



US 20240223127A1

(19) **United States**

(12) **Patent Application Publication**
LI et al.

(10) **Pub. No.: US 2024/0223127 A1**

(43) **Pub. Date: Jul. 4, 2024**

(54) **RC OSCILLATOR**

(52) **U.S. Cl.**

CPC **H03B 5/04** (2013.01); **H03B 5/24** (2013.01)

(71) Applicant: **GIGADEVICE SEMICONDUCTOR INC.**, Beijing (CN)

(72) Inventors: **Sheji LI**, Beijing (CN); **Sanlin LIU**, Beijing (CN)

(21) Appl. No.: **18/369,159**

(22) Filed: **Sep. 16, 2023**

(30) **Foreign Application Priority Data**

Dec. 29, 2022 (CN) 202211709872.6

Publication Classification

(51) **Int. Cl.**
H03B 5/04 (2006.01)
H03B 5/24 (2006.01)

(57) **ABSTRACT**

Disclosed is an RC oscillator comprising: a bias circuit, generating first and second bias currents, and outputting a charging current proportional to a total bias current that is the sum of the first and second bias currents, wherein the ratio of the first bias current to the second bias current has a positive temperature coefficient; and an oscillation circuit, for periodically charging a capacitor using the charging current output by the bias circuit, and using a voltage across a resistor through which the second bias current or a current proportional thereto flows as a reference voltage to compare with a charging voltage on the capacitor, so as to obtain a periodically oscillating clock signal. Thus, the present disclosure can compensate the positive temperature coefficient of the subsequent delay and realize the RC oscillator with low temperature drift by making the charging time of the capacitor have a negative temperature coefficient.

