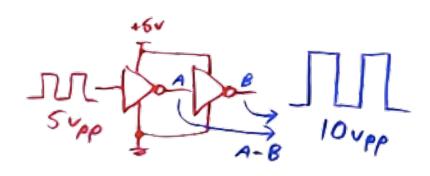
"Voltage doubling" to drive a LCD:



Mmmh... Voltage doubling, really ? NO!

Vpp is NOT A VOLTAGE.

A voltage is the difference of two potentials AT THE SAME POINT IN TIME. That is not how Vpp is measured though. Vpp describes a time-dependent signal and is the difference of the highest and lowest amplitude regardless of where those appear in time.

This isn't voltage doubling. You've got 5V DC in, you have 5V AC RMS coming out. Peak-to-peak is meaningless—there's never more than 5V across the LCD.