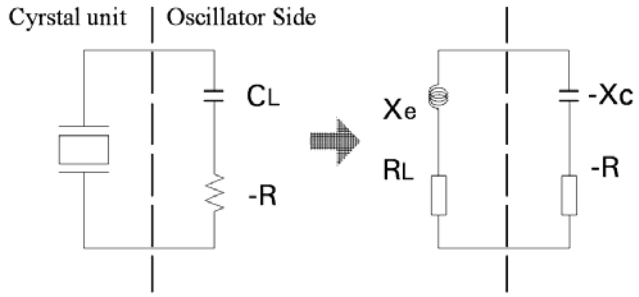
Oscillation Condition and Negative resistance



Equivalent circuit of
Crystal unit and oscillator

Oscillation start condition

$RL < |-R|$

Oscillation steady state

$RL = |-R|$

When designing an oscillator circuit, negative resistance (−R) is very important parameter to consider. To start oscillator, the negative resistance (−R) of the oscillator circuit must be greater than the Load resonance resistance (*RL*) of a crystal unit, at least 3times of *RL*.

The mutual conductance of the oscillation circuit decreases after oscillation has started to continuously compensate for the power loss due to the load resonance resistance of the crystal unit, which continues oscillation.

For additional Information, Pleas Contact

IMTECH Co., Ltd.
4F, Sincere B/D, 332-34, Gocheon-Dong, Uiwang-City
Kyunggi-Do, Korea.
Tel 82-459-5197 Fax 82-31-459-5198