# Figure 16

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IBIS ATM

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Figure 16 in IBIS describes in a very general way how a Device Under Test (DUT) is connected to the TEST FIXTURE. It does not do a very good job of distinguishing between rail voltages under test vs rail terminals for a Device In Action (DIA). And the section is very confusing on how to hook up C_comp for compensation for DUT data and how to hook up C_comp when DIA (rail voltages floating and not constant).
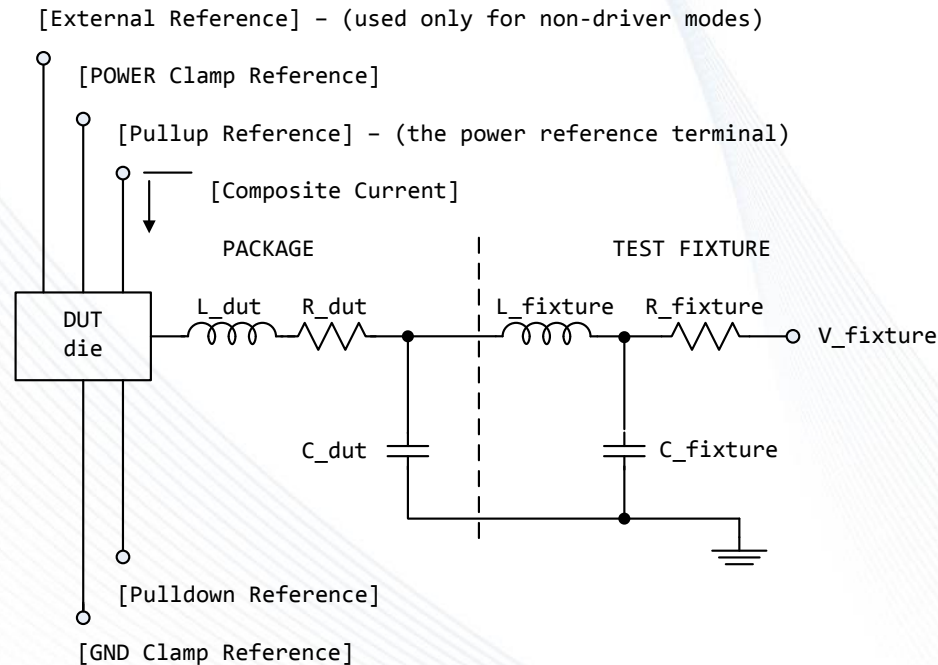
Virtual Test Bench

The most common case in IBIS is "Legacy"

> [Pulldown Reference]==[GND Clamp Reverence]==0.0V
>
> [POWER Clamp Reference]==[Pullup Reference]==[Voltage Range]

The second most common case in IBIS is ECL

> [GND Clamp Reverence]=="Data Book VEE"
>
> [POWER Clamp Reference]==[Pullup Reference]== [Pulldown Reference]="Data Book VCC"

Focusing on these two most common cases, what does this look like when measuring the device (DUT) to generate the model and using the model for a device in action?

I built a "Virtual Test Bench" to represent the measurement one would do on a real Device Under Test and on a Device In Action (DIA). I put probes at location where one can actually make measurement in real hardware (although it is much easier to put SPICE probes in a virtual test bench then to instrument the real hardware).

It is also possible to put probes in a virtual test bench that are impossible to instrument in hardware (unnatural acts) and are in fact meaningless measurements (e.g. a differential probe between a die terminal and the reference voltage of a VRM 3 feet away).

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The most common case in IBIS is "Legacy"
        [Pulldown Reference]==[GND Clamp Reverence]==0.0V
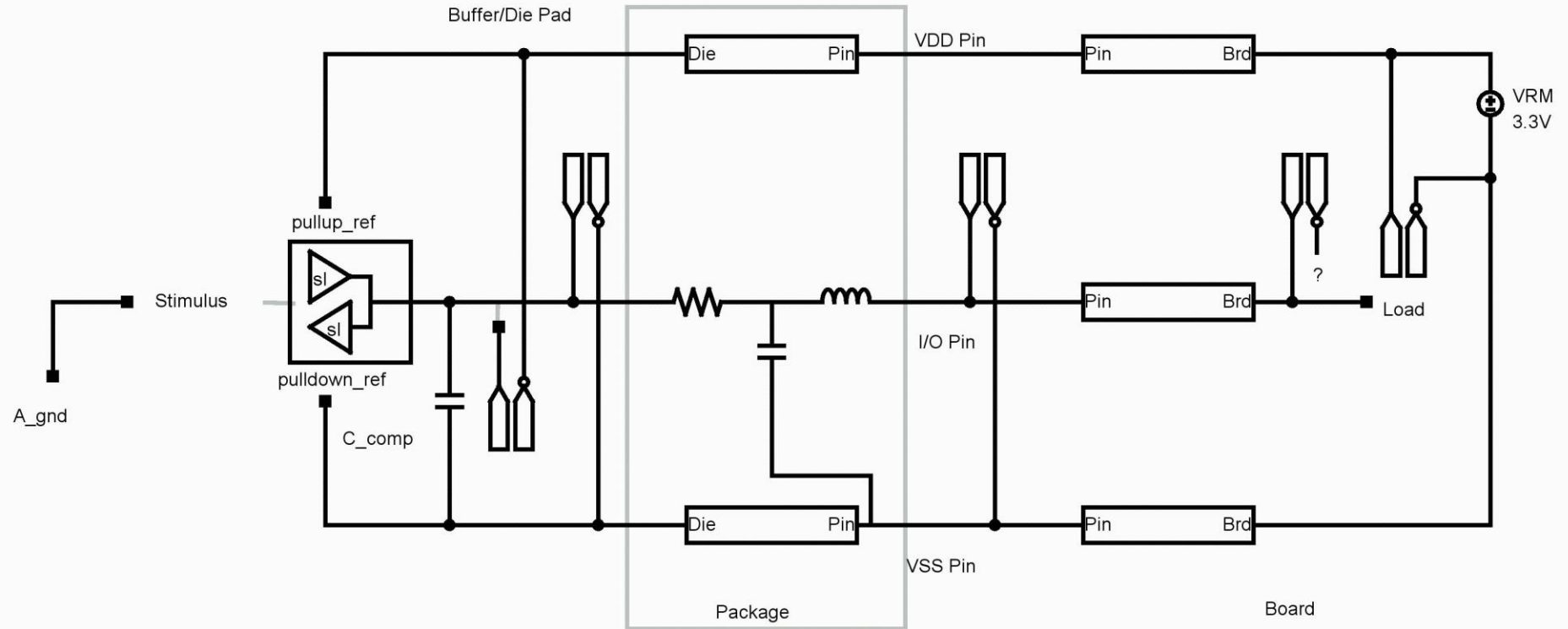   [POWER Clamp Reference]==[Pullup Reference]==[Voltage Range]
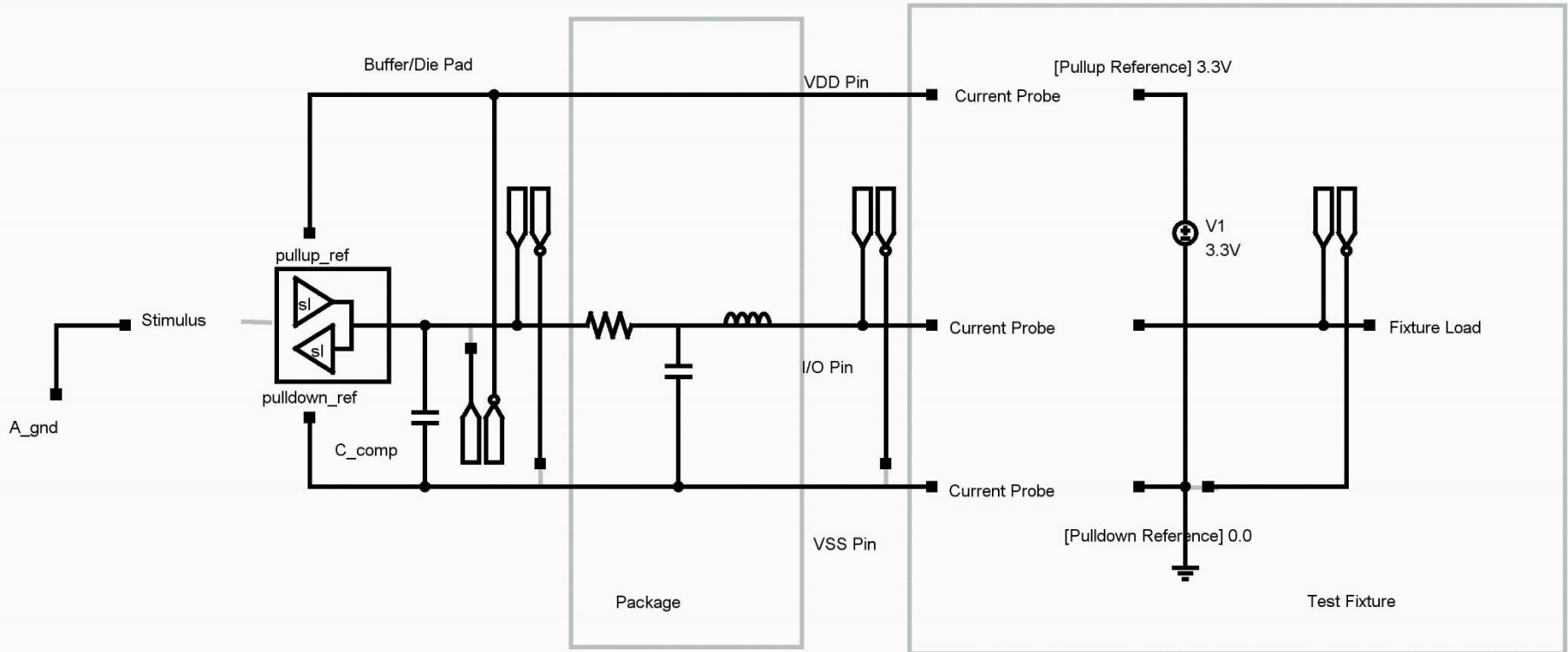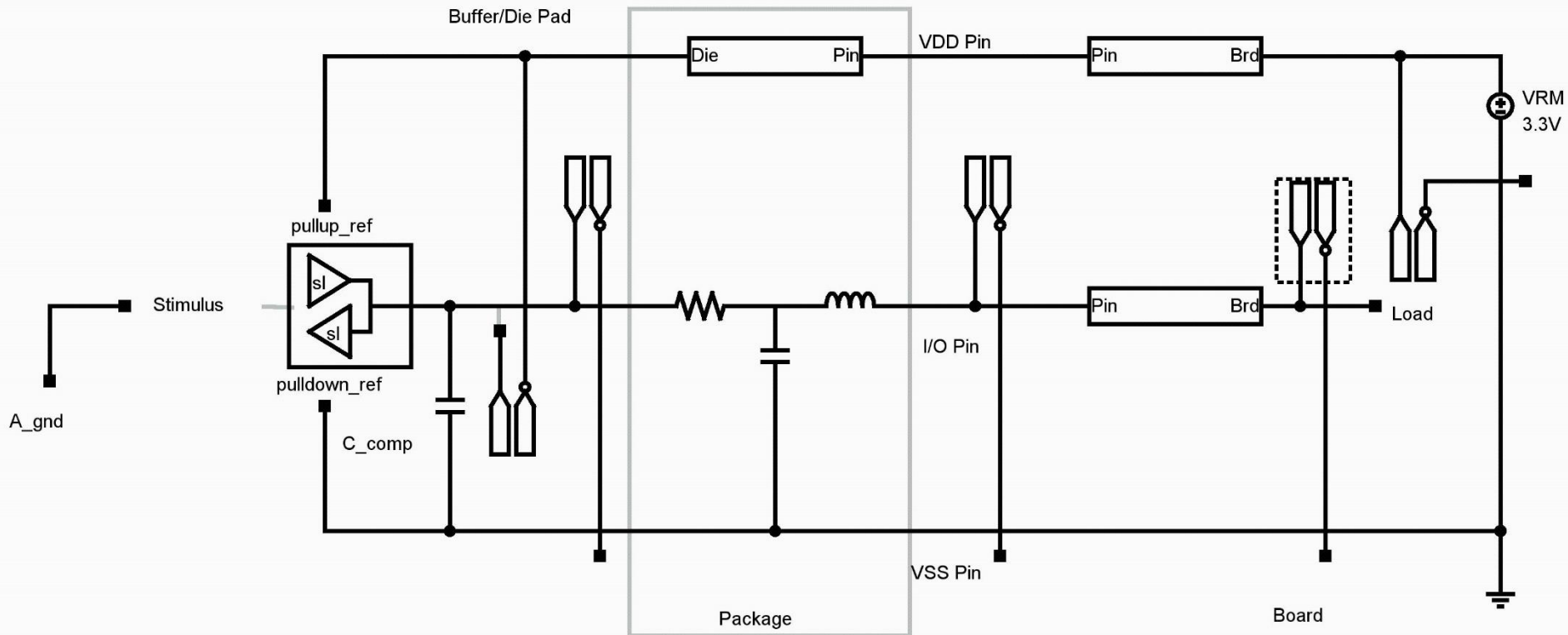

Legacy Device Under Test

Legacy Device in Action

What is the range of measurements at the I/O Pin?
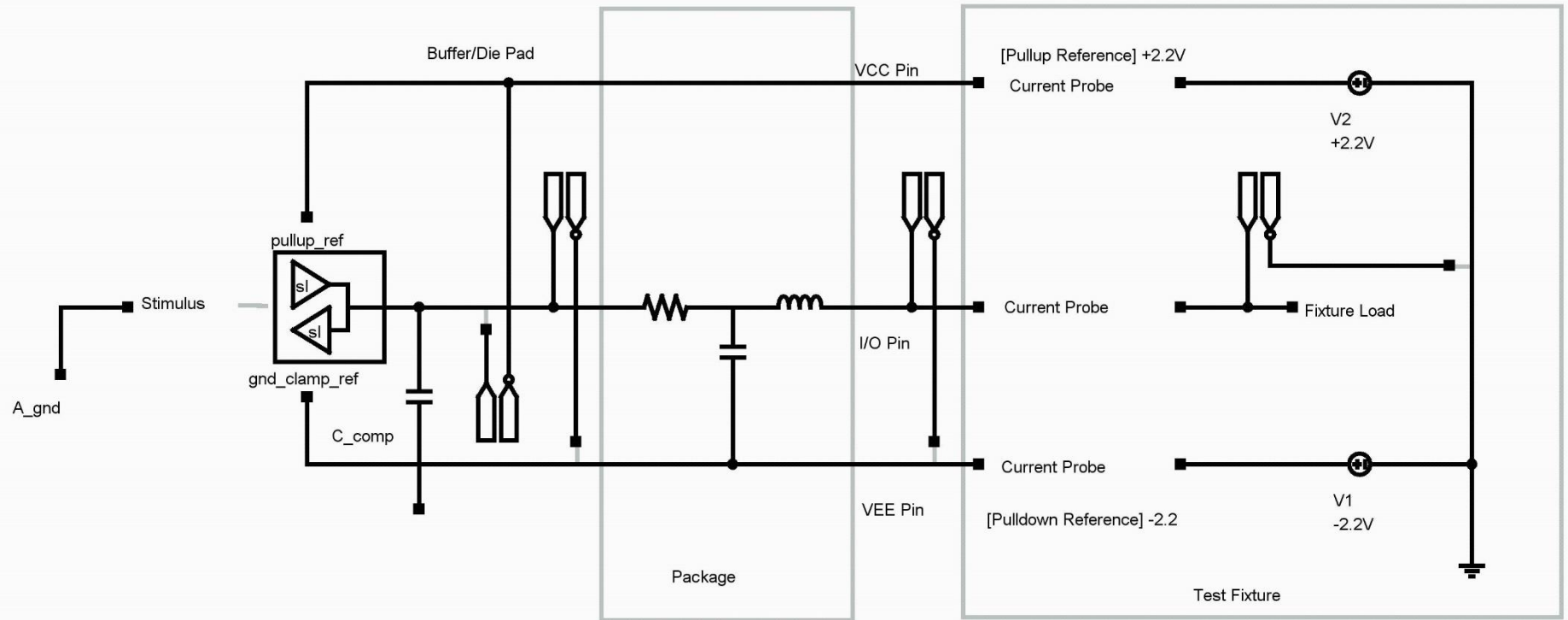
Legacy Device in Action
Ground Referenced System

The second most common case in IBIS is ECL
    [GND Clamp Reverence]=="Data Book VEE"
    [POWER Clamp Reference]==[Pullup Reference]== [Pulldown Reference]="Data Book VCC"

ECL Device Under Test

ECL Device In Action
What is the range of measurements at the I/O Pin?

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