

Figure 16: Simplified crystal model

The crystal needs to have parameters ESR,  $C_0$ , and  $C_L$  selected to ensure the crystal oscillator is stable.

The following figure shows the maximum allowable combinations of ESR,  $C_0$  and  $C_L$  for a given crystal. A crystal is supported if that crystal's parameters fall directly on the line or below it. Crystals that are above the line are not supported.

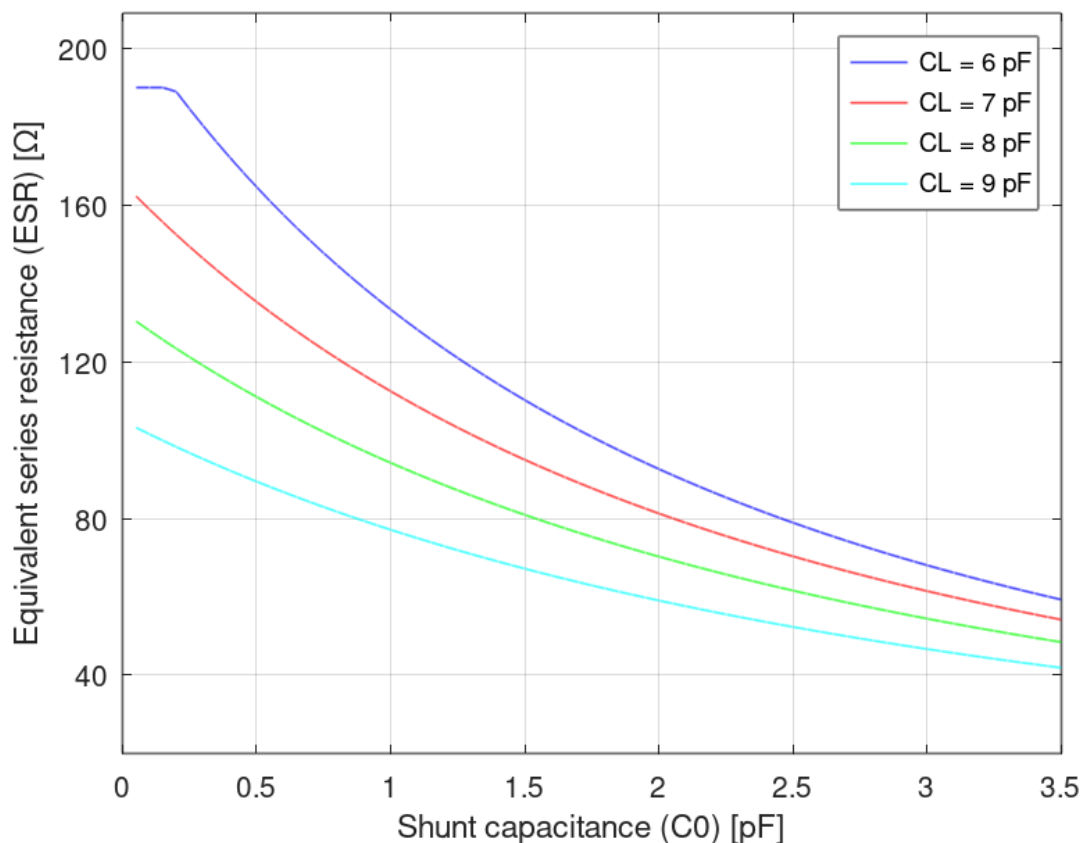


Figure 17: Maximum allowed combinations of ESR and  $C_0$  for a given load capacitance  $C_L$

### 5.5.2 Low-frequency (32.768 kHz) crystal oscillator (LFXO)

For clock accuracy higher than LFRC, the 32.768 kHz crystal oscillator (LFXO) must be used.

To use the LFXO, a 32.768 kHz crystal must be connected between the **XL1** and **XL2** pins, as shown in the following figure.