Introduction

Date: 17-04-97

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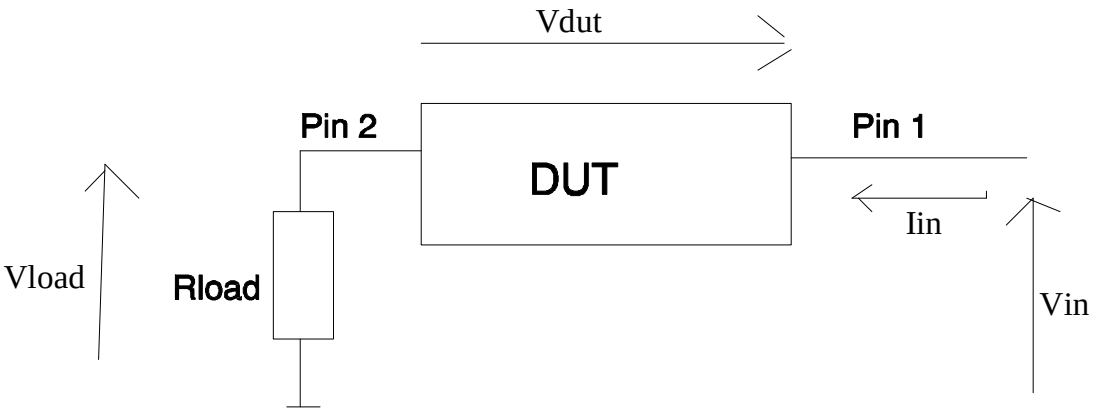
Subject: Submission for IBIS teleconference on 18-04-97 re BIRD 41.1

This document has been very quickly put together on a Thursday evening in France, hoping that people in the States will have time to read and comment on it before Friday's meeting :-)

I want to justify the need for a Rload in Bird 41.1.
The measurement setup for series impedance is:



Vin and Iin are the values given in [Series Impedance]

Any data sheet for bus-switches will show two figures:

1. Vin vs Vout, measure for different values of Rload
2. Rs (series resistance) vs Vin
   To measure this, need to set Rload>10 x Rs(Vin=1V)
   *Rs=Vdut/Iin, and Vdut=Vin-Iin*Rload.*

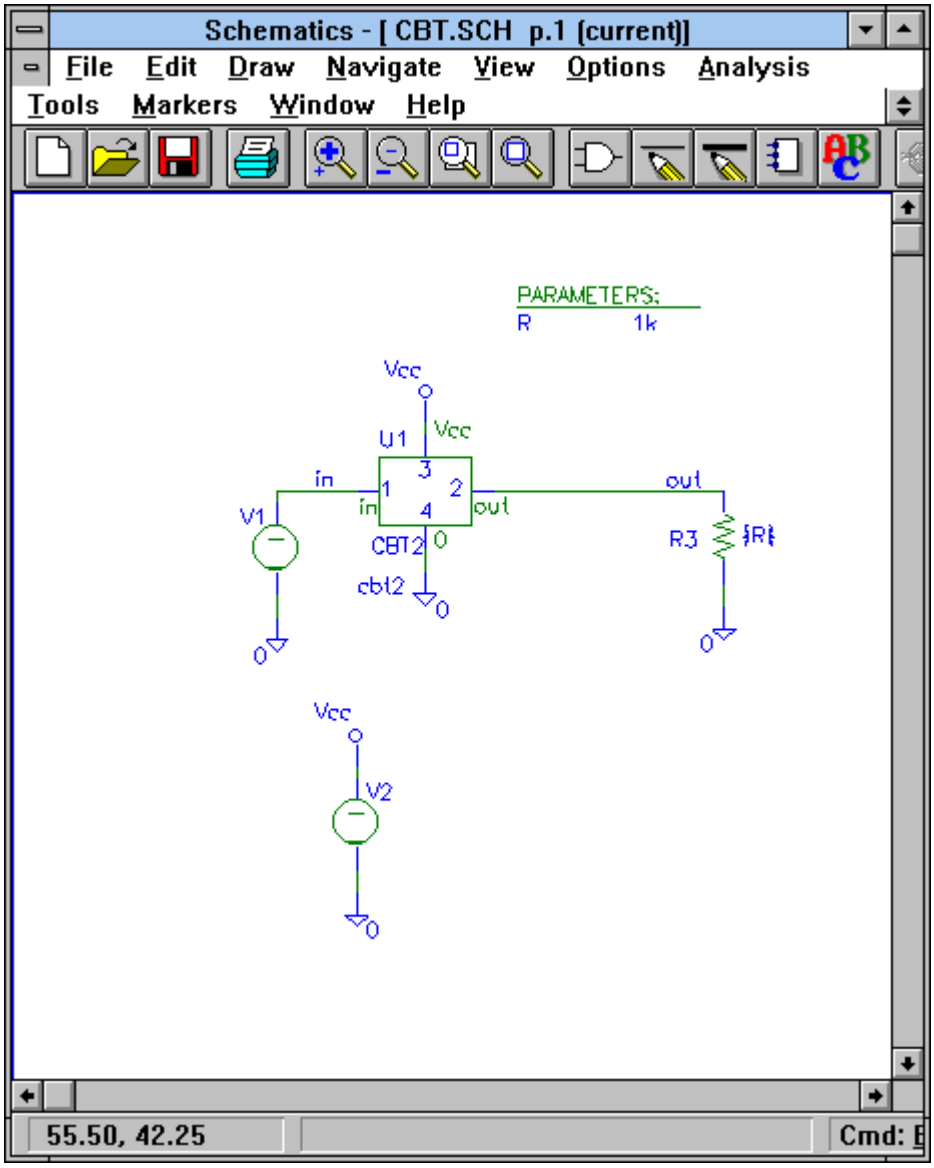
About 2 months ago, I tried to model a bus-switch using PSPICE, assuming that the only information I had was these two curves. Since then I've not had time to return to the simulations. But in case I was doing anything right, I'm sending the schema, model, and results below.

Sorry no comments, or explanations.....

I hope this gives some ideas to someone. I really would like to know what's the minimum information that needs to be put into IBIS to build a good behavioral model.

'Til Friday,
John

Schematic


Schematics - [CBT.SCH p.1 (current)]
File Edit Draw Navigate View Options Analysis
Tools Markers Window Help
PARAMETERS:
R 1k
Vcc
U1
Vcc
3
in
1
2
out
in
4
out
V1
CBT2
0
cbt2
0
out
R3
{R}
0
Vcc
V2
0
55.50, 42.25
Cmd:

CBT model

```
.subckt CBT2 in out vcc gnd

Es in out2 value={ v(y,gnd) - min(v(vcc)-v(in),v(vcc)-v(out)) }
```

Table Ey is a measure of Vin vs. Vout, measured for an infinite load.

```
Ry y gnd 10MEG
Ey y gnd TABLE {min((v(vcc)-v(in)),(v(vcc)-v(out)))} =
+ 0       1.2
+ 0.1     1.2
+ 0.9     1.1
+ 1       1
+ 2       2
+ 3       3
+ 4       4
+ 5       5

Gs out2 out value={v(out2,out)/v(z,gnd)}
```

Table Ez is a measure of series resistance vs. (Vin-Vcc), measured for a large load (e.g) 1kohm.

```
Rz z gnd 10MEG
Ez z gnd TABLE {min((v(vcc)-v(out2)),(v(vcc)-v(out)))} =
+ 0      30
+ 1.0    30
+ 1.5    16
+ 2.5     8
+ 3.5     6
+ 4.5     5
+ 5       4
+ 6       4
.ends
```

Simulation Results