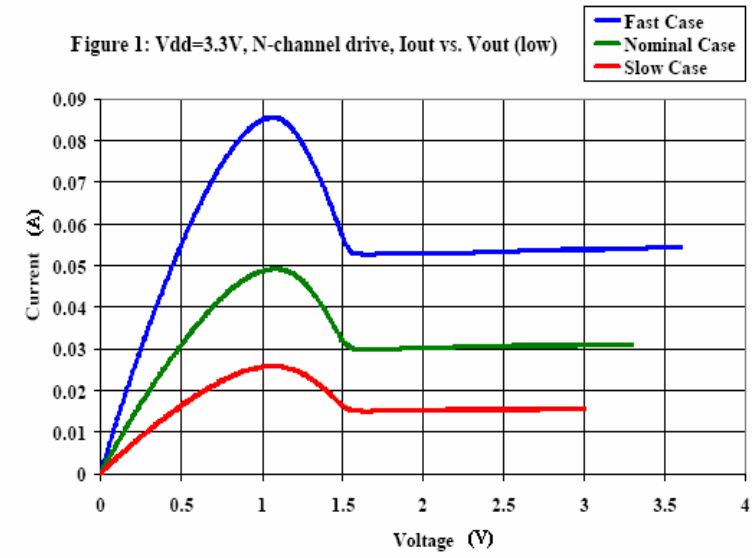
Aeroflex Application Note
UT54ACS164245S I_{OUT} vs. V_{OUT}

January 22, 2008

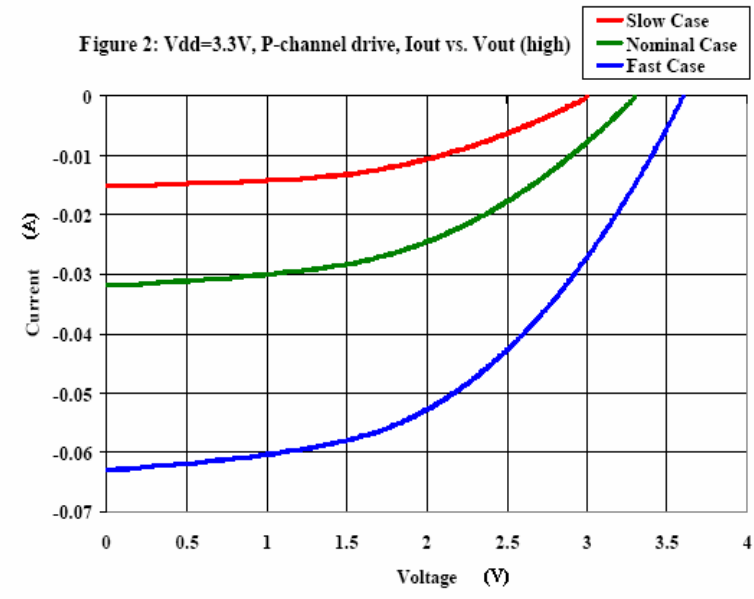
Background

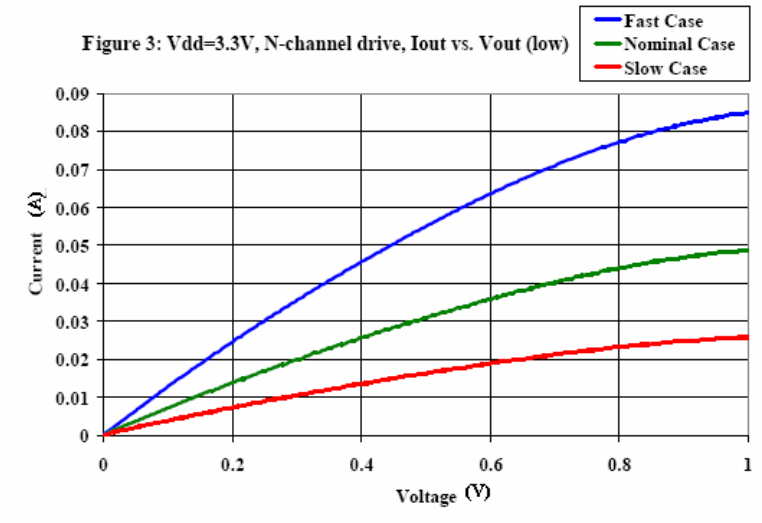
The purpose of this application note is to review the output current verses output voltage curves of Aeroflex Colorado Springs radiation-hardened, CMOS, 16-bit Bidirectional MultiPurpose Transceiver.

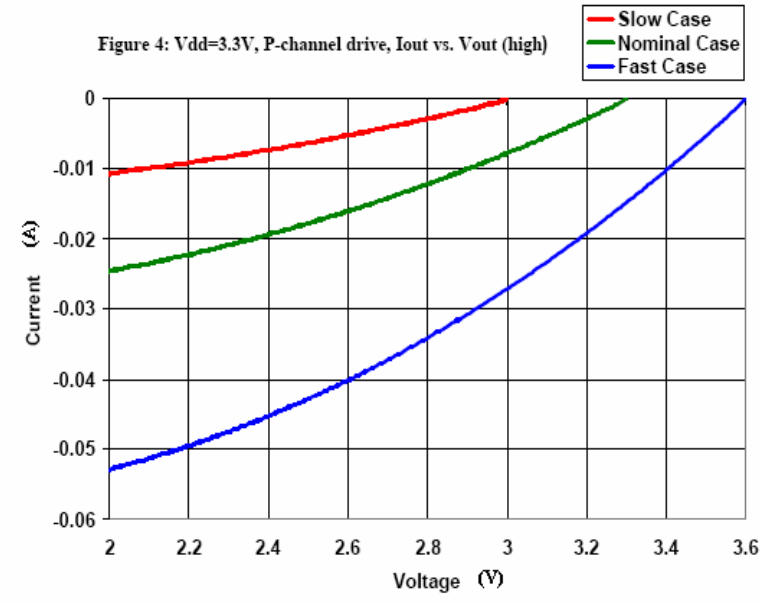
Test Conditions
Slow Case: 125°C, worst case models, V_{DD}=3.0V
Nominal Case: 25°C, nominal models, V_{DD}=3.3V
Fast Case: -55°C, best case models, V_{DD}=3.6V



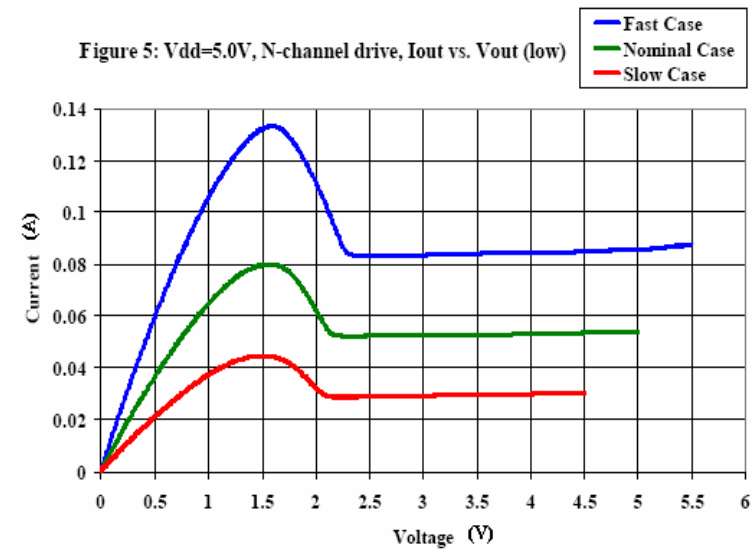
Note: The Hump at 1.0V is a result of the slew rate buffer.



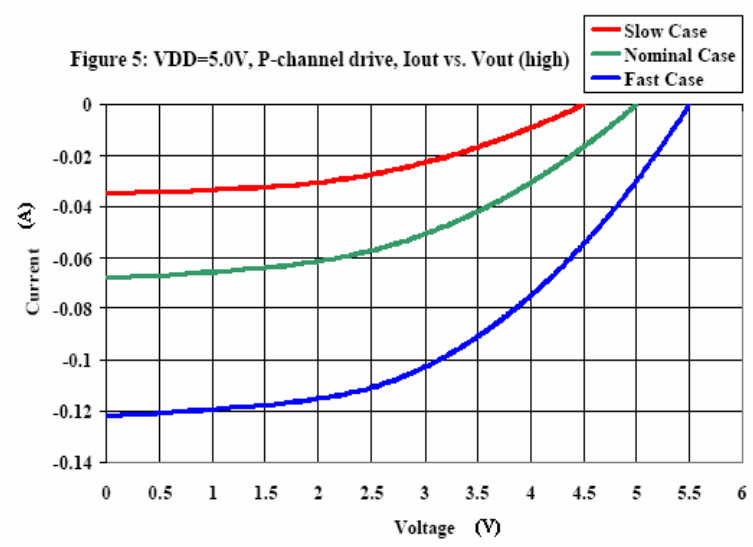




Test Conditions
Slow Case: 125°C, worst case models, V_{DD}=4.5V
Nominal Case: 25°C, nominal models, V_{DD}=5.0V
Fast Case: -55°C, best case models, V_{DD}=5.5V



Note: The Hump at 1.5V is a result of the slew rate buffer.



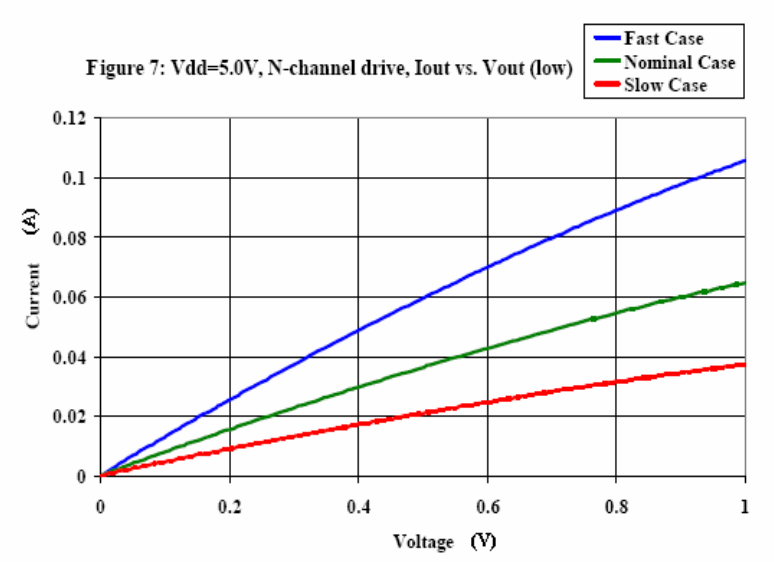


Figure 7: Vdd=5.0V, N-channel drive, Iout vs. Vout (low)

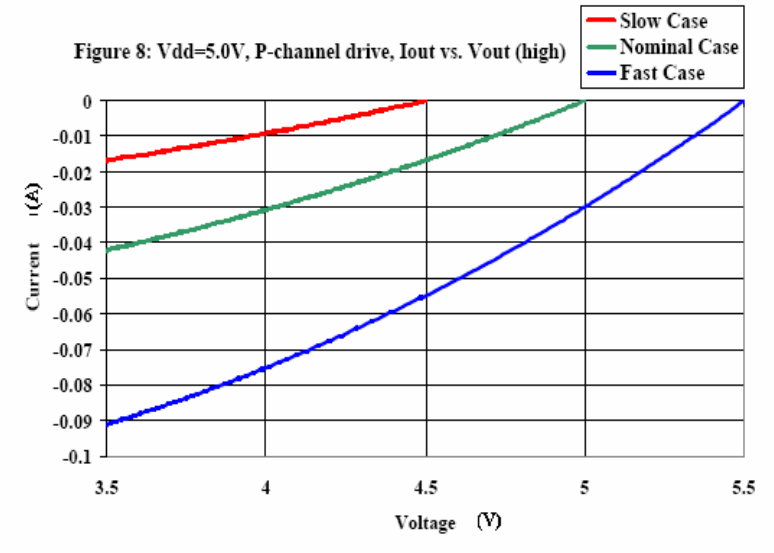
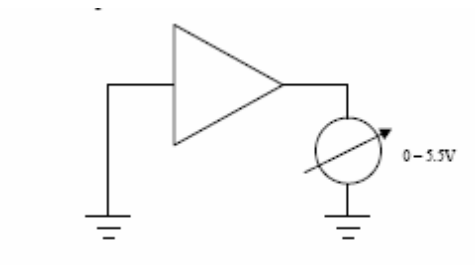
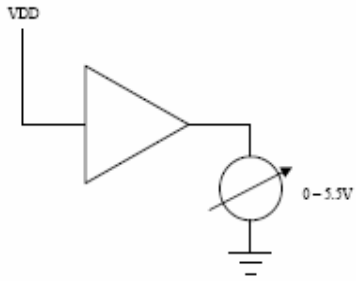


Figure 8: Vdd=5.0V, P-channel drive, Iout vs. Vout (high)

The following circuits show the buffer set up for the current verses voltage curves.



I_{OL} vs. V_{OL}



I_{OH} vs. V_{OUT}