

CURRENT COMPARATOR AND METHOD THEREFOR

ABSTRACT OF THE DISCLOSURE

A comparator (20, 30) for comparing first and second current inputs includes a first stage that has a first resistor (43) being coupled to a first input node and operable to produce the a first voltage level corresponding to the first current input at a first voltage node when a $\overline{CLK}$ signal is high. A second resistor (45) is provided and is coupled to a second input node and operable to produce a second voltage level corresponding to the second current input at a second voltage node when the $\overline{CLK}$ signal is high. A pair of cross-coupled transistors (36, 37) are coupled to the first and second voltage nodes when a CLK signal is high and are operable to latch the first and second voltage levels when the CLK signal is high. A first differential amplifier (60) is coupled to the first voltage node and is operable to receive the latched first voltage level at a non-inverting input and the latched second voltage level at an inverting input and to generate a first amplified voltage level when the CLK signal is high. A second differential amplifier (62) is coupled to the second voltage node and is operable to receive the latched first voltage level at an inverting input and the latched second voltage level at a non-inverting input and to generate a second amplified voltage level when the CLK signal is high. A pair of cross-coupled NOR gates (80, 82) are coupled to the first and second differential amplifiers (60, 62) and is operable to latch the amplified first and second voltage levels, where the first amplified voltage level is a comparison output.

Figure 2

