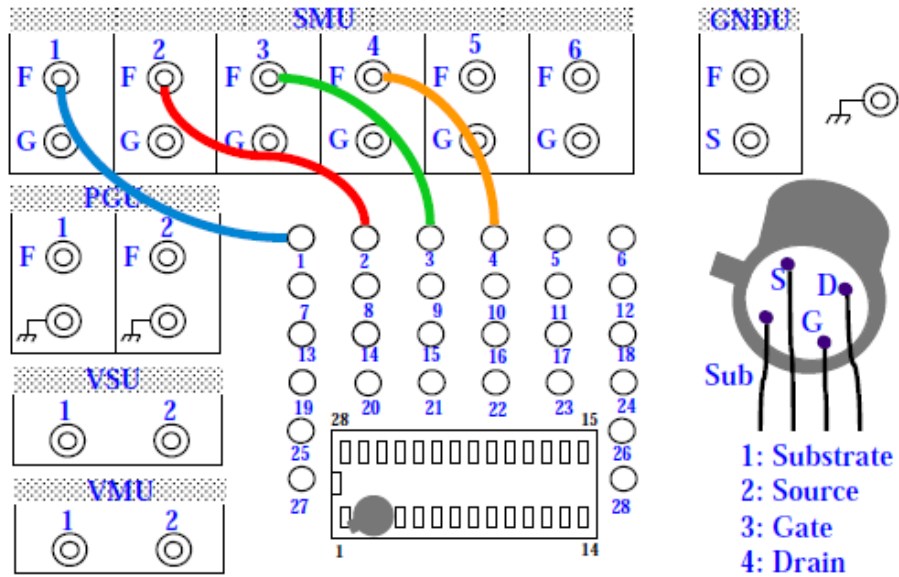The following contents is part of B1500_training3.pdf doc. Original doc can be obtained from GOOGLE.
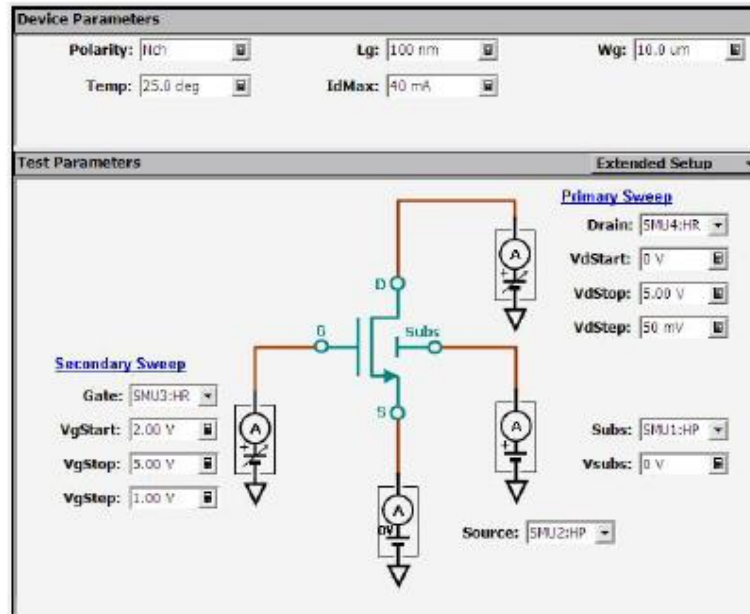
Jumper Leads – MOS transistor

For all class exercises, you need the 28-pin dual in line socket which comes standard with the 4145 fixture (16058A) or the newer fixture (16442A/B). Either fixture works fine.

With the 16442A/B fixture, note that there are two SMU numbering schemes....3 SMUs with force and sense, or six SMUs with force only. For this class example we will use the six (6) SMU scheme. On older fixtures, this scheme is shown in light blue lettering. In newer fixtures, this scheme is shown in white reverse background lettering.

Application Test

Device Parameters

Polarity: Nch	Lg: 100 nm	Wg: 10.0 um
Temp: 25.0 deg	IdMax: 40 mA	

Test Parameters — Extended Setup

Primary Sweep
- Drain: SMU4:HR
- VdStart: 0 V
- VdStop: 5.00 V
- VdStep: 50 mV

Secondary Sweep
- Gate: SMU3:HR
- VgStart: 2.00 V
- VgStop: 5.00 V
- VgStep: 1.00 V

- Subs: SMU1:HP
- Vsubs: 0 V

- Source: SMU2:HP

Recall Id-Vd application test setup data.

After you get the Id-Vd setup data, you will see the Application Test setup screen as shown.

Test Parameters area shows the device connection information and allows the user to set the SMU outputs.

Device Parameters area allows the user to set device parameters. In the Id-Vd setup, the device parameters are polarity, gate length, gate width, temperature, and maximum drain current.

Extended Setup button opens the Extended Setup dialog box shown in the next page.

Clicking the Extended Setup button opens …

The Extended Setup dialog box allows the user to set the additional test setup parameters. In the Id-Vd setup, the additional parameters are source voltage, maximum gate current, maximum substrate current, integration time, hold time, and delay time.
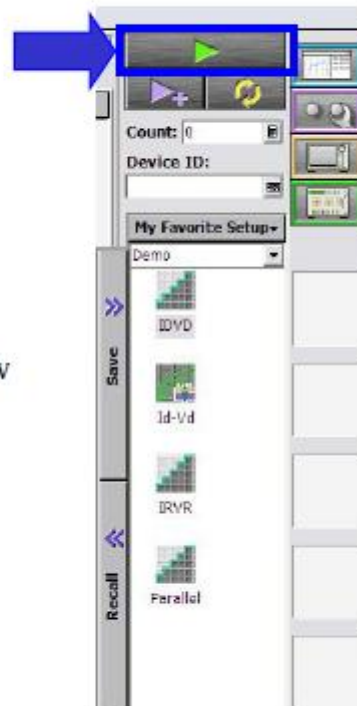
To Start Measurement

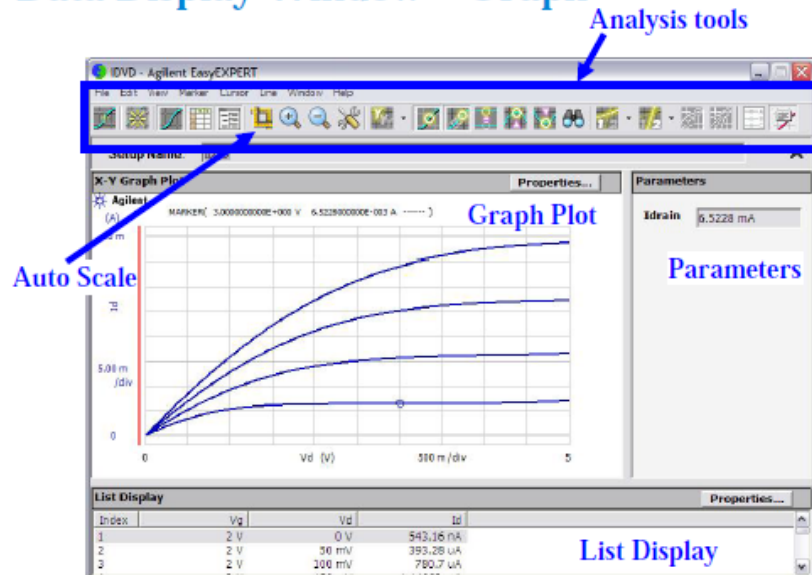1. Click Single button

   This opens the Data Display window and starts measurement.

   The Data Display window shows measurement result data graph/list.

Data Display Window – Graph

This window displays measurement result graph, list, and parameter values.

Markers are used to traverse the actual measurement data. Markers cannot be placed anywhere on the screen except on an actual measurement trace. They are denoted with a small circle. One moves the markers with the front panel rotary pulse generator (RPG) knob, mouse, or touch screen.

Cursor may be used anywhere on the screen and are denoted by a small cross. The cursor is moved using mouse, touch screen, or an arrow key.

The line function may be selected to draw one of four types of lines: line between cursors, gradient line, tangent line, regression line.

One of the most used interactive functions on this window is the autoscale feature which is applied by clicking the icon of yardsticks.

Data Display Window - List
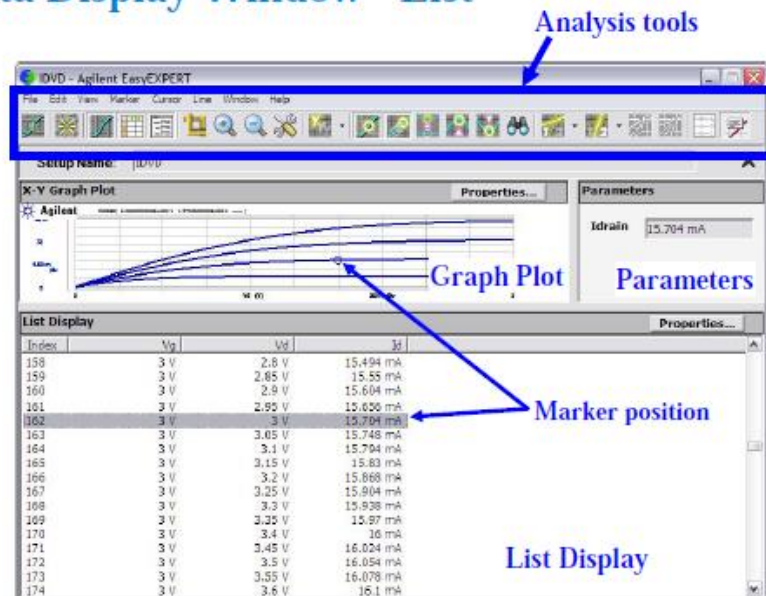
The List Display corresponds exactly with the Graph Plot. Even the highlighted line of data corresponds to the marker position on the Graph Plot.

Up to twenty columns of data can be set on the List Display. Note that the Graph Plot can only plot nine columns (X, Y1 to Y8).

The list data can be copied to a spreadsheet software easily. Click Edit > Copy List. This copies all of the list data into the clipboard.
On the Notepad, paste it and save it as a text file. The file can be opened as a tab separated value data by using a spreadsheet software. See the next page.

The details of the analysis tools function are discussed in Module3.