

## E-CAD Data Exchange

### PRO-E - ECAD COMMON LIBRARY PART CONSTRUCTION

Help Files located under: ELECTRICAL DESIGN

Use the 09128 start part for all Clearwater common library parts.

Specify the part as Electrical (or Mechanical)

Tools --> Parameters

+ name: ECAD\_PART\_TYPE, string param, value: ELECTRICAL  
(or RMB in tree, Edit Parameters)

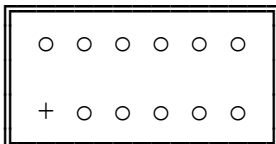
Construct board components and board mount connectors on the Z000-datum plane (front) projected in the +Z direction.  
Add a Coordinate System named ECAD\_DEFAULT with orientation as shown below

Tools --> Options

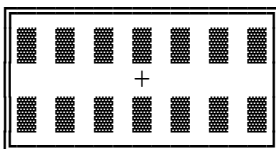
ecad\_comp\_csys\_def\_name = specify default coordinate system name when importing components  
ecad\_board\_csys\_def\_name = specify default coordinate system name when importing boards  
ecad\_mapping\_file = set to directory and file name using browse button (name: ecad\_hint.map)  
ecad\_comp\_layer\_map =yes = creates new layer for ecah component name

ecad\_export\_cuts\_as\_holes =  
ecad\_export\_holes\_as\_cuts =

Create a coordinate system at the PIN-1 position and named ECAD\_CSYS for thru-hole parts.



Coordinate system for surface mount components is the center of the part.



Y  
|  
Z---->X

ecad coordinate systems should be named ECAD\_DEFAULT

Z = coming out of the screen toward you  
X = pointing to the right  
Y = pointing upward

Consider constructing the part to allow suppressing high detail features to improve computer speeds.

Name the part:

Name: 56000000 (drawing) number system  
Title: CONNECTOR MDM-30  
Description: (Vendor) - Title (same as above) - Name (same as above)

Description is will be used for search functions.

All Name, Title, Description, etc shall be in UPPERCASE text. (ProE search is case sensitive)

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### ADDING KEEP-OUT AREA

Insert --> Cosmetic --> ECAD Area

- Regular Sec
- Place Keepout
- Done

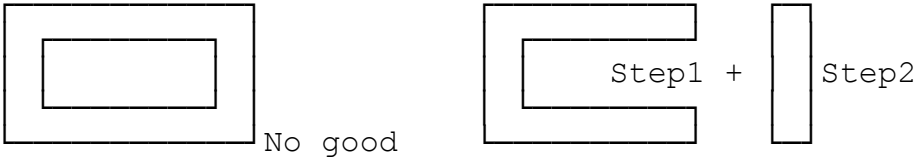
- Plane (select board surface)
- Direction -- OK

- SKET VIEW -- Default

References (as desired)

enters sketch mode

\* Do NOT create sketches inside other closed sketches. You may need to create a keepout using 2 steps.



### ADDING ROUTE OUTLINE

Insert --> Cosmetic --> ECAD Area

- Regular Sec
- Route Outline
- Done

Create the route outline by offsetting the board edge inward by .050  
Route Outline is a closed loop.

### Turn Off ECAD Cosmetics using Layers

Create a new LAYER

Name: COSMETIC\_PWB

Rules -> Options -> Independant

Options -> Associative

Edit Rules ->

■ Type

Comparison: is equal to

Category: All

Value: Cosmetic

### MISC

Analysis --> Model Analysis: volume interference check detects comp interf keepout

Assy after board import: Insert --> Shared Data --> From File \*.emp

Assign or Rename Reference Designator:

Edit --> Setup --> Name --> Component

Select component, Enter new name

Change Reference Designator Color, etc

Edit --> Setup --> Notes --> Modify (select ref desig)

Style - change color, move, etc (can't edit text)

### Display (and rename) Reference Designators in Tree

Settings --> Tree Columns

Type = ECAD Params, ECAD\_REF\_DES >> OK

### ECAD HINT FILE

ecad\_hint.map

# character is the comment character

Object and Values are separated by a space

Value strings may have spaces if string is enclosed in quotes

\* is wildcard character

each section begins with the purpose followed by "->" sections end with "end"

#### To Exclude Parts From Import or Export

Use an entry such as the following in the ecad\_hint.map file to exclude a part from import:

```
mcad_in_ignore ->  
ecad_name "resistor"  
ecad_alt_name "resistor_5k"  
ecad_type "part"  
ref_des "*" "  
END
```

To exclude a part from export, use an entry such as the following in the ecad\_hint.map file:

```
mcad_out_ignore ->  
mcad_name "HEAT_SINK"  
mcad_type part  
ref_des "HS1"  
END
```

### IMPORTED BOARD ASSEMBLY

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#### Show or Hide Reference Designators

```
Tools --> Environment  
[ * ] Reference Designators  
OK
```

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### ECAD BOARD EXCHANGE PROCESS

Add a coordinate system named ECAD\_CSYS to the board

When sending ecad files to Expedition, change "PIN" to "MTG"

Mentor Hole sizes are metric and need to be sized slightly larger than Mentor drill sizes.

Keep-In cosmetics don't work in Expedition. Use only Keep-Out areas.

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```
IDF3.0  
Board  
Ecad-csys ECAD_DEFAULT
```