**IBIS model verification of PI6ULS5V9517B**

**Introduction: to verify the correlation between the ibis model and hspice model, we need to do some simulations:**

1. **Netlist simulation V.S. IBIS simulation on A-side:**

PI6ULS5V9517B

**VOUT**

**SCL\_C**

**SDA\_C**

**Input Signals**

**SCL\_C**

**SDA\_C**

**VIN**

**SCL\_C**

**SDA\_C**

SDAA

**SCL\_C**

**SDA\_C**

SDAB

**SCL\_C**

**SDA\_C**

**…..**

**SCL\_C**

**SDA\_C**

VDDA

**SCL\_C**

**SDA\_C**

R=1kOhm

**SCL\_C**

**SDA\_C**

C=50pF

**SCL\_C**

**SDA\_C**

1. Simulation **without** package data;
2. Simulation **with** package data.
3. VDDB=3.3V, VDDA=0.95V, R=1K, CL=50p, frequency = 400k;
4. VDDB=3.3V, VDDA=1.8V, R=1K, CL=50p, frequency = 400k;
5. VDDB=3.3V, VDDA=2.5V, R=1K, CL=50p, frequency = 400k;
6. VDDB=5.0V, VDDA=3.3V, R=1K, CL=50p, frequency = 400k;
7. VDDB=5.0V, VDDA=5.0V, R=1K, CL=50p, frequency = 400k;
8. **Netlist simulation V.S.IBIS simulation on B-side:**

PI6ULS5V9517B

**VOUT**

**SCL\_C**

**SDA\_C**

**Input Signals**

**SCL\_C**

**SDA\_C**

**VIN**

**SCL\_C**

**SDA\_C**

SDAB

**SCL\_C**

**SDA\_C**

SDAA

**SCL\_C**

**SDA\_C**

**…..**

**SCL\_C**

**SDA\_C**

VDDB

**SCL\_C**

**SDA\_C**

R=1kOhm

**SCL\_C**

**SDA\_C**

C=50pF

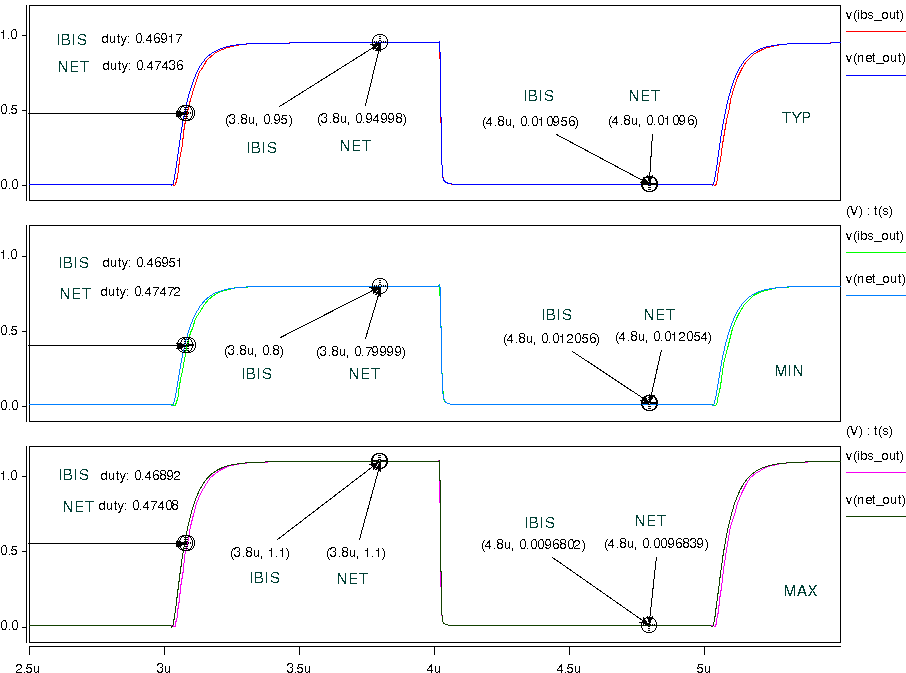
**SCL\_C**

**SDA\_C**

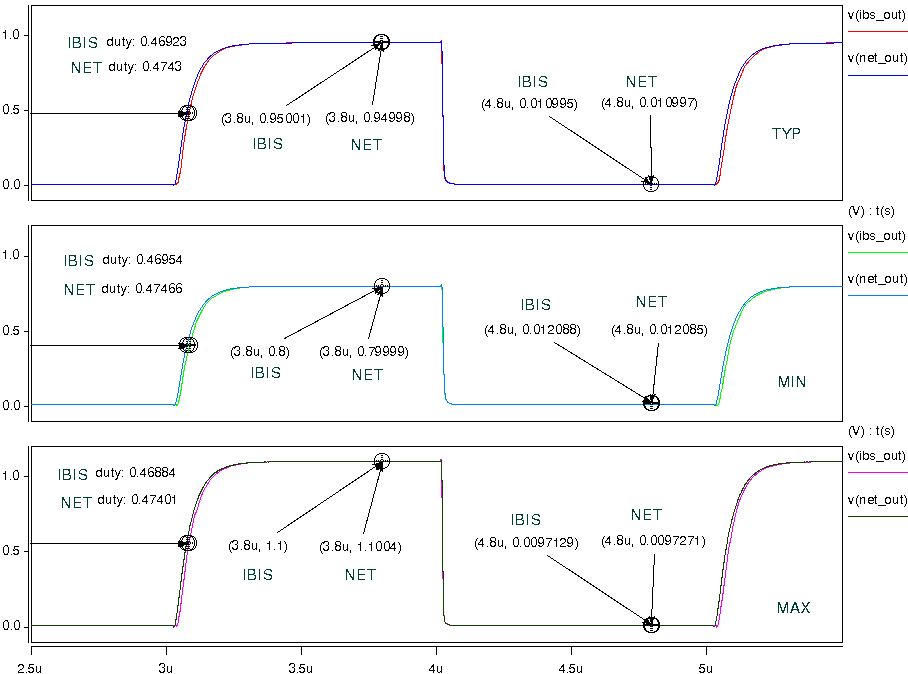
1. Simulation **without** package data;
2. Simulation **with** package data.
3. VDDB=2.5V, VDDA=5V, R=1K, CL=50p, frequency = 400k;
4. VDDB=3.3V, VDDA=5V, R=1K, CL=50p, frequency = 400k;
5. VDDB=5.0V, VDDA=5V ,R=1K, CL=50p, frequency = 400k;
6. **Conclusion:**

For the verification, the simulation results of IBIS model can match very well with the HSPICE model at above simulating conditions.

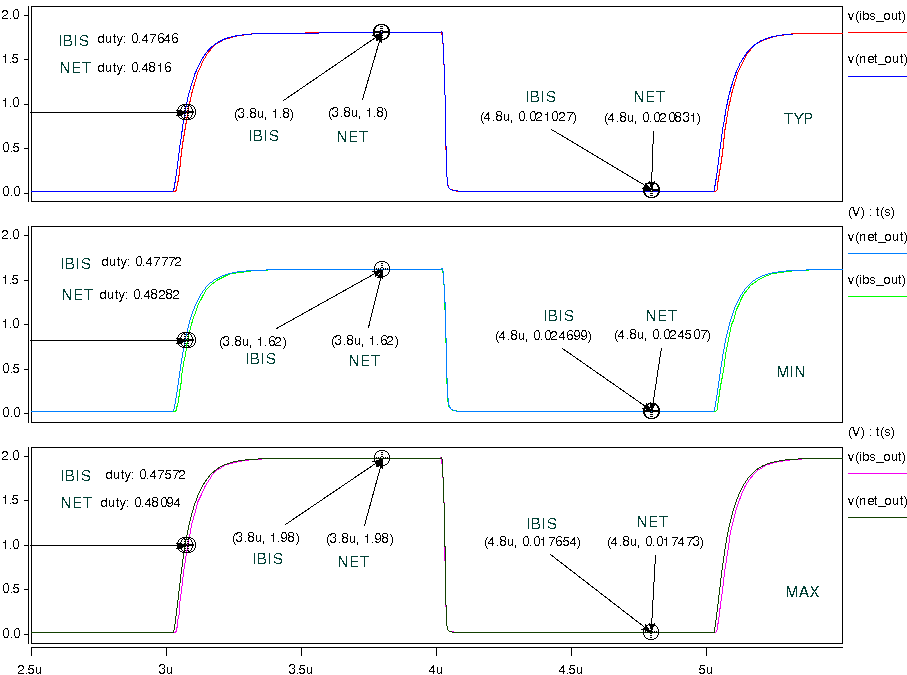
1. **Simulation waveform on A-side:**
2. VDDB=3.3V, VDDA=0.95V, R=1K, CL=50p, frequency = 400k;
3. Without package



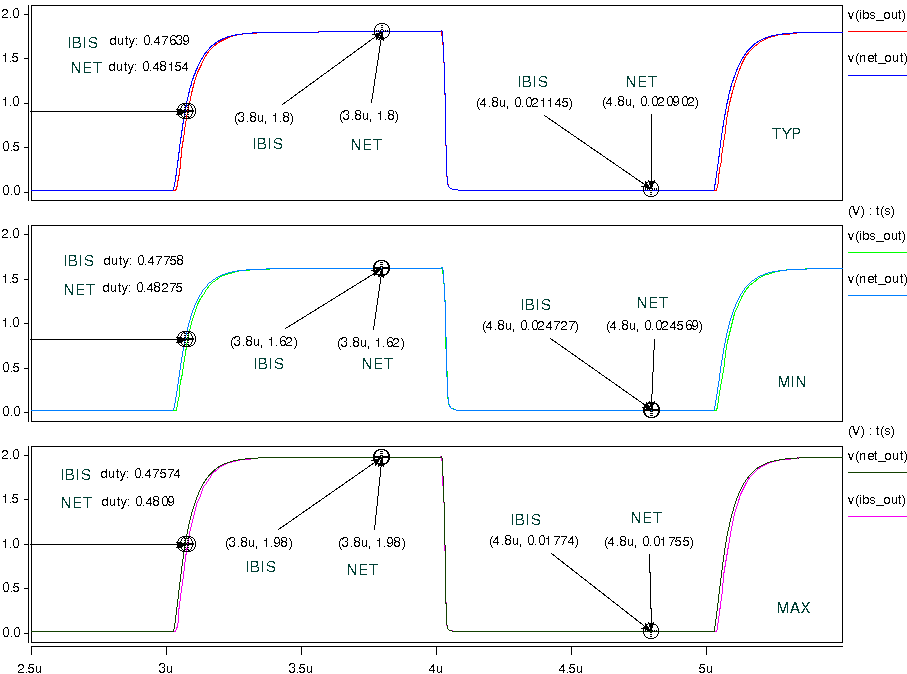
1. With package



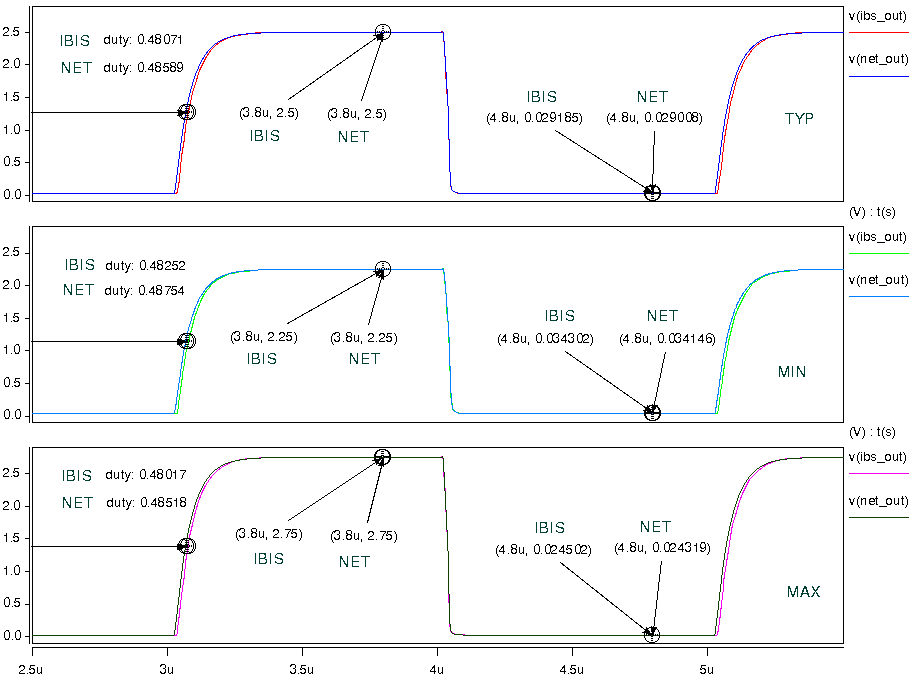
1. VDDA=1.8V, VDDB=3.3V, R=1K, CL=50p, frequency = 400k;
2. Without package



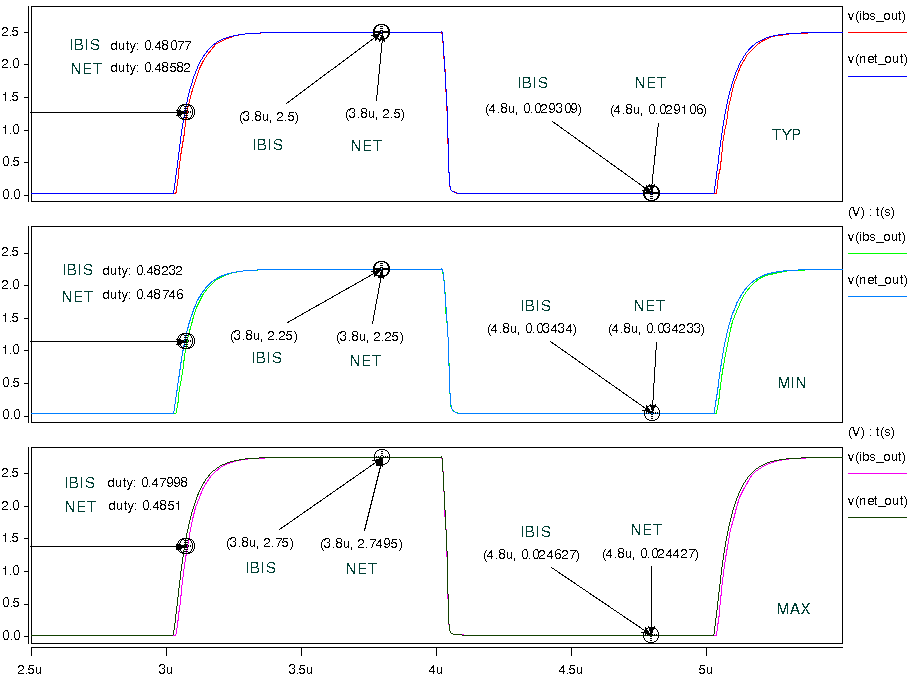
1. With package



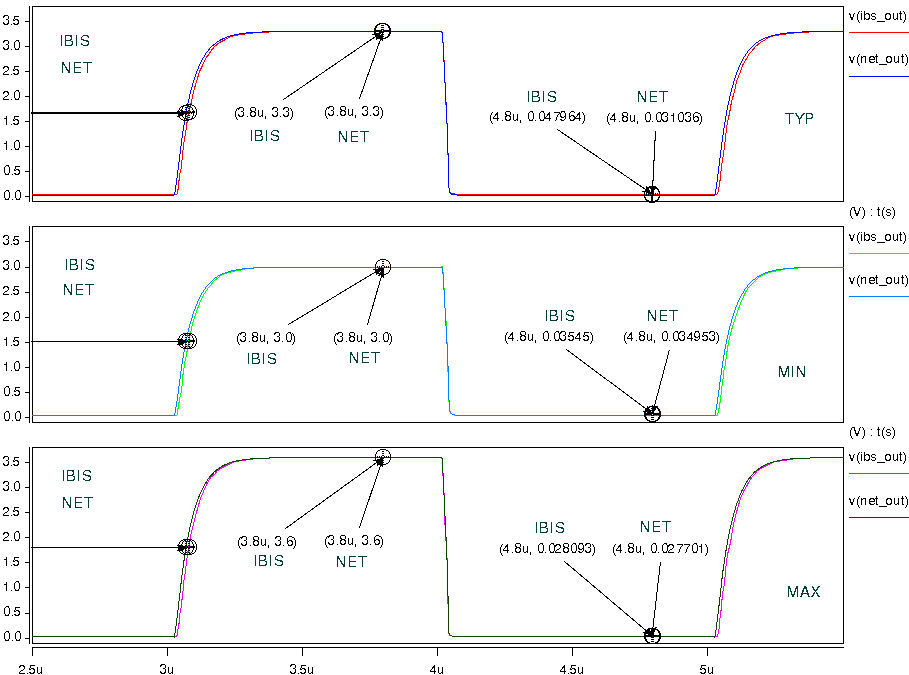
1. VDDA=2.5V, VDDB=3.3V, R=1K, CL=50p, frequency = 400k;
2. Without package



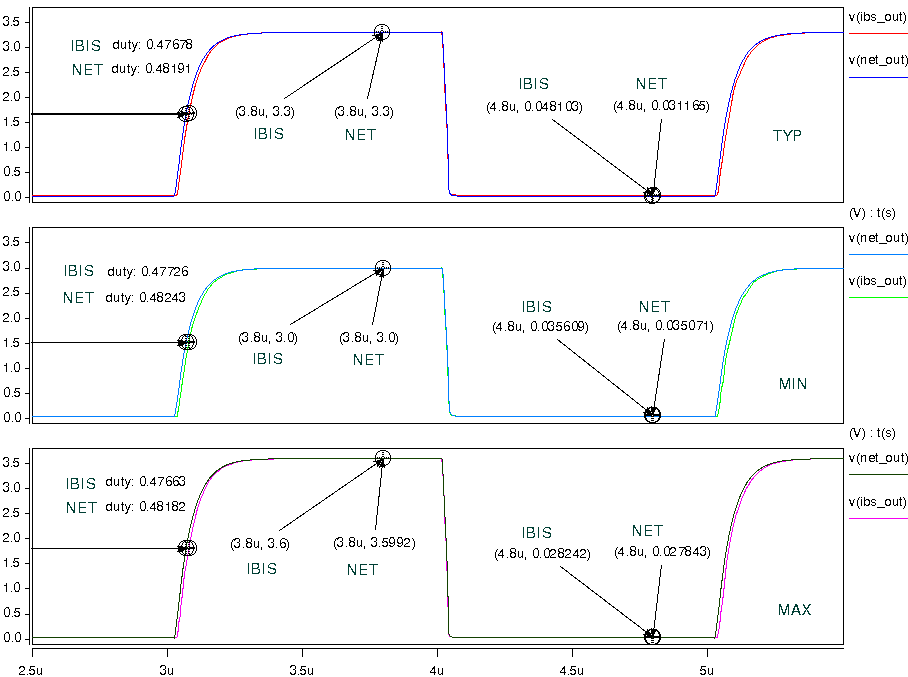
1. With package



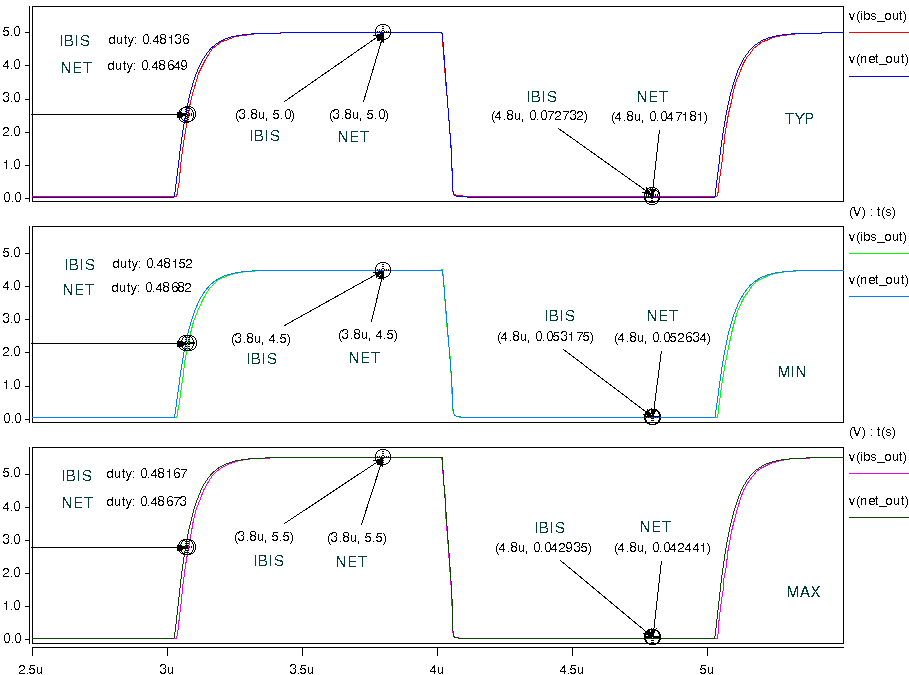
1. VDDA=3.3V, VDDB=5.0V, R=1K, CL=50p, frequency = 400k;
2. Without package



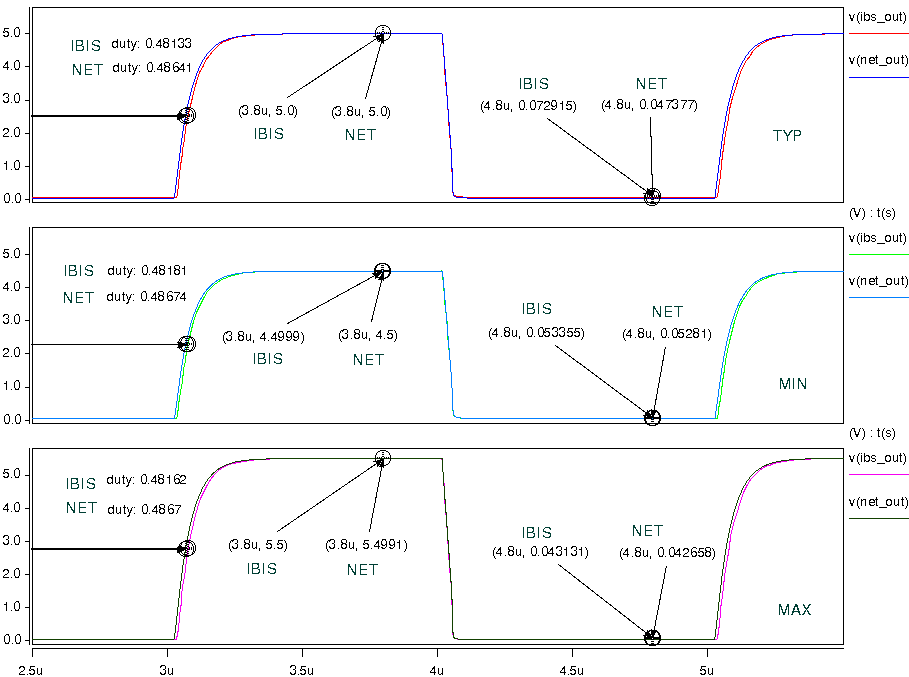
1. With package



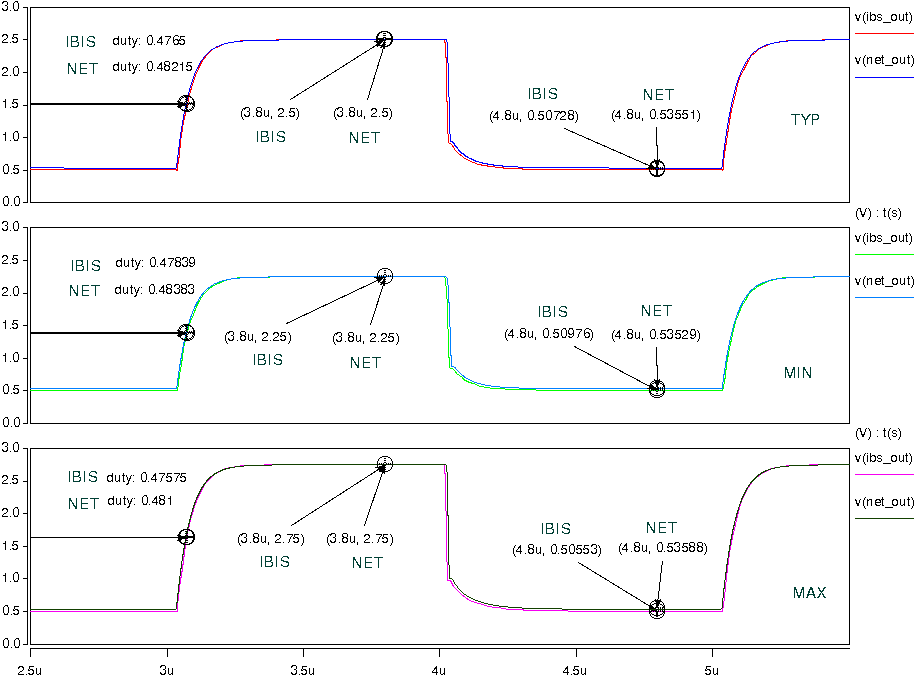
1. VDDA=5.0V, VDDB=5.0V, R=1K, CL=50p, frequency = 400k;
2. Without package



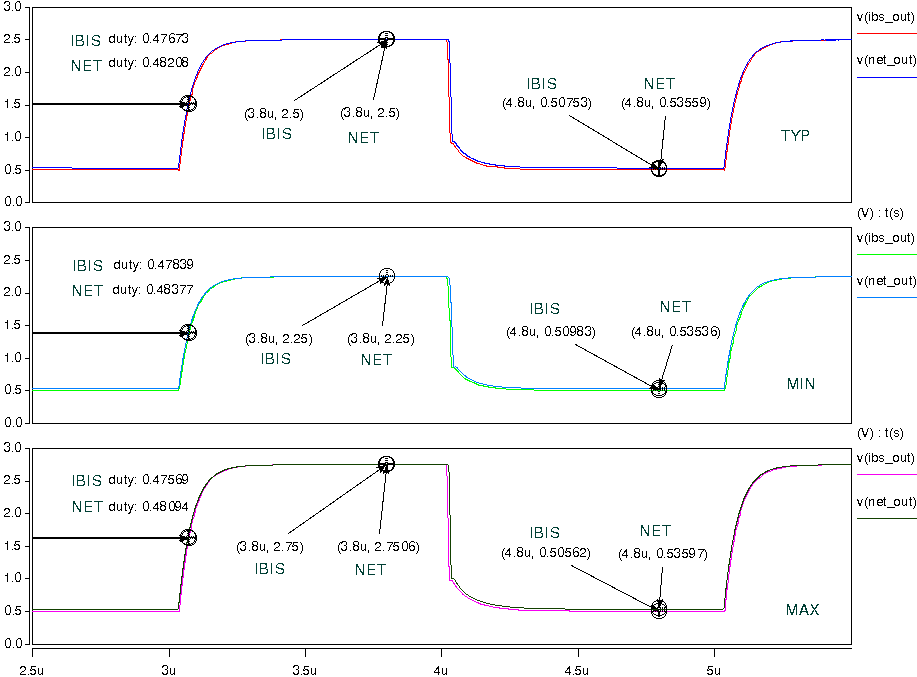
1. With package



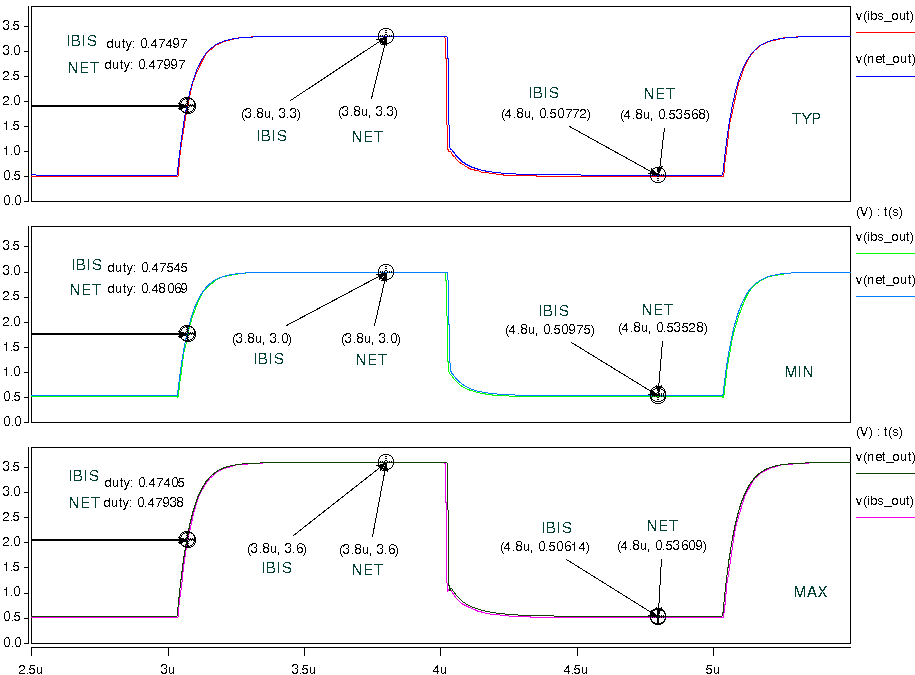
1. **Simulation waveform on A-side:**
2. VDDB=2.5V, VDDA=5V, R=1K, CL=50p, frequency = 400k;
3. Without package



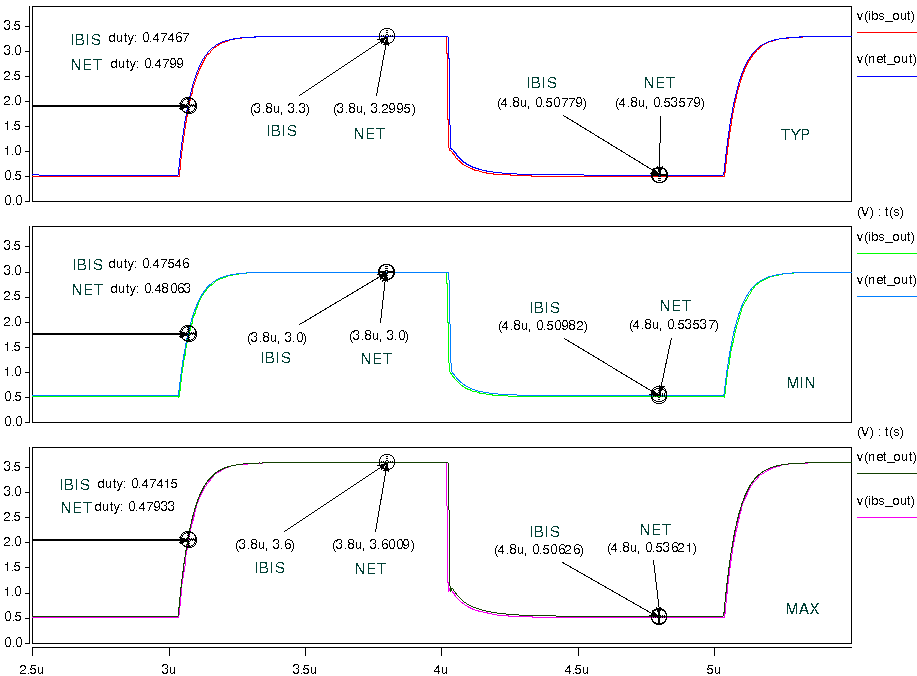
1. With package



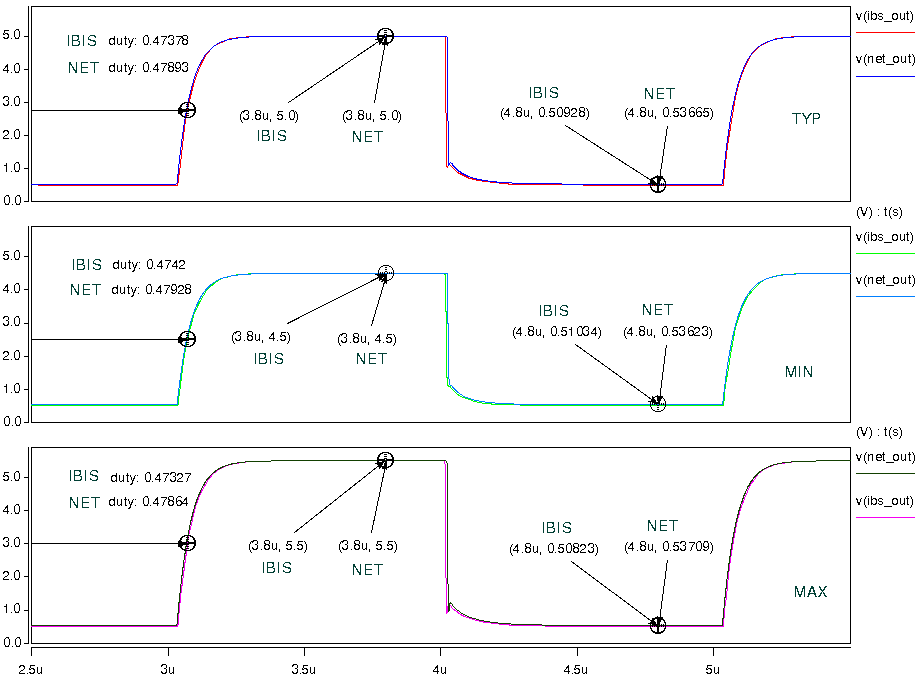
1. VDDB=3.3V, VDDA=5V, R=1K, CL=50p, frequency = 400k;
2. Without package



1. With package



1. VDDB=5.0V, VDDA=5V ,R=1K, CL=50p, frequency = 400k;
2. Without package



1. With package

