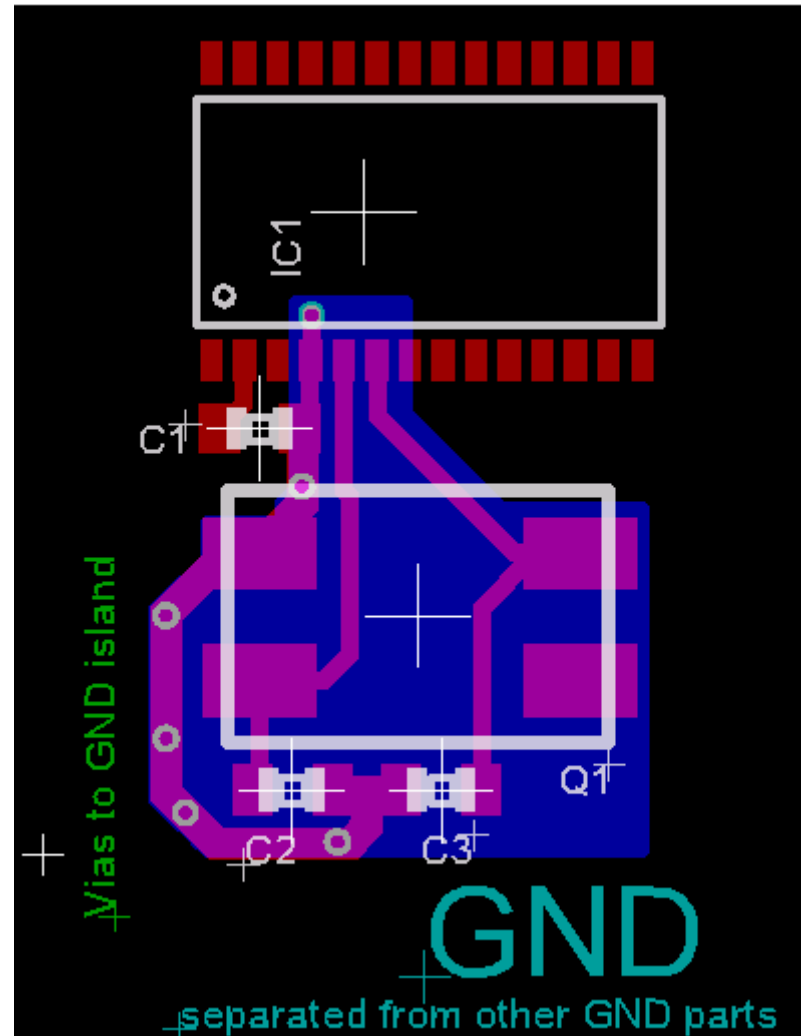# Crystal Oscillators – Layout Recommendations (specific examples)

Example for a MSP430F123 oscillator layout:

❑ Crystal as close as possible at XIN/XOUT terminals.

❑ Separate GND below the crystal and load capacitors connected to the Vss terminal.

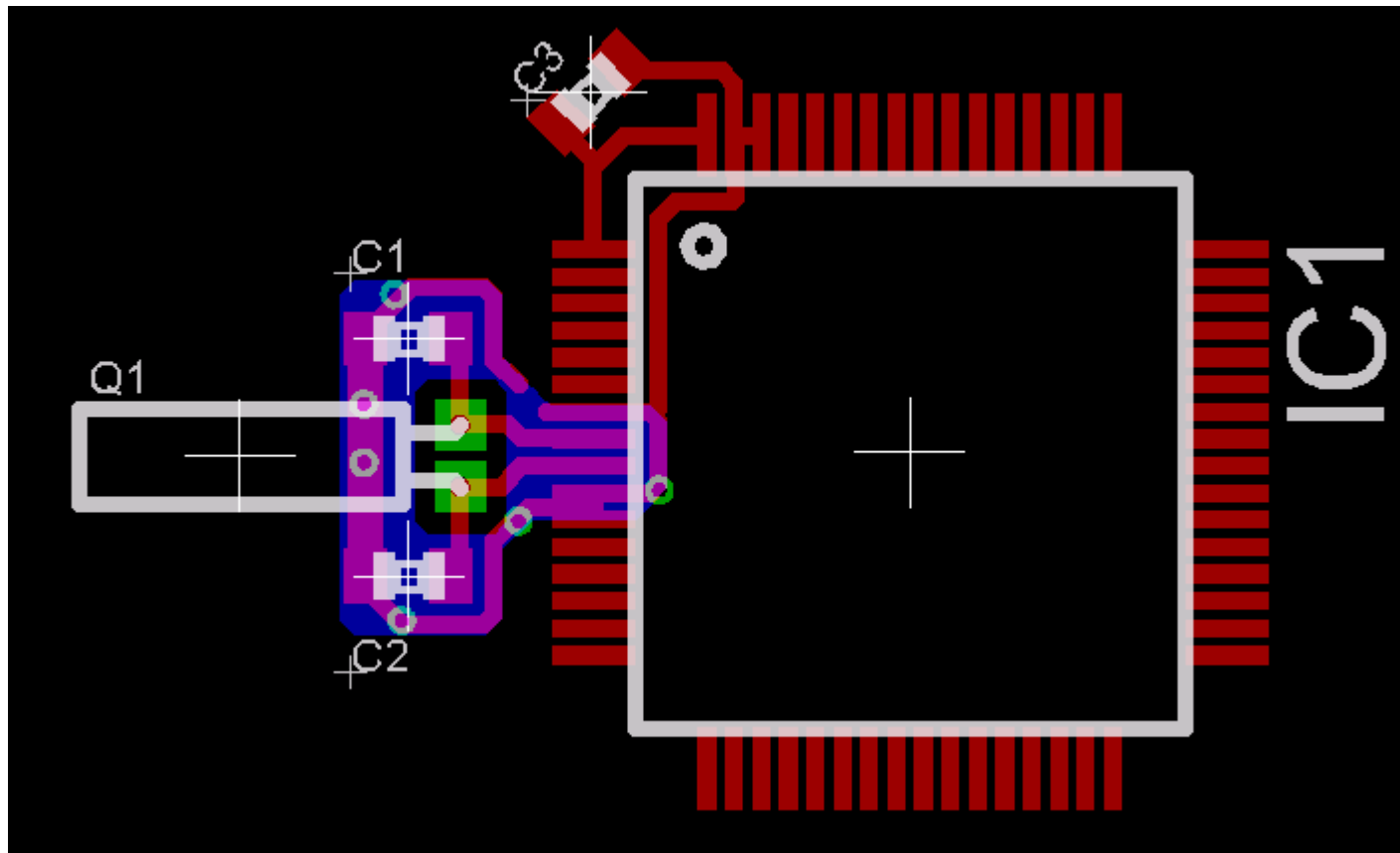❑ Load capacitors grounded to the separate GND.

Support:

❑ Application report covering all oscillator related topics is in work.

❑ The App.Rep. will also give tested layout examples for every specific MSP430 package.

TEXAS INSTRUMENTS

Crystal Oscillators – Layout Recommendations (specific examples)

Example for a MSP430F413 oscillator layout:

❑ Utilizing the nc spare pins beside the XIN/XOUT.

TEXAS INSTRUMENTS

Crystal Oscillators – Layout Recommendations (specific examples)

Example for a MSP430F13x/14x XT2 oscillator layout:

❑ Distance between crystal an oscillator pins as short as possible

❑ Separate GND

❑ Load not absolutely balanced, can be compensated by C1/C2 adaptation.

TEXAS INSTRUMENTS