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**CORRECTED PUBLICATION**

(54) **WIDE INPUT RANGE AND LOW NOISE  
COMPARATOR WITH TRIGGER TIMING  
CONTROL AND/OR GAIN BOOSTING**

**Publication Classification**

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(57) **ABSTRACT**

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A multi-stage comparator includes a first stage circuit, a second stage circuit, and a control circuit. The first stage circuit receives an input signal of the multi-stage comparator, generates a first-stage output signal according to the input signal, and outputs the first-stage output signal at an output port of the first stage circuit. The second stage circuit receives a second-stage input signal at an input port of the second stage circuit, and performs a second-stage operation to generate an output signal of the multi-stage comparator. The control circuit is coupled between the output port of the first stage circuit and the input port of the second stage circuit, and controls a start time of the second-stage operation.

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