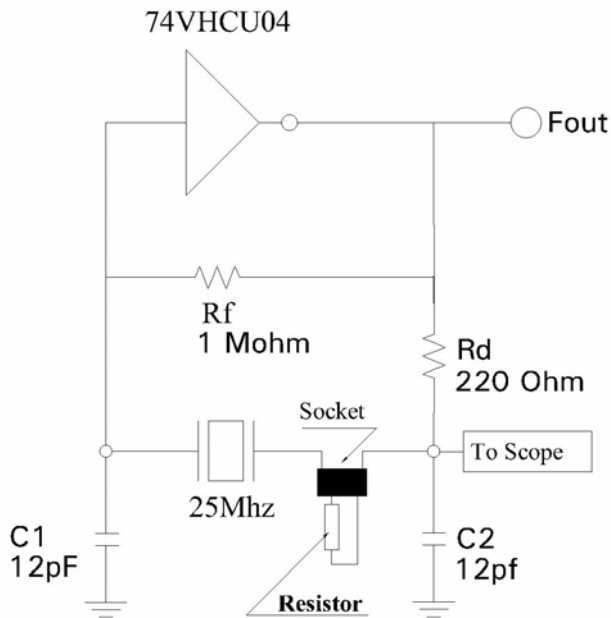


Negative resistance measurement



N.R(-R) Measurement

1. N.R measurement

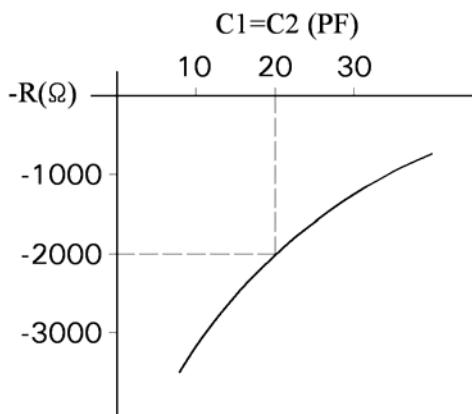
Negative Resistance is the Circuit ability to start the crystal unit. (R_s : Crystal Load resonance resistance).

Below are the most practical procedures of N.R measurement method.

1. Connect resistor in series with a quartz crystal as shown figure.
2. Reduce resistance, repeating Power on/off until oscillation reaches normal conditions.
3. Measure the resistor.
4. Using the following equation, estimated the N.R: $NR = -(R_s + Resistor)$.
5. It's preferable to $-R$, usually, $NR > (3\sim 7) \times R_s$.

The limit of ESR specification is determined by above calculations.

2. Negative Resistance variation as CL



The CL rise reduces the margin of negative resistance.

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