

NOTE: The internal return path for the oscillator is the VSSPLL pin. Therefore it is recommended to connect the common node of the resonator and the capacitor directly to the VSSPLL pin.

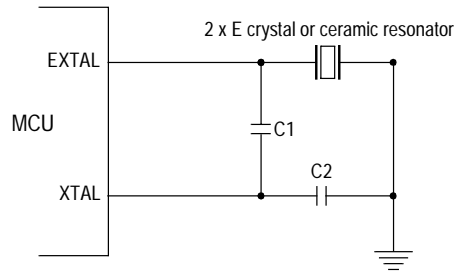


Figure 3-4. Common Crystal Connections

NOTE: When selecting a crystal, it is recommended to use one with the lowest possible frequency in order to minimise EMC emissions.

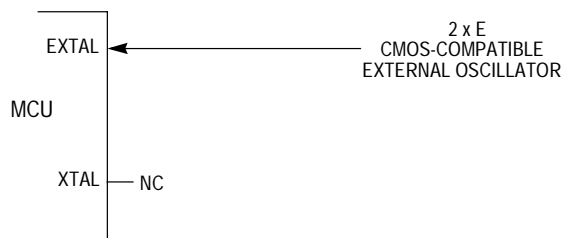


Figure 3-5. External Oscillator Connections

XTAL is the crystal output. The XTAL pin must be left unterminated when an external CMOS compatible clock input is connected to the EXTAL pin. The XTAL output is normally intended to drive only a crystal. The XTAL output can be buffered with a high-impedance buffer to drive the EXTAL input of another device.

In all cases take extra care in the circuit board layout around the oscillator pins. Load capacitances in the oscillator circuits include all stray layout capacitances. Refer to [Figure 3-4](#) and [Figure 3-5](#) for diagrams of oscillator circuits.