The Using NJU6355

New Japan Radio Co., Ltd.
Digital LSI Section
Marketing Department 1

1, CLOCK PULSE

CLK pulse signal must be "Low" at rising or falling edge of the signal into the "CE" terminal.

2, X'tal

The NJU6355 series oscillate with only X'tal connecting to pin 2 and 3. However , this oscillation depends on the characteristics parameter of each X'tal, so that it sometimes oscillates incorrectly or not.

The NJU6355 contains capacitance as "Cg" to pin 2 and "Cd" to pin 3 in the chip. The constants of version "E" are 21 pF of "Cg" and 21 pF of "Cd". An optimum X'tal should be selected for the correct and accurate oscillation with "Cg" , "Cd" and any stray capacitance.

As typically example, the oscillation characteristics of "CL = 9pF" X'tal are shown for the reference. The X'tal should be selected with all tolerances of internal and external capacitance, stray capacitance and others.

Especially, the capacitance of "Cd" influence much more than "Cg" to the accuracy of oscillation. In case of smaller capacitance to "Cg", a little difference of capacitance influences the tolerance of oscillation frequency to wide. Therefore, the correct and accurate oscillation should require an external capacitance as "Cg" to pin 2.

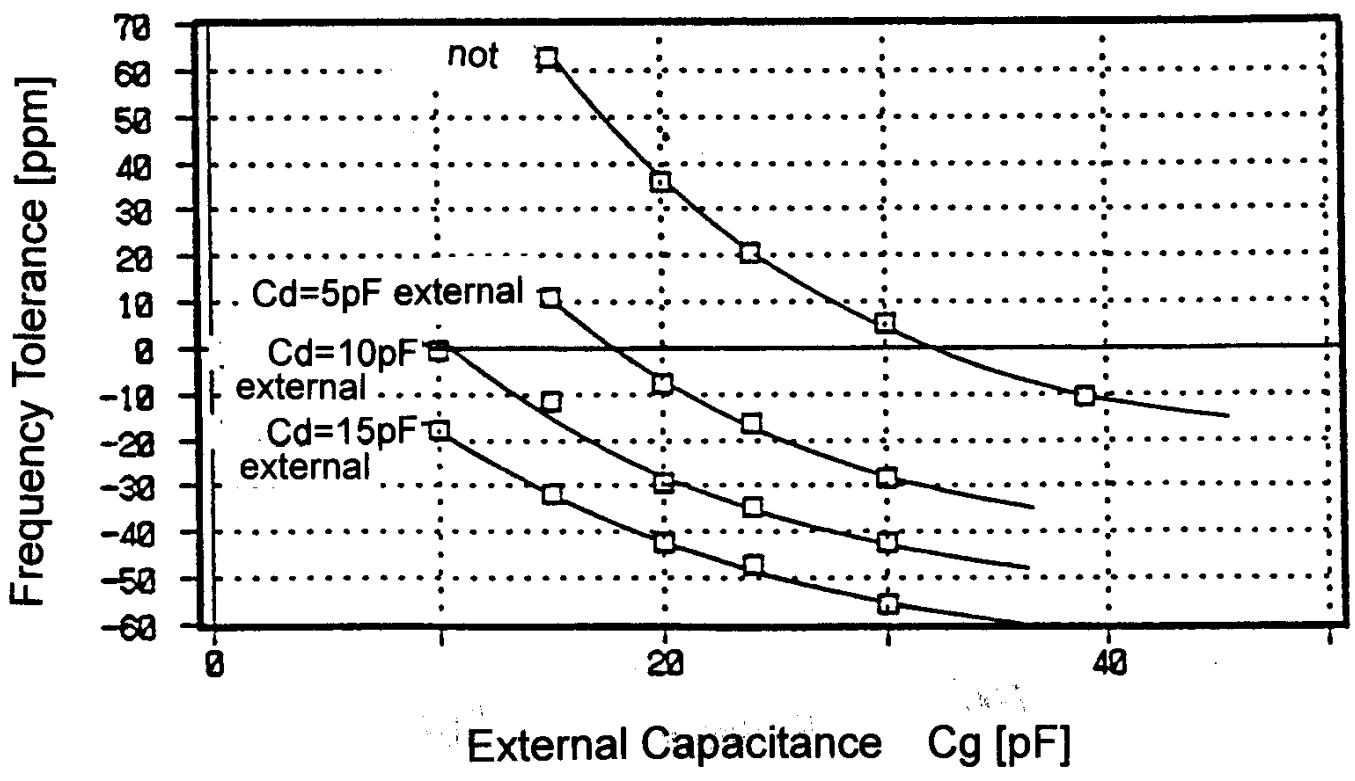

Fig 1. NJU6355EM Cg / Cd Capacitance – Frequency Tolerance

Crystal unit (CL= 9 [pF]), 5 [V], 25 [deg].

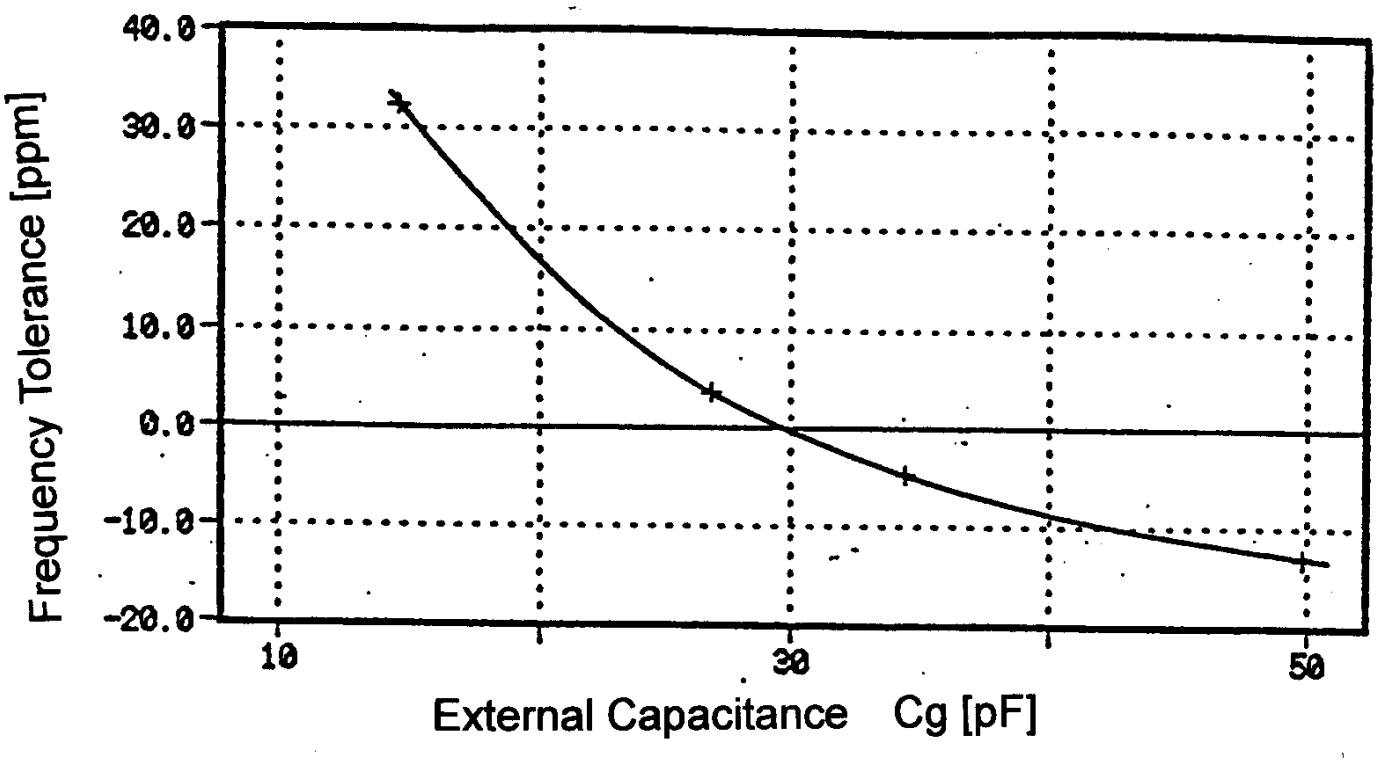

Fig. 2 External Capacitance – Frequency Tolerance
(5 [V] , Ta=25 [deg] , Crystal unit : R=30k [ohm] Cl=12 [pF])

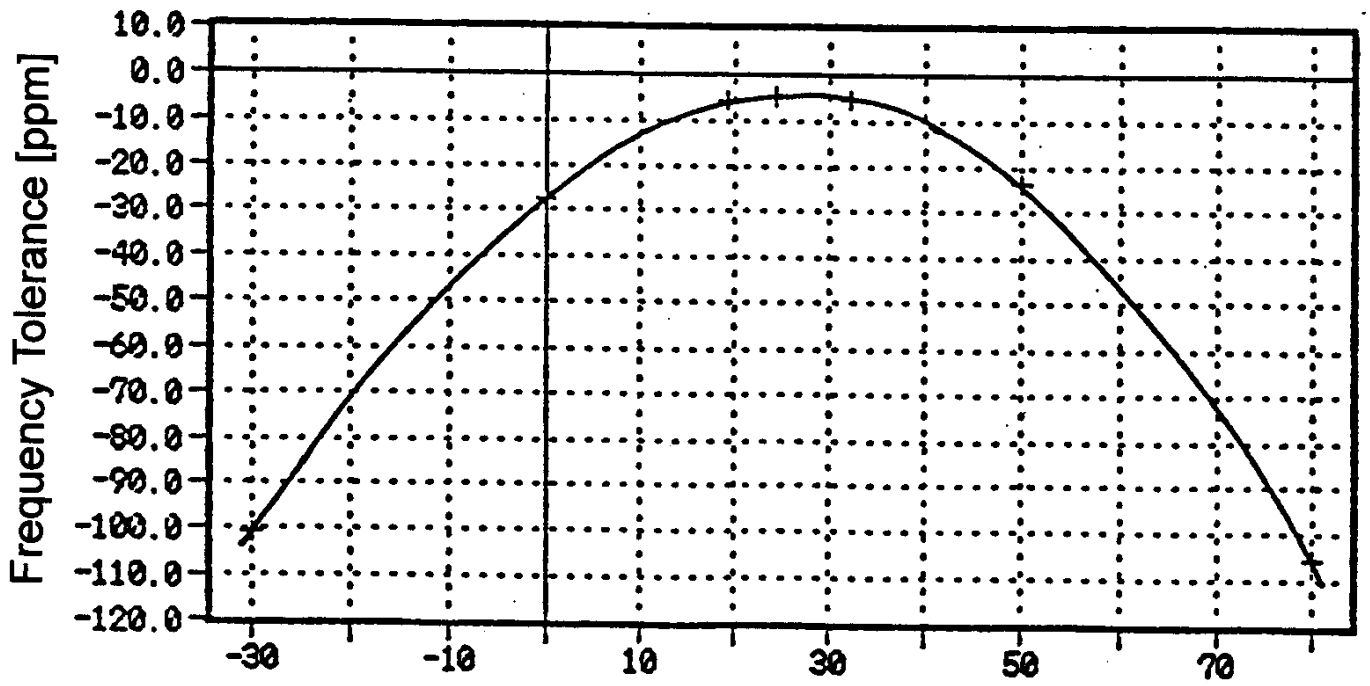

Fig. 3 Temperature – Frequency Tolerance
(5 [V] , Cg=34 [pF] , Ta=25 [deg] , Crystal unit : R=30 [k Ohm] Cl=12 [pF])