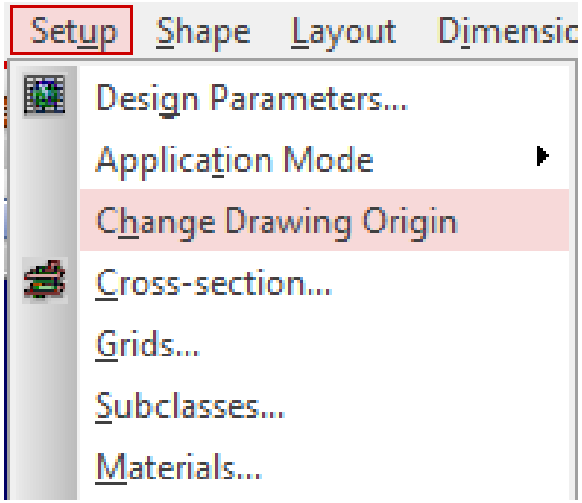
Through Hole Example

- Using: Murata PV 37 Series
- Be careful of the units
- Define pin numbers as datasheet suggests

PV37W

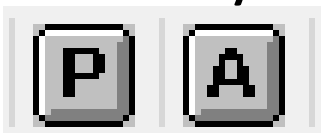


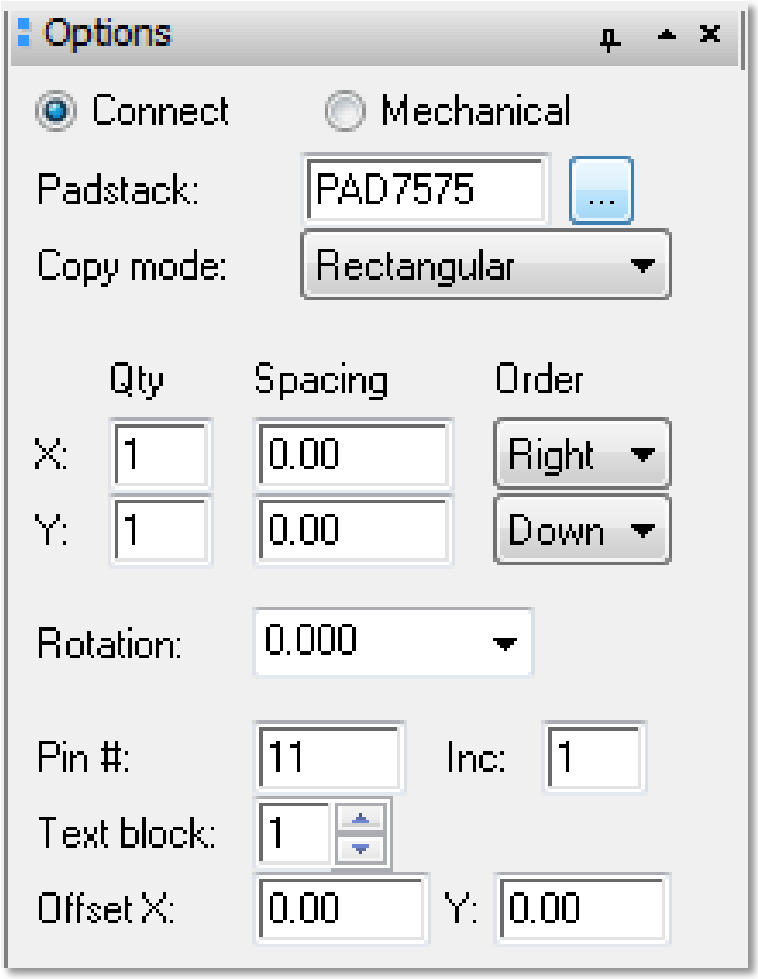
Through Hole Example



- Steps:
  - Define Origin
    - Center of n-th pin
    - Package Edge
    - Change origin dynamically for convenience
  - Write down dimensions on a draft paper first
  - Prepare pad-stack with pad designer
    - Configure drill holes on pad-stack
  - Place Pads

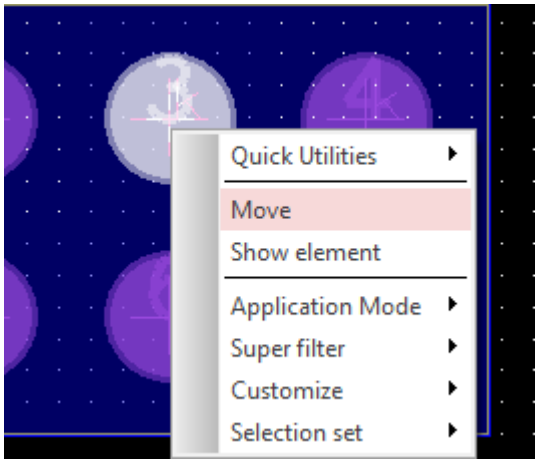
Place Pins for a Symbol

- 把Pin放到Package上
- Layout -> Pins 
- 從右邊的option選擇要用的Padstack
- Manually assign coordinate for accuracy
  - P : Pick Point 
  - A : Toggle Absolute /Relative Mode



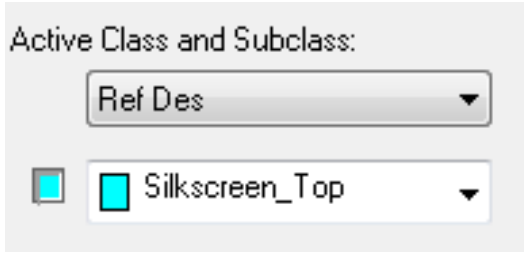
Modify Pins After Placement

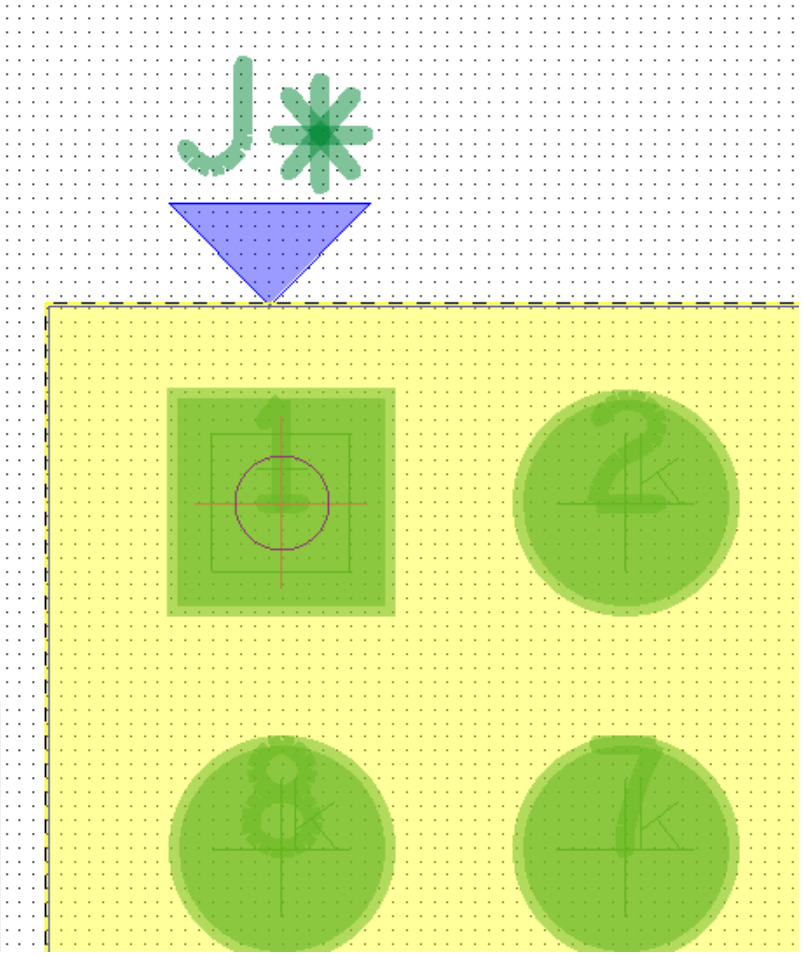
- 還有Rotation的角度(選完後再按一次 Layout -> Pins)
  - Use context menu to move, than use context menu again to rotate
- 還有最重要的Pin #
  - 要和capture上的腳位一模一樣
  - Use Edit text to change Pin # 



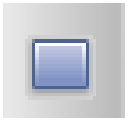
Assign Reference Designator (RefDes)

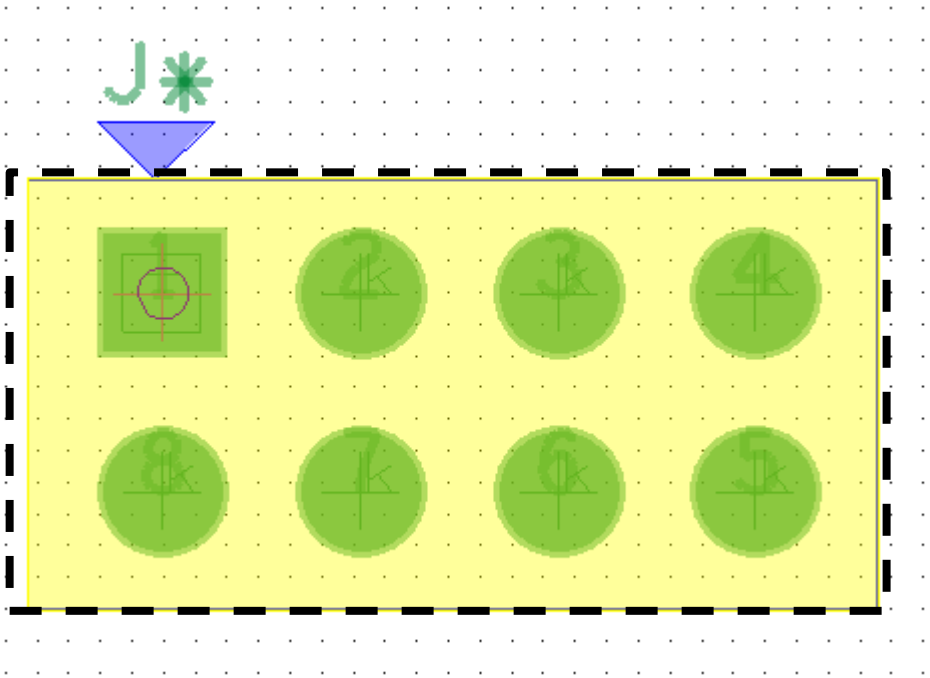
- 設定Device Type和Ref Des
- Add -> Text (任意字串 e.g. J*)
- 在右邊Option選擇 Device Type/ Silkscreen_Top放在第一個pin





Assign Package Boundaries

- 選擇Setup -> Areas -> Package Boudarys 後,選矩形  把整個元件包起來(Pin的部分)



Create Device File and Symbol (*.psm)

- 存檔: File -> Save
- 製作元件: File -> Create Device