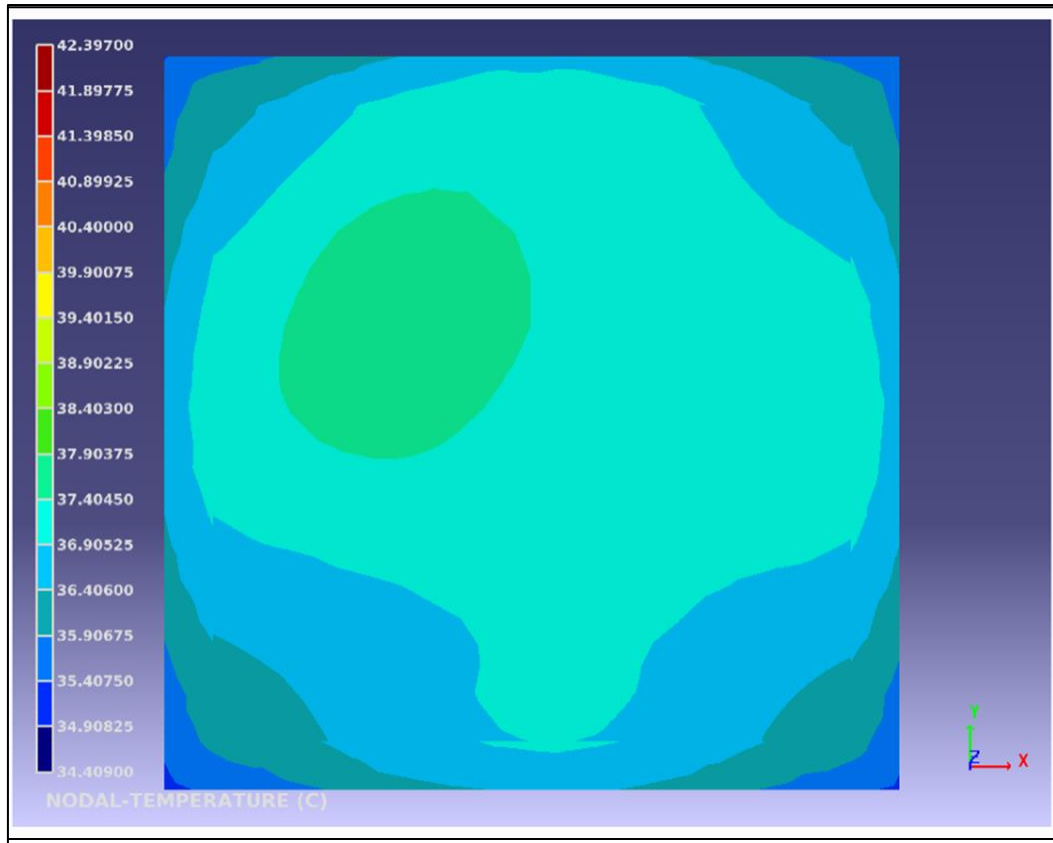


Dump Thermal Image and Report By TCL Command

2022/10/27



1. Dump Contour Image By Tcl Command



Support Tcl command

- Select object
- Select contour
- Fit all
- Save image

Change Map configuration

- background color
- fonts size / fonts color to white
- value digit number
- contour range Min/Max
- color range step

Notice:

Only Top view is supported.

1. Dump Contour Image By TCL Command

- **3D Postprocessing**

analysis simulation control -name <model> -image postpro -start -size <width height> -bgcolor <color> -textcolor <color> -precision <num>

analysis simulation control -name <model> -image postpro -contour

<Temperature|Heatflux|XHeatflux|YHeatflux|ZHeatflux|Displacement|XDisplacement|YDisplacement|ZDisplacement|Current|XCurrent|YCurrent|ZCurrent|Voltage|Stress|ModelOnly>

analysis simulation control -name <model> -image postpro -range <auto|max min>

analysis simulation control -name <model> -image postpro -show <all|objects name>

analysis simulation control -name <model> -image postpro -o <file> -view <top|bottom|front|back|left|right|SE> ?-showname? ?-showmaxmin <Color>?

analysis simulation control -name <model> -image postpro -maxmin_report <report file>

analysis simulation control -name <model> -image postpro -end

- **TCL examples:**

analysis simulation control -name TI2_hole -image postpro -start -size 600 700 -bgcolor 0 255 255 -textcolor 0 0 0 -precision 6

analysis simulation control -name TI2_hole -image postpro -contour temperature

analysis simulation control -name TI2_hole -image postpro -range 21 21.5

analysis simulation control -name TI2_hole -image postpro -show PKG_Top -view se -o /my_folder/Neu21.png -showname

analysis simulation control -name TI2_hole -image postpro -contour XHeatFlux

analysis simulation control -name TI2_hole -image postpro -show all -view top -o my_folder /Neu31.png -showMaxMin 0 0 255

analysis simulation control -name TI2_hole -image postpro -maxmin_report / my_folder /maxmin.txt

analysis simulation control -name TI2_hole -image postpro -end

2. Dump Image With A defined Region

Support

- measure min/max value in the user specified region, report out the values, add marker at the min/max locations
- measure user specified points, report the values.
- plot the region and add marker at the user points.

Notice:

The region is on 2D XY plane, so user firstly need to do a section cut along Z axis.

• 3D Postprocessing

analysis simulation control -name <model> -image postpro -region <llx lly llz urx ury urz | clear> ?-showValue? ?-color <r g b>?

analysis simulation control -name <model> -image postpro -probe <name x y z | clear> ?-showValue? ?-color <r g b>?

• TCL examples

analysis simulation control -name TI2_hole -image postpro -start -size 700 700 -bgcolor 0 255 255 -textcolor 0 0 0 -precision 3

analysis simulation control -name TI2_hole -image postpro -SectionView -Zplane 1.1

analysis simulation control -name TI2_hole -image postpro -show Die

analysis simulation control -name TI2_hole -image postpro -region 17.168 -7.219 1.1 23.168 -1.219 1.1 -color 0 0 0

analysis simulation control -name TI2_hole -image postpro -probe N2 19.168 -6.219 1.1 -showValue

analysis simulation control -name TI2_hole -image postpro -view top -o /my_folder /Neu7.png

3. Dump Region Report

TCL of exporting region report file:

analysis simulation control -name <model> -image postpro -region_report <file>

**analysis simulation control -name <model> -image postpro -region_report <file> -selected component1
component2**

For example:

```
analysis simulation control -name TI2_hole -image postpro -start -size 700 700 -bgcolor 0 255 255 -textcolor 0 0 0 -precision 3
```

```
analysis simulation control -name TI2_hole -image postpro -SectionView -Zplane 1.1
```

```
analysis simulation control -name TI2_hole -image postpro -show Die
```

```
analysis simulation control -name TI2_hole -image postpro -region 17.168 -7.219 1.1 23.168 -1.219 1.1 -color 0 0 0
```

```
analysis simulation control -name TI2_hole -image postpro -probe N2 19.168 -6.219 1.1
```

```
analysis simulation control -name TI2_hole -image postpro -region_report /my_folder/123.txt --selected
```

```
123.txt (~/.dump) - GVIM
File Edit Tools Syntax Buffers Window Help
#Contour
NODAL-TEMPERATURE (C)
#Region: llx lly llz urx ury urz
17.168000 -7.219000 1.200000 23.168000 -1.219000 1.200000
#MaxT: x y z T
19.167999 -4.219000 1.200000 22.013500
#MinT: x y z T
17.428000 -1.219000 1.200000 21.999174
#DT
0.014326
#ProbePointList: x y z T
19.168000 -4.219000 1.200000 22.013500
19.168000 -6.219000 1.200000 22.002238
#ProbePointMaxT: x y z T
19.168000 -4.219000 1.200000 22.013500
#ProbePointMinT: x y z T
19.168000 -6.219000 1.200000 22.002238
#ProbePointDT
0.011262
~
~
~
~
"~/dump/123.txt" 19L, 497C 4,57 All
```

Region Report for Selected Components

```
analysis simulation control -name TI1_ThermalOnly_Static -image postpro -start
analysis simulation control -name TI1_ThermalOnly_Static -image postpro -region -2 -2 2.3 2 2 2.3 -color 0 0 0
analysis simulation control -name TI1_ThermalOnly_Static -image postpro -probe N1 -0.5 -0.4 2.3
analysis simulation control -name TI1_ThermalOnly_Static -image postpro -probe N2 0.6 -0.5 2.3
analysis simulation control -name TI1_ThermalOnly_Static -image postpro -probe N3 -1 -0.5 2.3
analysis simulation control -name TI1_ThermalOnly_Static -image postpro -probe N4 0.95 -1 2.3

analysis simulation control -name TI1_ThermalOnly_Static -image postpro -region_report
/nfs/sjocpspe1.data/ssoqa/ti_3dic_thermal/demo/22R2Release/TI_Test_TCL/region_selected.txt -selected Die3 Die4
```

```
1 #Contour
2 NODAL-TEMPERATURE (C)
3 #Region: llx lly llz urx ury urz
4 -2.000000 -2.000000 2.300000 2.000000 2.000000 2.300000
5 #Components in Region
6 PCB_METAL4 PCB_VIA3 PCB_METAL3 PCB_VIA2 PCB_METAL2 PCB_VIA1 PCB
  Bump_1 Die_Bump_2_DFilling Die_Bump_2 Die_Bump_3_DFilling Die_B
7 #Selected Components
8 Die3 Die4#MaxT: Component x y z T
9 Die4 0.769950 -0.621190 2.300000 197.861772
10 #MinT: Component x y z T
11 Die3 -1.212000 -1.228000 2.300000 192.953722
12 #DT
13 4.908051
14 #ProbePointList: Component x y z T
15 die3 -0.500000 -0.400000 2.300000 196.037203
16 die4 0.600000 -0.500000 2.300000 197.106740
17 die3 -1.000000 -0.500000 2.300000 195.679537
18 die4 0.950000 -1.000000 2.300000 194.631051
19 #ProbePointMaxT: Component x y z T
20 Die4 0.600000 -0.500000 2.300000 197.106740
21 #ProbePointMinT: Component x y z T
22 Die4 0.950000 -1.000000 2.300000 194.631051
23 #ProbePointDT
24 2.475689
```

4. Dump Node Information Report

analysis simulation control -name <model> -image postpro -start

analysis simulation control -name <model> -image postpro -node_report <report file> -contourlist Displacement/Stress -component <component name list>

Example:

analysis simulation control -name TI1_ThermalStress -image postpro -start

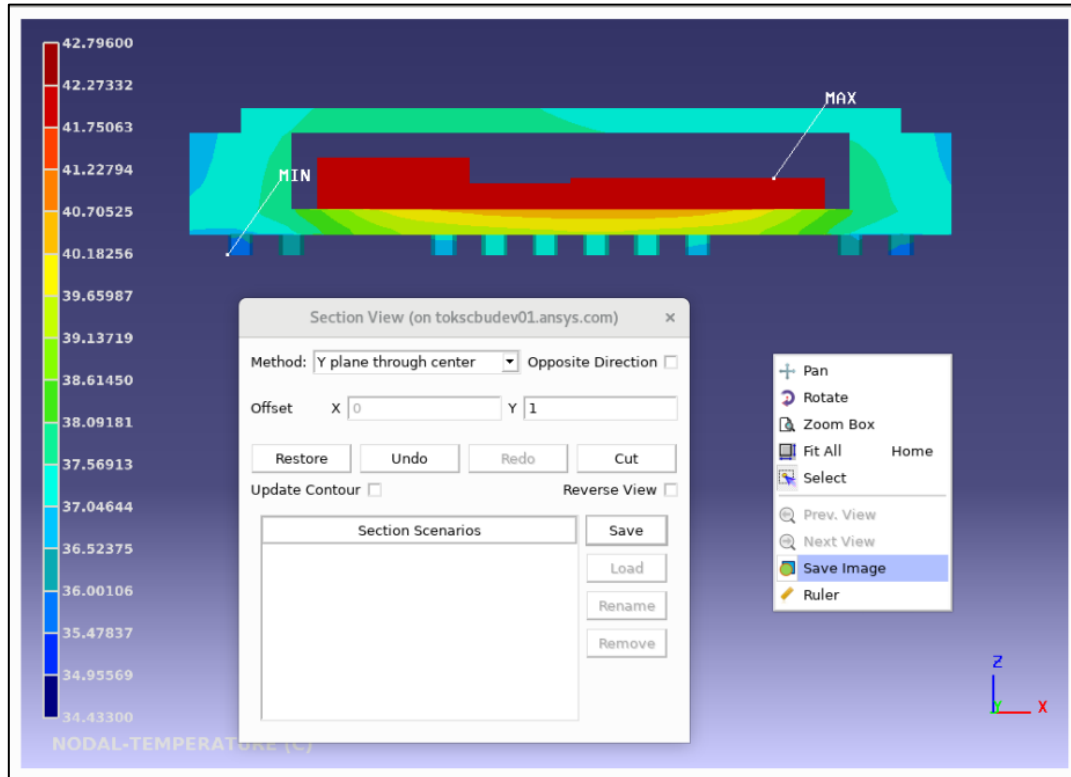
analysis simulation control -name TI1_ThermalStress -image postpro -node_report / my_folder /Displacement.txt -contourlist Displacement -component Die4

```
1 #component name, node account
2 Die4, 7212
3 #node ID, X Y Z coordinates, Displacement
4 172583 -0.797570 0.787205 2.017000 0.002896
5 172584 0.877430 -0.914415 2.017000 0.003229
6 172585 0.867430 -0.914415 2.017000 0.003225
7 172586 0.872430 -0.915755 2.017000 0.003228
8 172587 0.881090 -0.910755 2.017000 0.003228
9 172588 0.863770 -0.910755 2.017000 0.003221
10 172589 0.863770 -0.900755 2.017000 0.003215
11 172590 0.862430 -0.905755 2.017000 0.003218
12 172591 0.881090 -0.900755 2.017000 0.003223
13 172592 0.882430 -0.905755 2.017000 0.003226
14 172593 0.867430 -0.897095 2.017000 0.003215
15 172594 0.877430 -0.897095 2.017000 0.003219
16 172631 -0.830960 -0.679390 2.017000 0.003007
17 172632 0.667700 -0.674390 2.017000 0.003059
18 172633 0.650380 -0.674390 2.017000 0.003057
19 172634 0.667700 -0.684390 2.017000 0.003062
20 172635 0.664040 -0.688050 2.017000 0.003063
21 172636 0.654040 -0.688050 2.017000 0.003062
22 172637 0.659040 -0.689390 2.017000 0.003063
23 172638 0.664040 -0.670730 2.017000 0.003058
```

Notice:

Both of the contour and the component can be a list, not limited to a single one.

5. Dump Cross-Section View Image



Support Tcl command

- Select object
- Select contour
- Fit all
- Set section view, Method, X/Y offset and view direction.
- Save image

Change Map configuration

- background color
- White out the AIR material objects
- fonts size / fonts color to white
- value digit number
- contour range Min/Max, &color range step

5. Dump Cross-Section View Image

- **Section View:**

analysis simulation control -name <model> -image postpro -SectionView -undo/-redo/-restore

analysis simulation control -name <model> -image postpro -SectionView -Xplane <Xcoordinate> (-oppositeV)

analysis simulation control -name <model> -image postpro -SectionView -Yplane <Ycoordinate> (-oppositeV)analysis simulation control -name <model> -image postpro -SectionView -ABC <A B C> (-oppositeV)

analysis simulation control -name <model> -image postpro -SectionView -TwoPoints <point1X point1Y point2X point2Y> (-oppositeV)

analysis simulation control -name <model> -image postpro -SectionView -PointNormal <pointX pointY normalX normalY> (-oppositeV)

analysis simulation control -name <model> -image postpro -SectionView -Zplane <Zcoordinate> (-oppositeH)

- **TCL Examples:**

analysis simulation control -name TI2_hole -image postpro -SectionView -restoreanalysis simulation control -name TI2_hole -image postpro -SectionView -PointNormal 1.1 2.2 3.3 4.4analysis simulation control -name TI2_hole -image postpro -SectionView -ABC 1.1 2.2 3.3 -oppositeV

analysis simulation control -name TI2_hole -image postpro -SectionView -Zplane 0.5

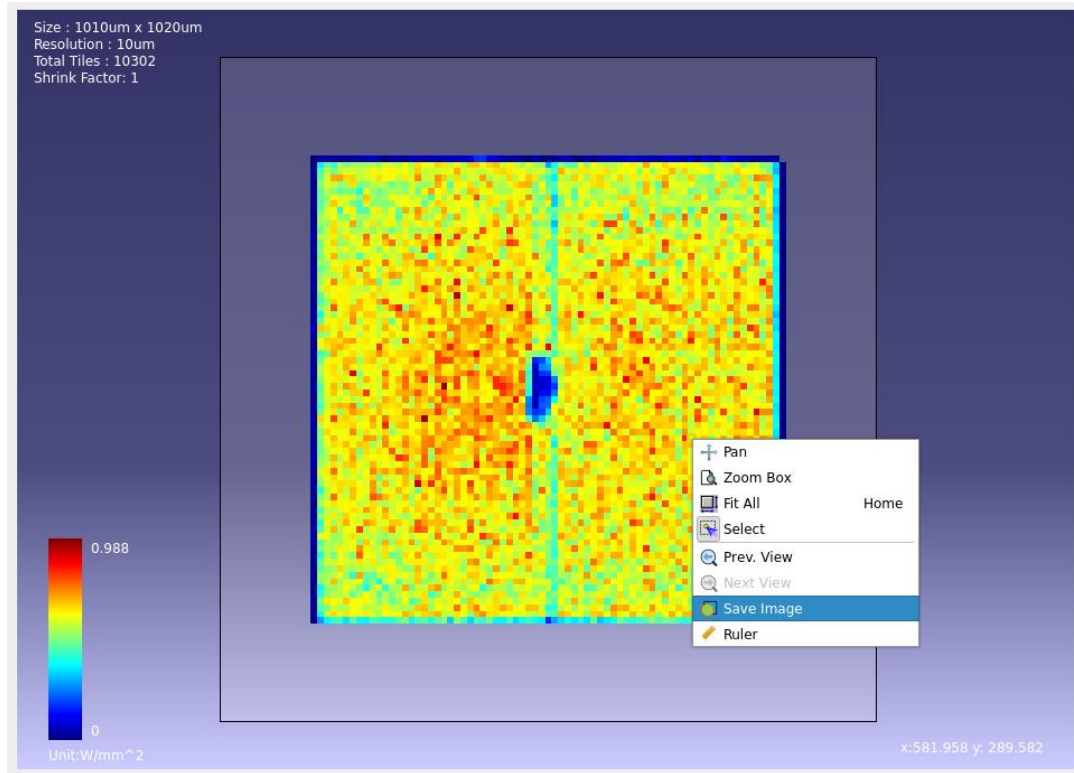
analysis simulation control -name TI2_hole -image postpro -SectionView -Zplane 0.5 -oppositeH

analysis simulation control -name TI2_hole -image postpro -SectionView -Xplane 3.3 -Zplane 0.5

analysis simulation control -name TI2_hole -image postpro -SectionView -TwoPoints 1.1 2.2 3.3 4.4 -Zplane 0.5 -oppositeH

analysis simulation control -name TI2_hole -image postpro -SectionView -Yplane 2.2 -oppositeV -Zplane 0.5 -oppositeH

6. Dump CTM Image By TCL Command



Support Tcl command

- Select CTM object
- Fit all
- Save image

Change Map configuration

- background color
- fonts size & color
- Total Power value for imported CTM
- Change PD range max/min values, number of digit
- Fully display value Unit
- Disable cursor location X:/Y:

6. Dump CTM Image By TCL Command

- **CTM View:**

`ctm view ctrl -model name -fitall`

`ctm view ctrl -model name -showcursorlocation true/false`

`ctm view ctrl -model name -range {min, max}`

`ctm view ctrl -model name -bgcolor reset`

`ctm view ctrl -model name -bgcolor { r, g, b }/{ r, g, b, r, g, b }(range 0-255) -vertical true/false(optional)`

`ctm view ctrl -model name -font -color { r, g, b }`

`ctm view ctrl -model name -font -size size`

`ctm view ctrl -model name -precision precision`

`ctm view export -model name -file filename`

- **TCL Examples:**

`ctm view ctrl -model ctm_1w -fitall`

`ctm view ctrl -model ctm_1w -showcursorlocation true`

`ctm view ctrl -model ctm_1w -range {0, 0.8}`

`ctm view ctrl -model ctm_1w -bgcolor reset`

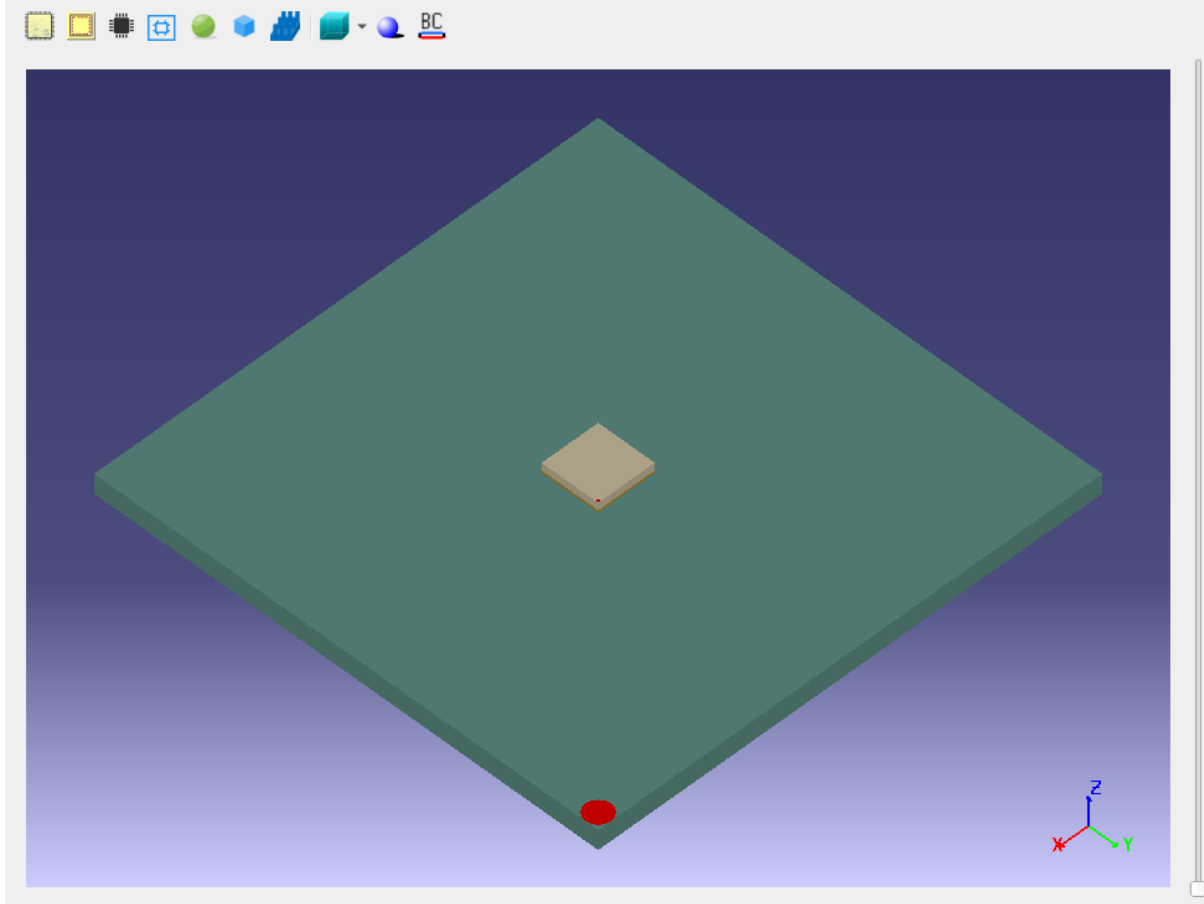
`ctm view ctrl -model name -bgcolor { 0,255,255}`

`ctm view ctrl -model name -font -color { 255,255,255 }`

`ctm view ctrl -model name -precision 6`

`ctm view export -model name -file /my_folder/ctm_1w.png`

7. Dump Model Image By Tcl Command



Support Tcl command

- Select analysis object
- Fit all
- Save image

Change Map configuration

- background color

7. Dump Model Image By TCL Command

- **Assembly View**

analysis simulation control -name <model> -image assembly -start -size <width height> -bgcolor <color(r g b (0~255))>

analysis simulation control -name <model> -image assembly -show <all|objects name>

analysis simulation control -name <model> -image assembly -o <file> -view <top|bottom|front|back|left|right|SE> ?-showname?

analysis simulation control -name <model> -image assembly -end

- **TCL examples:**

analysis simulation control -name TI2_hole -image assembly -start -size 600 600 -bgcolor 255 255 255

analysis simulation control -name TI2_hole -image assembly -show PKG

analysis simulation control -name TI2_hole -image assembly -view Top -showname -o / my_folder /PKG1.png

analysis simulation control -name TI2_hole -image assembly -show all

analysis simulation control -name TI2_hole -image assembly -view front -o /my_folder/all.png

analysis simulation control -name TI2_hole -image assembly -end

 **Ansys**

