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Chen(10) **Pub. No.: US 2022/0376685 A1**(43) **Pub. Date: Nov. 24, 2022**(54) **GAIN-BOOSTED COMPARATOR***H03F 3/45* (2006.01)*H03K 19/20* (2006.01)(71) Applicant: **MEDIATEK INC.**, Hsin-Chu (TW)(52) **U.S. Cl.**(72) Inventor: **Pin-Wen Chen**, Hsinchu City (TW)CPC *H03K 5/22* (2013.01); *H03K 3/037*
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The present invention provides a dynamic comparator including a dynamic amplifier and a latch circuit. The dynamic amplifier includes a first input pair, a current source and a gain boosting circuit. The first input pair is configured to receive an input signal to generate an amplified signal at an output terminal. The current source is coupled between the first input pair and a first reference voltage. The gain-boosting circuit is coupled between the first input pair and a second reference voltage, and is configured to receive the input signal to selectively inject current to the output terminal or sink current from the output terminal. The latch circuit is coupled to the dynamic amplifier, and is configured to receive the amplified signal to generate an output signal.

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